July 29, 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-2023-0044, Request for Comments Regarding the Impact of the Proliferation of Artificial Intelligence on Prior Art, the Knowledge of a Person Having Ordinary Skill in the Art, and Determinations of Patentability Made in View of the Foregoing

Dear Director Vidal,

The Council for Innovation Promotion (C4IP) welcomes the opportunity to submit comments in response to the U.S. Patent and Trademark Office's request of April 30, 2024, on how the emergence of artificial intelligence (AI) technology might impact the Office's determination of whether a patent application is patentable, with particular attention to issues relating to prior art and the person of ordinary skill in the art (PHOSITA) (Docket No. PTO-P-2023-0044).

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 whose board also includes two retired judges from the Court of Appeals for the Federal Circuit, our nonprofit organization hopes to be a valued partner to those considering policies impacting America's intellectual property system.

Artificial intelligence (AI) is a promising new technology with the potential to accelerate human innovation and prosperity. But whatever AI might be able to do in the future, right now, we confront it as a powerful new tool. Even one of the leading providers of generative AI has characterized AI's abilities as being several steps away from being capable of

inventiveness,[1] and to put this in context, these statements were viewed as overambitious "hype" by others.[2] Looking at AI from this perspective, it is not a unique challenge to the patent system, which has had to regularly accommodate the emergence of new technological tools in the past.

Accordingly, C4IP is concerned that too much regulation of AI could be counterproductive and result in stifling this emergent technology, as well as the development of other technologies that will benefit from it. We believe that it is largely premature for the Office to have AI-specific guidance at this time.

For that reason, we believe that if the USPTO issues guidance, it should adopt policies that increase innovation in the AI space, including innovation in all areas generated with AI tools. In doing so, the Office should consider, if anything, setting forth explicit procedures for examiners to seek guidance in difficult or novel cases. Identifying and focusing on such cases will allow for the Office to take positions in light of concrete facts and will help to crystallize key disputes for the courts. Any additional examiner guidance should be limited to what is strictly necessary for routine examination rather than addressing the most extreme hypothetical cases.

Focusing on process is also appropriate given that the legal issues posed by the Office's request can only be answered definitively by case law or legislation. By issuing guidance that is too prescriptive prior to such legal developments, the USPTO risks denying patents that it should have granted, potentially directly harming innovation dependent on AI. By imposing unnecessary new "duties" related to AI, the USPTO risks creating routine bases for inequitable conduct allegations for patents relating to AI (or even patents unrelated to AI, which could face challenges that they might have used AI). This will weaken the value of all patents, especially AI-related patents, hurting incentives to invest in these promising areas.

While the ongoing development of the AI field may present many sweeping changes, such as the accelerated proliferation of art and greater synthesizing abilities, these developments are not without precedent in the patenting space. Moreover, such developments have the potential not to crowd out human invention but rather aid in its effectiveness in improving the human condition. Accordingly, AI — like any new technological tool — should be encouraged rather than stifled for fear of what it will bring.

[1] Rachel Metz, *OpenAI Scale Ranks Progress Toward 'Human-Level' Problem Solving*, Bloomberg (July 11, 2024), https://www.bloomberg.com/news/articles/2024-07-11/openai-sets-levels-to-track-progress-toward-superintelligent-ai.

[2] Benj Edwards, *OpenAI Reportedly Nears Breakthrough With "Reasoning" AI, Reveals Progress Framework*, Ars Technica (July 12, 2024), https://arstechnica.com/information-technology/2024/07/openai-reportedly-nears-breakthrough-with-reasoning-ai-reveals-progress-framework/.

In light of these general points, we offer the following more specific responses to the questions provided in the USPTO's RFC:

A. The Impact of AI on Prior Art

1. In what manner, if any, does 35 U.S.C. 102 presume or require that a prior art disclosure be authored and/or published by humans? In what manner, if any, does non-human authorship of a disclosure affect its availability as prior art under 35 U.S.C. 102?

The relevant part of the statute appears silent on this issue. Section 102(a)(1), which provides the requirements for non-patent prior art, does not say anything about authorship, having instead a timing requirement (before the filing date of the application) and a public availability requirement for any printed publication, prior use, or sale. Whatever clarification courts may add to the statutory text in the future, there seems to be no current basis for the Office to assume that there is an implicit exception for AI-generated prior art.

