**COMMENTS OF PUBLIC INTEREST PATENT LAW INSTITUTE
ON UNITED STATES PATENT AND TRADEMARK OFFICE
INVENTORSHIP GUIDANCE FOR AI-ASSISTED INVENTIONS**

**Docket Number: PTO-P-2023-0043
May 13, 2024**

I. INTRODUCTION.

The Public Interest Patent Law Institute ("PIPLI") offers these comments in response to the United States Patent and Trademark Office's ("USPTO's") request for information regarding inventorship guidance for AI-assisted inventions, Docket No. PTO-P-2023-0043, published at 89 Fed. Reg. 10043 on February 13, 2024 (the "Request").

PIPLI is a nonprofit, nonpartisan organization dedicated to ensuring the patent system promotes innovation and access for the benefit of all. Many Americans contribute to and depend on advances in science and technology, but do not participate directly in the patent system, including research scientists, independent technology developers, farmers, small businesses, and patients. The patent system concretely affects their ability to create, compete, and thrive, but their interests are rarely represented. PIPLI's mission is to enhance public representation throughout the patent system so that it can promote innovation more effectively and equitably for all. In service of this mission, PIPLI conducts policy research; provides pro bono assistance to individuals and organizations on patent-related matters; advocates for greater transparency throughout the patent system; and submits amicus briefs and comments on issues of patent law and policy to courts, government agencies, and standard-setting organizations.

II. OVERVIEW.

The USPTO's application of patent law to AI-assisted inventions is vitally important to the public. Given the increasing number of patents claiming AI-assisted inventions and the increasing use of AI to develop medical treatments and diagnostics, the public has a strong interest in ensuring that: (a) patents issue only if they comply with the Patent Act; and (b) exclusive rights are conferred only with respect to truly novel and non-obvious inventions.

As the Request recognizes, there is another requirement, which is especially relevant to AI: patentable inventions must be attributable to human inventors. Now that this requirement is clear, the critical task becomes ensuring patents on AI-assisted inventions comply with this requirement.

PIPLI agrees with much of the USPTO's inventorship guidance for AI-assisted inventions but believes additional steps are necessary for examiners to decide inventorship questions arising in this context accurately and reliably. Specifically, PIPLI urges the USPTO to: (a)

strengthen mechanisms for ensuring compliance with Section 112, which can reveal and resolve AI inventorship questions; (b) encourage and empower examiners to request additional information about inventorship when reasonable questions or doubts arise; and (c) promulgate requests for public comment regarding the application of Section 112 to AI-assisted inventions akin to the recently-published request for information regarding the impact of the proliferation of AI on considerations relevant to assessing obviousness under Section 103.[1]

III. PROPOSALS FOR ENSURING COMPLIANCE WITH THE HUMAN INVENTORSHIP REQUIREMENT.

As the USPTO and Federal Circuit have recognized, the Patent Act authorizes granting patents only to inventors and, thus, only to humans.[2] As a result, AI systems cannot be named as inventors on patents. With that matter settled, the question becomes how to ensure that patents and patent applications claiming AI-assisted inventions are in fact attributable to their human inventors.

The guidance in the Request represents a positive step, but it does not adequately address the challenges that are likely to arise in determining whether a human conceived of—and therefore invented—an AI-assisted invention. Without further guidance, there will be too much uncertainty and inconsistency across examiner decisions and too great a likelihood that patents will issue that do not comply with the law.

PIPLI urges the USPTO to take additional steps and offers the following proposals for identifying and addressing inventorship questions involving AI-assisted inventions.

A. *Strengthening the Application of Section 112 Will Reveal and Resolve Inventorship Questions Regarding AI-assisted Inventions.*

One of Section 112's purposes is ensuring that inventions are truly attributable to, and thus in the possession of, the inventors claiming them.[3] Section 112 achieves this purpose by requiring patent applicants to claim their invention, describe it in writing, and enable its manufacture and use. *See* 35 U.S.C. § 112.

