May 13, 2024

Via Electronic Submission
The Honorable Katherine K. Vidal
Under Secretary of Commerce for Intellectual Property and Director
of the United States Patent and Trademark Office
600 Dulany Street
Alexandria, VA 22314

Re: Docket No. PTO-P-2023-0043, Inventorship Guidance for AI-Assisted Inventions

Dear Director Vidal,

The Council for Innovation Promotion (C4IP) welcomes the opportunity to submit comments regarding the February 13, 2024, Inventorship Guidance for AI-Assisted Inventions (Docket No. PTO-P-2023-0043). This guidance went into effect immediately, although the Office solicited written feedback on or before May 13, 2024.

C4IP is a bipartisan coalition dedicated to promoting strong and effective intellectual property rights that drive innovation, boost economic competitiveness, and improve lives everywhere. Founded and chaired by former directors of the U.S. Patent and Trademark Office from previous Democratic and Republican administrations, our nonprofit organization aims to be a valued partner to those considering policies impacting America's IP system.

C4IP is concerned that the Office's artificial intelligence (AI) inventorship guidance will ultimately hurt humans, human creativity, and flourishment; the very opposite of what the Office set out to do. The newly-announced guidance means that inventors who use artificial intelligence to innovate and then seek patent protection will be faced with uncertainty throughout the examination process and during any validity challenges afterward, with the possibility that their "human" contribution was not enough. This is because the guidance starts from the premise that use of AI by an inventor or inventors is different than the use

of any other tool. This premise is simply incorrect.[1] To date, the possibility that AI can act as an inventor, absent *any* human involvement, remains a hypothetical, not an issue that warrants a significant overhaul of existing rules, as the Office proposes to do here — indeed, all the examples crafted by the Office describe varying degrees of human involvement.[2]

Yet, under the guidance's reinterpretation of case law on conception and inventorship, no one will be entitled to a patent where no human made a "significant contribution" to the conception of the invention.[3] But this test was developed to answer a different question — namely, to decide who invented something first or whether someone was improperly listed or omitted as an inventor. It is in this context that the significance (or lack thereof) of particular contributions becomes relevant.

The context of a human or humans using AI is fundamentally different. The proper analytic framework for considering use of AI should be the same as what patent law has always used to consider tools or other input used by inventors. The law here is clear, as set forth in the last line of § 103: "Patentability shall not be negated by the manner in which the invention was made."[4] Inventors' use of AI merits no further consideration in the patentability analysis than the use of any other tool, such as a computer, for example, under fact patterns more analogous than those considered by the Office. This is because the Office is properly considering "how" the invention is made, not "who" the inventors are.[5]

For example, in *Life Technologies, Inc. v. Clontech Laboratories, Inc.*, two scientists were attempting to develop an altered version of an enzyme lacking one of its two biological activities. They ultimately found a published computer analysis that predicted where these two activities were located.[6] The scientists focused on the indicated section for the

1 To this end, the Office states "the USPTO recognizes that while an AI system may not be named an inventor or joint inventor in a patent or patent application, *an AI system—like other tools—may perform acts that, if performed by a human, could constitute inventorship* under our laws." 89 Fed. Reg. 10043, 10045 (emphasis added). The Office cites to no authority that AI is currently capable of conception (and consequently invention). Case law abounds with descriptions of conception, in particular, as a fundamentally human activity. *See, e.g.*, Univ. of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V., 734 F.3d 1315, 1323 (Fed. Cir. 2013) ("To perform this mental act, inventors must be natural persons[.]"). An assertion that machines are already—or soon to be—capable of this functionality should receive more support and more explanation. Indeed, later in the Federal Register notice, the Office states, "Because conception is an act performed in the mind, it has to date been understood as only performed by natural persons." 89 Fed. Reg. at 10046.

2 See USPTO, AI-related Resources, https://www.uspto.gov/initiatives/artificial-intelligence/artificial-intelligence-resources (providing links to two examples of application of the Office's AI inventorship guidance all involving human activity); see also Thaler v. Vidal, 43 F.4th 1207, 1209 (Fed. Cir. 2022) (AI system allegedly solely responsible for invention yet a human applied for a patent application).