Treating all prior art the same would also ensure that if an invention were already publicly available, it would not be improperly removed from the public domain, aligning with the core functions of the novelty and non-obviousness inquiries. It also may not be knowable whether a given reference was partially or completely AI-generated, and accordingly, trying to formulate a test based on this distinction may be unworkable.

2. What types of AI-generated disclosures, if any, would be pertinent to patentability determinations made by the USPTO? How are such disclosures currently being made available to the public? In what other ways, if any, should such disclosures be made available to the public?

Governing law should apply here: an AI-generated disclosure should be considered for "for all that it teaches" if it qualifies as prior art under § 102.[3] Thus, it could form the basis of an obviousness rejection even if its examples are inoperable,[4] though this would prevent the disclosure from being anticipating.[5]

[3] Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551 (Fed. Cir. 1989).

[4] Geo M. Martin Co. v. Alliance Mach. Sys. Int'l LLC, 618 F.3d 1294, 1302-1303 (Fed. Cir. 2010).

[5] In re Borst, 52 C.C.P.A. 1398, 1403 (1965) ("[T]he criterion should be whether the disclosure is sufficient to enable one skilled in the art to reduce the disclosed invention to practice. In other words, the disclosure must be such as will give possession of the invention to the person of ordinary skill. Even the act of publication or the fiction of constructive reduction to practice will not suffice if the disclosure does not meet this standard.").

C4IP does not have firsthand knowledge about how AI-generated disclosures are being made public but believes that the USPTO should ensure that examiners have access to the same sources of prior art that would be readily available to people working in that field. These efforts are especially important for non-patent literature before there is a larger storehouse of AI-related patents.

3. **If a party submits to the Office a printed publication or other evidence that the party knows was AI-generated, should that party notify the USPTO of this fact, and if so, how? What duty, if any, should the party have to determine whether a disclosure was AI-generated?**

The Office should create no new duty on applicants to make affirmative representations about prior art references beyond simply disclosing them to the Office under the existing duty of candor. Applicants currently do not provide supplemental information about such disclosures unless they are material, and they should not now have to disclose anything new about AI authorship. It is unclear what benefit such a duty would provide since this information, as discussed above, would not affect a reference's status as prior art.

The Office also should not create a new duty to investigate whether a reference was AI-generated. As noted above, it may not even be possible to know if a reference is solely or partially AI-generated, even after a diligent inquiry. Imposing such a duty is likely to lead to a raft of inequitable conduct charges should a patent ever be asserted, even if applicants made a good-faith basis to comply with the requirement.

4. **Should an AI-generated disclosure be treated differently than a non-AI-generated disclosure for prior art purposes? For example:**

   a. **Should the treatment of an AI-generated disclosure as prior art depend on the extent of human contribution to the AI-generated disclosure?**

   b. **How should the fact that an AI-generated disclosure could include incorrect information (e.g., hallucinations) affect its consideration as a prior art disclosure?**

   c. **How does the fact that a disclosure is AI-generated impact other prior art considerations, such as operability, enablement, and public accessibility?**

As discussed above, AI-generated prior art should not automatically be treated differently than any other prior art.

That some or all of the reference was AI-generated might be introduced in prosecution, if at all, if an applicant believes it is relevant in responding to an examiner's objection, consistent with current practice. This approach would allow appropriate consideration of the relevance of AI-generation on a case-by-case basis as it relates to the factual issues underpinning the relevant legal doctrine. For example, an applicant could argue that a reference is not truly public because it is functionally inaccessible due to being unindexed.[6] References relied upon by the examiner that have apparent defects would not necessarily require more than an argument for rebuttal, though evidence may be necessary in other cases.[7]

This approach would also allow applicants to challenge legal doctrines if an applicant believes that the doctrine should be refined to account for whether some or all of the prior art is AI-generated. For example, if an applicant wishes to challenge the legal presumption that a prior art reference should be deemed enabled if it was generated by AI, then the AI-generated status of the prior art reference would be relevant and need to be identified.[8]

5. **At what point, if ever, could the volume of AI-generated prior art be sufficient to create an undue barrier to the patentability of inventions? At what point, if ever, could the volume of AI-generated prior art be sufficient to detract from the public accessibility of prior art (i.e., if a PHOSITA exercising reasonable diligence may not be able to locate relevant disclosures)?**

C4IP does not believe there is any need at this time to be concerned with the volume of AI-generated materials that will be produced. There is already a tremendous volume of prior art that can only be fully surveyed with machine-assisted searches. AI seems likely to increase both the volume of prior art and search capabilities, but regardless, this is a problem that patent law already confronts and is able to address with its current doctrines,

[6] *See* In re Cronyn, 890 F.2d 1158, 1161 (Fed. Cir. 1989) ("[T]he three student theses were not accessible to the public because they had not been either cataloged or indexed in a meaningful way.").