While this information is required for Section 112, it is also highly relevant for inventorship. The extent to which an applicant does (or does not) describe their invention adequately may be attributable to language, but it may also be attributable to

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[1] USPTO, Docket No. PTO-P-2023-00, 89 FR 34217, Apr. 30, 2024, https://www.federalregister.gov/documents/2024/04/30/2024-08969/request-for-comments-regarding-the-impact-of-the-proliferation-of-artificial-intelligence-on-prior.

[2] Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg. 10043 (Feb. 13, 2024); Thaler v. Vidal, 43 F.4th 1207, 1211 (Fed. Cir. 2022).

[3] 35 U.S.C. § 112; Lisa Larrimore Ouellette, 25 HARV. J. OF L. & TECH. 531 (2012).

the inventor's understanding of their invention—and thus to their conception of that invention (or lack thereof).

Ensuring applications fully comply with Section 112 is independently critical and additionally useful as a way to evaluate and ensure inventorship.[4] PIPLI respectfully urges the USPTO to take steps to improve the quality of examination with respect to Section 112 for applications claiming AI-assisted inventions—for example, expanding work allocations for examiners in the relevant art unit, assigning multiple examiners to the same application, and/or conducting a pilot program to study the impact of these or other similar measures.

> **B. The USPTO should empower examiners to request more information on inventorship when reasonable questions arise.**

Examiners should be encouraged and empowered to request more information from applicants when they have reasonable questions about inventorship of AI-assisted inventions. We urge the USPTO to impose a more appropriate threshold for examiners to issue such requests than the guidance currently provides.

PIPLI is particularly concerned about the portion of the guidance that states as follows:

> [I]f an examiner or other USPTO employee has a reasonable basis to *conclude* that one or more named inventors may not have contributed significantly to the claimed subject matter, the examiner or other USPTO employee may request information from the applicant regarding inventorship even if the information is not material to patentability.[5]

Requiring examiners to have a reasonable basis to "conclude" that problems exist before they can request additional information effectively ensures they will rarely, if ever, make such requests. If an examiner has a reasonable question or doubt about an application's inventorship, the examiner may not have a reasonable basis for a conclusion of any kind. Thus, under the guidance, the examiner would not be permitted to request more information. That standard is far too restrictive. By requiring examiners to have

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[4] National Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1195 (Fed. Cir. 1999). Section 112 provides, in relevant part: "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112(a).

[5] Request at 10050 (emphasis added).

conclusions about inventorship before they can make requests for additional information, the guidance prevents examiners from requesting information they need to in order to form such conclusions in the first place.

PIPLI respectfully urges the USPTO to provide a more appropriate threshold—e.g., allowing an examiner to request more information when the examiner has a reasonable basis on which to question or doubt the inventorship of an AI-assisted invention.

C. *The USPTO should request public Comments and formulate guidance on ensuring patents claiming AI-assisted inventions reliably comply with Section 112.*

The correct application of Section 112 to patents claiming AI-assisted inventions is critically important. As the USPTO recently stated in a request for comments regarding the application of Sections 103 to such patents, "[t]he increasing power and deployment of AI has the potential to provide tremendous societal and economic benefits and foster a new wave of innovation and creativity while also posing novel challenges and opportunities for IP policy."[6]

PIPLI commends the USPTO for recognizing these challenges in the context of Section 103 and urges it to do the same for Section 112. Specifically, PIPLI suggests that the USPTO issue a similar request for comments to explore and investigate particular challenges associated with AI.

IV.   SPECIFIC COMMENTS ON GUIDING PRINCIPLES.

PIPLI provides the following comments in direct response to each of the USPTO's Guiding Principles[7] regarding AI inventorship.

"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."[8]

PIPLI agrees. Using an AI system does not negate the effect of a human's contributions. If one's contributions are significant enough to qualify as an inventor, the mere use of AI does not change the analysis.