3 Implicitly this means that only AI made a significant contribution. This stands in contrast to the potentially distant hypothetical noted earlier of an invention made solely by a machine, without the need for human involvement in the form of prompts or anything else, for example.

4 35 U.S.C. § 103.

5 See Thaler, 43 F.4th at 1212 (The last sentenced of § 103 describes "how" an invention is made rather than "who" is an inventor).

6 Life Techs., Inc. v. Clontech Labs., Inc., 224 F.3d 1320, 1322 (Fed. Cir. 2000).

undesirable activity, eliminated it, and sought a patent on the result.[7] They were accused of inequitable conduct for failing to disclose that the computer analysis had motivated them to investigate that location to alter the enzyme.[8] The Federal Circuit found no inequitable conduct, explaining that "the inventors' reliance on the [computer analysis reference] and the motivations that they derived from it have no bearing on the issue of patentability. It does not matter whether the inventors reached their invention after an exhaustive study of the prior art, or developed their [ ] enzymes in complete isolation."[9] In other words, per the last sentence of § 103, "the path that leads an inventor to the invention is expressly made irrelevant to patentability by statute."[10] The use of AI by inventors is not functionally different than the use of computer analysis in this case — the motivation or inspiration to the inventors from a non-human source is irrelevant to patentability.

Analytically separate is the question of whether invention happened at all. To this end, the line of case law identified by the Office as "accidental conception" is instructive, though not relied upon for this purpose by the guidance. This case law concerns whether a human appreciated the results of a process that produced a potentially novel and useful outcome. For example, under a frequently-occurring fact pattern in the case law, scientists created chemical compounds from a set of reactions and the operative question was whether an individual had appreciated the existence and significance of a specific chemical species resulting from that experiment.[11] As the Court of Customs and Patent Appeals described the test, "the critical question is whether there was *contemporaneous recognition and appreciation* of the new form."[12] This framework, asking whether a human appreciated a potentially inventive output from the "black box" of a chemical reaction, is factually analogous to a human considering the output of AI.

Applying this logic to the fact pattern presented in Example 1 of the Office's guidance[13] would potentially allow the two engineers to be inventors. In that example, the engineers prompted an AI system to provide a transaxle structure, resulting in a proposed schematic. The relevant inquiry under the case law described above would be whether the engineers recognized and appreciated this proposed schematic's significance as an invention, understanding that there was possibly something unique or especially useful — facts not provided in the scenario. Absent a dispute on inventorship between the human inventors,

7 *Id.* at 1323.

8 *Id.* at 1323-25 (notably, the computer analysis reference itself was disclosed).

9 Life Techs., Inc. v. Clontech Labs., Inc., 224 F.3d 1320, 1325.

10 *Id.*

11 Silvestri v. Grant, 496 F.2d 593, 600 (C.C.P.A.1974); Heard v. Burton, 51 C.C.P.A. 1502, 1506 (1964); *see also* Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1064 (Fed. Cir. 2005) ("[T]he court must identify when, during an emerging recognition that a particular invention includes something new, the inventor's understanding reaches the level needed for appreciation. In the appreciation analysis, the relevant uncertainty relates to the emerging recognition of something new.").

12 Silvestri, 496 F.2d at 600.

13 USPTO, *Example 1: Transaxle for a Remote Control Car,* https://www.uspto.gov/sites/default/files/documents/ai-inventorship-guidance-mechanical.pdf.

however, there would be no reason to inquire into the appreciation of the inventors at the time they learned of the AI's proposed structure.[14] For examination purposes, the regular patent law inquiries of whether the proposed schematic was new and non-obvious (details also not provided in the example) would be relevant to the transaxle's patentability, as would compliance with § 112. But the "contribution" of AI, as compared to the engineers, would not be.

On these facts, however, the Office's guidance points to the opposite conclusion. The guidance states that "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."[15] This is affirmed by Scenario 1 of Example 1, where the Office concludes that the AI's output is not patentable because the engineers have merely asked AI to solve a problem.[16] The Office's reasoning, however, is precisely an inquiry into the manner of invention that is prohibited by § 103. The Office's guidance, moreover, borrows the concept of the level of ordinary skill in the art, an element of the obviousness analysis, and makes it part of the question of inventorship. This even more explicitly illustrates what the Office's guidance is doing in this passage: conflating inventorship and obviousness.