[7] In re Morsa, 713 F.3d 104, 110 (Fed. Cir. 2013) ("When a reference appears to not be enabling on its face, a challenge may be lodged without resort to expert assistance. Here, Morsa identified specific, concrete reasons why he believed the short press release at issue was not enabling, and the Board and the examiner failed to address these arguments.").

[8] *See* In re Antor Media Corp., 689 F.3d 1282, 1289 (Fed. Cir. 2012) ("[A]n examiner is entitled to reject claims as anticipated by a prior art publication or patent without conducting an inquiry into whether or not that prior art reference is enabling.").

including whether the art was available to the public, enabled or operable, or from an analogous field.[9]

B. The Impact of AI on a PHOSITA

6. Does the term "person" in the PHOSITA assessment presume or require that the "person" is a natural person, i.e., a human? How, if at all, does the availability of AI as a tool affect the level of skill of a PHOSITA as AI becomes more prevalent? For example, how does the availability of AI affect the analysis of the PHOSITA factors, such as the rapidity with which innovations are made and the sophistication of the technology?

Answering whether a PHOSITA is a natural person seems unnecessary given that the PHOSITA has already been deemed to have many features no real human could have, such as knowledge of all relevant prior art in the field, combined with limitations that a human faces, such as only having access to a universe of prior art subject to reasonable limits, based on the doctrines of analogous art and public accessibility.[10]

Given that the PHOSITA is an existing legal framework that the Office cannot unilaterally change, yet a framework that is sensitive to evolving facts, the critical question set forth in the RFC is the impact that AI as a tool will have on a PHOSITA. AI, as a tool, is likely to help a PHOSITA in many ways that will effectively increase a PHOSITA's level of skill. For example, AI may make it more practical for a PHOSITA to consider prior art from a wider range of fields. The way in which AI will impact a PHOSITA is likely to vary significantly by technology area, at least at the moment.[11] The ways in which AI will evolve and be used in different fields are currently unclear and rapidly changing.

[9] *See, e.g.*, In re Wiggins, 488 F.2d 538, 543 (C.C.P.A. 1973) (discussing enablement for purposes of whether a reference was anticipating) ("The mere naming of a compound in a reference, without more, cannot constitute a description of the compound, particularly when, as in this case, the evidence of record suggests that a method suitable for its preparation was not developed until a date later than that of the reference. / If we were to hold otherwise, lists of thousands of theoretically possible compounds could be generated and published which, assuming it would be within the level of skill in the art to make them, would bar a patent to the actual discoverer of a named compound no matter how beneficial to mankind it might be. In view of the fact that the purpose sought to be effectuated by the patent law is the encouragement of innovation, such a result would be repugnant to the statute."); cf. In re Baird, 16 F.3d 380, 383 (Fed. Cir. 1994) ("A disclosure of millions of compounds does not render obvious a claim to three compounds, particularly when that disclosure indicates a preference leading away from the claimed compounds."); *see also* LKQ Corp. v. GM Glob. Tech. Operations LLC, 102 F.4th 1280, 1296 (Fed. Cir. 2024) (en banc) ("The analogous art requirement reins in the scope of prior art and serves to guard against hindsight.") (holding that the analogous art test applies to design patents).

[10] *See* In re GPAC Inc., 57 F.3d 1573, 1579 (Fed. Cir. 1995).

[11] Sam Altman, *Who Will Control the Future of AI?* Washington Post (July 25, 2024) ("Systems such as ChatGPT, Copilot and others are functioning as limited assistants – for instance, by writing up patient visits so nurses and doctors can spend more time with the sick, *or serving as more advanced assistants in certain domains*, such as code generation for software engineering.") (emphasis added), https://www.washingtonpost.com/opinions/2024/07/25/sam-altman-ai-democracy-authoritarianism-future/.