"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

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[6] *See supra*, note 1.
[7] Request at 10048.
[8] *Id.*

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."[9]

PIPLI agrees with the first component of this guiding principle: recognizing a goal or developing a plan is not conception. That said, PIPLI is concerned about the implications of the second component. Constructing a prompt will, in many cases, be equivalent to developing a plan or recognizing a problem and will therefore not constitute a qualifying contribution. If this principle is included in the final guidance, the USPTO should provide additional information and/or examples of the prompts and outputs envisioned.

"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."[10]

PIPLI agrees that reducing an invention to practice alone is not a significant contribution that rises to the level of inventorship. PIPLI also agrees that there are instances where an AI system could generate an unspecific output that is the beginning of an inventor's later conception. The AI's contribution in this example is analogous to that of an individual who cannot claim inventorship but nonetheless provides information or tools that are necessary for a person skilled in the art to conceive of an invention.

PIPLI disagrees, however, with the notion that a person who cannot establish conception until *after* an invention has been reduced to practice can claim conception, at least when the AI's output—i.e., the reduction to practice—is a significant to the invention. This would allow people to claim the outputs of AI systems as their inventions merely by observing and understanding them. Understanding the work of another is not an inventive contribution and should not establish inventorship.

"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

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[9] *Id.*
[10] *Id.* at 10048 – 49.

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."[11]

PIPLI is concerned this guidance goes too far in suggesting that developing an essential component—i.e., a building block—of a claimed invention necessarily qualifies as providing a significant contribution to the conception of a claimed invention. To be sure, designing an AI system in view of a specific problem *could* represent a significant contribution to a claimed invention in some situations. But, that possibility does not reflect the stated principle regarding a person who develops building blocks from which an invention is derived. What matters is the *significance* of a person's contribution, not the nature or classification of their activity.

From the perspective of technology developers, this principle has additional concerning implications for legal claims against AI developers outside of patent law. In response to liability claims arising from the outputs of AI systems, developers have largely argued that creating an AI system does not necessarily make them responsible (and thus liable) for its outputs.[12] To the extent this principle suggests that designing or training an AI system allows one to claim legal rights to its output, it might suggest these activities are sufficient to give rise to both legal rights and duties.

PIPLI urges the USPTO to revise or remove this principle as stated in the Request. As written, this principle could open the door to people patenting any and all output of an AI system because they decided which data sets to use in training it.

"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."[13]

PIPLI agrees. Controlling or maintaining dominion over an AI system does not entitle the controller to claim inventorship of the system's output. PIPLI urges the USPTO to ensure that the same principle applies to creators, builders, and trainers of AI systems, for the reasons discussed above.

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[11] *Id.* at 10049.

[12] Peter Henderson, *Who Is Liable When Generative AI Says Something Harmful?*, STANFORD HUMAN-CENTERED ARTIFICIAL INTELLIGENCE (Oct, 11, 2023), https://hai.stanford.edu/news/who-liable-when-generative-ai-says-something-harmful; Jaron Lanier, *There Is No A.I.*, The New Yorker (Apr. 20, 2023), https://www.newyorker.com/science/annals-of-artificial-intelligence/there-is-no-ai.

[13] *Id.*

V. CONCLUSION

PIPLI appreciates the USPTO's consideration of these important issues and the opportunity to comment on the Request. The USPTO's overall stance on AI inventorship represents a positive step, but additional steps should be taken to ensure that patents on AI-assisted inventions fully comply with the Patent Act's requirements, and therefore are robust and reliable. Specifically, PIPLI urges the USPTO to (1) strengthen mechanisms for ensuring compliance with Section 112, (2) encourage and empower examiners to request additional inventorship information; and (3) promulgate a request for comment regarding the application of Section 112 to applications claiming AI-assisted inventions.

Respectfully submitted,

Christopher T. Bavitz
 Managing Director
Cyberlaw Clinic[14]
Harvard Law School
1557 Massachusetts Avenue, 4th Floor
Cambridge, MA 02138
Tel: 617-384-9125
Email: cbavitz@law.harvard.edu

Alexandra H. Moss
 Executive Director
Public Interest Patent Law Institute
79405 Hwy 111 Ste. 9-414
La Quinta, CA 92253
Tel: 818-281-2191
Email: alex@piplius.org

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