The Office devotes no consideration to the inevitable policy implications of its approach and conclusion, which will leave new potential inventions, such as in Example 1, without inventors. Lack of patent protection will mean that no one has an incentive to turn a potentially new schematic into a viable new commercial product — building prototypes, factories, developing marketing, or any of the other steps involved in taking patentable innovation to market. No investment of resources, time, or money can rationally be spent to develop an idea when the final product can be readily copied.

The guidance also provides no definition of what constitutes "AI," which leads to this heightened machine-versus-human-contribution analysis. When is an innovator using an advanced computer program and when is he or she using AI? As this inventorship disclosure requirement for AI is effectively a new one on top of the disclosures required by § 112, the lack of definition is troubling. No such disclosures are required for use of computers as a tool in general (unless necessary for compliance with § 112).

14 *See* Invitrogen, 429 F.3d at 1064 (explaining that analysis of appreciation "requires objective corroboration of the inventor's subjective beliefs.").

15 89 Fed. Reg. at 10047.

16 *Example 1*, supra note 10.

The concerns about disclosure are compounded by the Office's clear warning that inequitable conduct may result from a failure to adequately investigate inventorship when AI is used as well as from a failure to disclose such information if it is material to patentability.[17] Moreover, even where innovators and their counsel have attempted to carefully follow the Office's guidance, they are likely to be challenged on their reasoning and conclusions if they ever have to enforce a resulting patent. Whether AI was used and whether the inventors have contributed "enough" as a result is likely to be a new flavor of invalidity challenge in most lawsuits going forward. Regardless of success, it will add more complication and expense to lawsuits, burdening innovators and providing an unwarranted boon to infringers.

In sum, the inquiries that the Office's guidance may now make routine for AI-assisted inventions add a troubling layer of unnecessary complexity to the patentability inquiry. Just as asking if a computer analysis motivated an inventor too much or if too much unknown happened in a chemical reaction to claim the result, asking if too much AI was used is not an appropriate patentability inquiry. Trying to discern the significance of human versus non-human contributions during examination, as this guidance does, will lead to the rejection of claims and patents that are properly patentable under the law and will lead to needless additional validity challenges to issued patents.

Without definitive guidance from either the courts or Congress that this is the path the USPTO must follow, the USPTO is doing a disservice to would-be inventors and innovation more generally by chilling incentives for use of AI by anyone who does not want to bear the uncertainty that it could be used to reject their patent application or invalidate their patent.[18] Or, such entities may be incentivized to turn to trade secret protection where they can, to the detriment of the storehouse of common knowledge. As a result, this guidance is likely to harm human innovators and discourage use of AI as a new and promising tool. This will put American inventors and American innovation leadership at a distinct disadvantage to our economic competitors, such as China, who are not hampering their intellectual property system with these limitations.

* * *

Ensuring a robust and reliable patent system in the face of ongoing technological advancement is a crucial component of the USPTO's mission. Yet, missteps in accommodating such development can have unintended but substantial chilling effects on further progress. C4IP believes this guidance on AI and inventorship, by effectively assuming too much about AI and too little about humans, has the potential to do just that. The solution is fortunately

17 *See* 89 Fed. Reg. at 10050 ("Given the ubiquitous nature of AI, this inventorship inquiry could include questions about whether and how AI is being used in the invention creation process.").

18 For these reasons, it is also concerning that the USPTO made this guidance effective immediately without the benefit of a round of public comment. It has the potential to prejudice current and future patent applicants and would have benefited from a thorough review before be widely relied upon by patent examiners.

simple: treat AI just as patent law has treated other new tools and allow relevant case law to be developed by the courts or for Congress to act. Until then, C4IP respectfully suggests that the USPTO consider rescinding or substantially revising this guidance.

C4IP thanks the USPTO for their work on this important issue and stands ready to provide any further input that may be requested.

Sincerely,

Frank Cullen
Executive Director
Council for Innovation Promotion (C4IP)