The current ways in which examiners infer a PHOSITA's level of skill — from prior art references and from an examiner's own expertise in the technology area — are likely to be the best way to ensure that assumptions about a PHOSITA remain current and account for changing advances in AI.[12] These sources can be reinforced by educational seminars on how AI is currently being used in different technology areas through programs like the USPTO's Patent Examiner Technical Training Program (PETTP), as it appears the Office is already doing.[13]

To the extent guidance is issued, the USPTO could encourage examiners to set forth their understanding of a PHOSITA with particular attention to what is being attributed to AI, especially if such an assumption is critical to the rejection, for example, to establish why a reference from a seemingly unrelated field of technology is appropriate as part of the examiner's rejection. Stating these assumptions explicitly will also allow the applicant to respond with its own assessment of a PHOSITA and for the prosecution history record to be developed on this issue.

7. **How, if at all, should the USPTO determine which AI tools are in common use and whether these tools are presumed to be known and used by a PHOSITA in a particular art?**

The rapidly changing nature of AI and the varied ways it is used in different fields counsel against Office-wide guidance on a PHOSITA's presumed use of AI. Too prescriptive of a formulation will result in examiners assessing a PHOSITA of too high a skill in some patent applications and too low in others. C4IP reincorporates its answer to Question 6, explaining why current doctrines account for AI's use and how corps-wide education on AI could help set a relevant shared understanding for examiners that is appropriately technology-specific.

8. **How, if at all, does the availability to a PHOSITA of AI as a tool impact:**

   a. **Whether something is well-known or common knowledge in the art?**

   b. **How a PHOSITA would understand the meaning of claim terms?**

[12] USPTO, Manual of Patent Examining Procedure (MPEP) (Ninth Edition, Revision 07.2022) [hereinafter "MPEP"] § 2141.03.

[13] USPTO, *Patent Examiner Technical Training Program*, (last visited July 24, 2024), https://www.uspto.gov/patents/initiatives/patent-examiner-technical-training-program; Kathi Vidal, *Latest Updates on Artificial Intelligence and Intellectual Property*, Director's Blog (Sept. 29, 2023) ("In fiscal year 2023, through PETTP, we held over 200 AI training courses, which were viewed over 8,000 times by our examiners. These programs keep patent examiners up to date on the latest technological developments, emerging trends, and recent innovations, including in AI."), https://www.uspto.gov/blog/latest-updates-on-artificial-intelligence.

AI may expand the common base of knowledge available to a PHOSITA, but this impact will be best assessed on a case-by-case basis with examiners using already-established methods to define a PHOSITA. The caution urged by current case law on when an examiner may properly rely on well-known knowledge in the art as part of a rejection, without citation to any source, should apply here.[14]

AI may also have an impact on how a PHOSITA understands a claim term.[15] AI might accordingly be informative to the examiner when construing claims, but caution should be used if and when referring to these sources. For example, a dictionary that is published after the filing date of a patent application would not automatically be a relevant source of information about a term's likely meaning, and neither should a publicly available source of generative AI, whose output may be informed by materials created after the filing date of the application being examined.

9. **In view of the availability to a PHOSITA of AI as a tool, how, if at all, is an obviousness determination affected, including when:**

   a. **Determining whether art is analogous to the claimed invention, given AI's ability to search across art fields? Does the "analogous" art standard still make sense in view of AI's capabilities?**

   b. **Determining whether there is a rationale to modify the prior art, including the example rationales suggested by KSR (MPEP 2143, subsection I) (e.g., "obvious to try") or the scientific principle or legal precedent rationales (MPEP 2144)?**

   c. **Determining whether the modification yields predictable results with a reasonable expectation of success (e.g., how to evaluate the predictability of results in view of the stochasticity (or lack of predictability) of an AI system)?**

   d. **Evaluating objective indicia of obviousness or nonobviousness (e.g., commercial success, long felt but unsolved needs, failure of others, simultaneous invention, unexpected results, copying, etc.)?**

[14] *See* K/S HIMPP v. Hear-Wear Techs., LLC, 751 F.3d 1362, 1366 (Fed. Cir. 2014) ("Although a patent examiner may rely on common knowledge to support a rejection, that is appropriate only in narrow circumstances.").

[15] *See* In re Sneed, 710 F.2d 1544, 1548 (Fed. Cir. 1983) ("[C]laims in an application are to be given their broadest reasonable interpretation consistent with the specification, and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.") (internal citation omitted).

AI, as a tool, is likely to have some degree of impact on each of the legal doctrines set forth in this question, but exactly how it will do so will be fact-specific and should be determined on a case-by-case basis, as it is for all other tools and technologies that are also changing all the time.

As AI may be expected to increase the number of suggestions in the prior art to combine existing elements, to combine prior art from disparate fields, or to suggest sometimes random "results," to the extent that the Office issues guidance, it might be helpful to reiterate the role of the various legal doctrines that provide limits to obviousness, including whether prior art is enabled, whether it is from an analogous field, and how to weigh objective indicia of non-obviousness.

10. **How, if at all, does the recency of the information used to train an AI model or that ingested by an AI model impact the PHOSITA assessment when that assessment may focus on an earlier point in time (e.g., the effective filing date of the claimed invention for an application examined under the First-Inventor-to-File provisions of the America Invents Act)?**

Examiners must constantly be wary of hindsight bias infecting their analysis when they are using any technology to assist in the examination process. This is why it is appropriate for examiners to base their rejections on art that is readily identifiable as prior art — publicly available references having some indication that they were available before the priority date of the patent application, as the Office currently encourages for certain internet sources.[16] Ongoing development of AI models likewise counsels against their use directly by examiners to suggest that claims in a patent application must have been obvious (for example, by entering prompts into a publicly available AI model).

11. **How, if at all, does the availability to a PHOSITA of AI as a tool impact the enablement determination under 35 U.S.C. 112(a)? Specifically, how does it impact the consideration of the *In re Wands* factors (MPEP 2164.01(a)) in ascertaining whether the experimentation required to enable the full scope of the claimed invention is reasonable or undue?**

[16] *See* MPEP § 2128(E), (F) (discussing how the examiner should document time stamps associated with references obtained from the Wayback Machine or social media, and how applicants can rebut the accuracy of whether the reference was publicly available at the relevant time).

The capabilities of a PHOSITA inform the enablement inquiry.[17] Because AI likely will effectively increase the capabilities of a PHOSITA, use of AI should factor into the enablement analysis in appropriate cases. But given the wide disparities in where AI is most developed, in conjunction with its varied usage across different fields of technology, it is not possible or advisable to try to make blanket statements about AI. The relevance of AI to a PHOSITA, and in turn, analysis of enablement, should be done on a case-by-case basis following existing law.

C. The Implications of AI That Could Require Updated Examination Guidance and/or Legislative Change

12. What guidance from the USPTO on the impact of AI on prior art and on the knowledge of a PHOSITA, in connection with patentability determinations made by the Office, would be helpful?

C4IP believes that AI-specific guidance would largely be premature at this time. If guidance is issued, C4IP urges it to explain how existing legal doctrines are capable of handling AI-related changes, to avoid creating new, unneeded duties on patent applicants that may lead to spurious future inequitable conduct allegations, and to provide guidance on how examiners can seek assistance in difficult or novel cases. While not strictly necessary, C4IP also believes that guidance could reiterate that examiners should consider existing legal limitations when assessing anticipation and obviousness, such as whether the art is enabled, from an analogous field, and how to weigh objective indicia of non-obviousness.

13. In addition to the considerations discussed above, in what other ways, if any, does the proliferation of AI impact patentability determinations made by the Office (e.g., under 35 U.S.C. 101, 102, 103, 112, etc.)?

C4IP believes that this question is best answered through the development of law in individual cases before the Office and before the courts, absent any change in the law from Congress.

14. Are there any laws or practices in other countries that effectively address any of the questions above? If so, please identify them and explain how they can be adapted to fit within the framework of U.S. patent law.

[17] In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988) (factors to be considered in assessing enablement "include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) *the relative skill of those in the art*, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.") (emphasis added).

C4IP reiterates that it is primarily concerned with overly prescriptive regulation related to AI. Such efforts have been criticized in other jurisdictions.[18]

15. **Should title 35 of the U.S. Code be amended to account for any of the considerations set forth in this notice, and if so, what specific amendments do you propose?**

C4IP is not advocating for legislative changes at this time.

* * *

C4IP again thanks the USPTO for the opportunity to provide its input in response to this request for comments and would be pleased to provide any further input that may be requested.

Sincerely,

Frank Cullen
Executive Director
Council for Innovation Promotion (C4IP)

[18] *See*, e.g., Javier Espinoza, *Europe's Rushed Attempt to Set the Rules for AI*, Financial Times (July 15, 2024).