# Notable themes in public comments submitted to the USPTO related to AI patent policy

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Beginning January 2019, the United States Patent and Trademark Office (USPTO) engaged the global patent community to evaluate the intersection of patent policy and artificial intelligence (AI) technology.[1] As part of that effort, the USPTO published a "Request for Comments on Patenting Artificial Intelligence Inventions" in August 2019 ("RFC").

The RFC invited stakeholder responses to 12 patent policy questions related to AI technologies.[2] The RFC sought both the patent community's sentiment to help inform policy decisions and the patent community's expertise to aid with issue-spotting.

> ## Do not expect to see changes to patent law geared *specifically* to AI technologies.

The USPTO recently published the "Public Views on Artificial Intelligence and Intellectual Property Policy," in October 2020 (the "report").[3] The report includes the USPTO's digest of stakeholder feedback and offers metrics and insights drawn from the public comments. It also highlights several key points and summarizes the responses, question-by-question.

A major takeaway is that the patent community generally feels that U.S. patent law is structured to handle AI inventions, though the report also highlighted concerns for ongoing or future evaluation. The following sections introduce four notable themes highlighted in the report.

## 1. EXISTING U.S. PATENT LAW IS GENERALLY EQUIPPED FOR AI TECHNOLOGY

The RFC sought public input on whether U.S. patent law needs updating in view of the AI bloom. Although stakeholders would like to see changes to U.S. patent law for various reasons, the patent community is not clamoring for changes *because of* AI.

The majority of commenters expressed a "general sense" that U.S. patent law is "calibrated correctly" to "address the evolution of AI technologies." The commenters consider AI inventions as simply a flavor of computing technology — like robotics, Internet of Things (IoT) devices, mobile apps, or cloud-computing services — and

they generally believe that computing technologies are covered by existing law.

As the USPTO noted, because the majority of commenters believe that "AI is viewed best as a subset of computer-implemented inventions," the commenters concluded that "current USPTO guidance, especially on patent subject matter eligibility and disclosure of computer-implemented inventions is equipped to handle advances in AI."

AI technologies are, however, subject to a number of issues familiar to computing inventions, such as the issues of subject matter eligibility and disclosure requirements.

Ever since the Supreme Court decisions in *Mayo Collaborative Services v. Prometheus Laboratories Inc.*, 566 U.S. 66 (2012), and *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014), large swaths of the patent community have sought policy and legislative action in these corners of the law. But this call for action originates across *many areas* of technology — not just AI. These corners of patent law remain hot items. Like so many areas of technology, AI would benefit from resolution and certainty.

Departing slightly from the majority, a collection of commenters would consider new IP regimes for protecting AI technologies. This group believes that existing IP regimes (patents, copyrights, trademarks) are not properly tuned to capture all aspects of an AI innovation.

In their view, the capacity for an AI to learn, retrain, and evolve, pushes the technology area beyond the analogies to other computer-implemented inventions. Employing such an AI program necessarily implicates any number of data inputs and outputs that are ripe for IP protection.

An AI program typically involves disparate input datasets (e.g., training data) and output datasets (e.g., outputs, models), or they are embodied in varied publicly available iterations, such as a raw (untrained) AI program or a pre-packaged (trained) AI program.

These commenters advocated for new types of IP rights that "focused on the need to protect the data associated with AI," fearing gaps in protection. Nevertheless, even these commenters believe

that U.S. patent law is capable of handling AI inventions for the foreseeable future.

In summary, even though certain aspects of patent law are under scrutiny and new IP regimes are being examined, do not expect to see changes to patent law geared *specifically* to AI technologies.

## 2. DEFINING AI: TWO CATEGORIES OF AI ADDED TO THE CONVERSATION: 'NARROW AI' AND 'ARTIFICIAL GENERAL INTELLIGENCE' (AGI)

The RFC asked commenters for a definition of "AI" and the elements of an AI invention. Notably, most commenters eschewed a strict definition for the term. The evolving status and dynamic nature of AI technology make crafting a definition for patent purposes impractical, unhelpful, or at best moot.

> ## AI could be used to generate and proliferate "a never before seen volume" of prior art.

The technology and any suitable definition are likely to be subjected to unforeseeable and fundamental changes over time. Accordingly, commenters cautioned against a strict or codified definition of the term "AI" in IP policy.

Although commenters avoided discernable definitions, the USPTO derived two categories of AI technology from the responses. The first category is "narrow AI," described as today's "application-specific," "objective-driven" AI technology. Narrow AI systems perform tasks in "well-defined domains."

The second category is "Artificial General Intelligence" (AGI), which the USPTO describes as a *theoretical* condition of technology having "intelligence akin to that possessed by humankind and beyond."

The majority of commenters noted that existing AI technologies fit within the narrow AI category and that narrow AI is covered by existing patent law. Current patent law, however, might not adequately address AGI, whenever it arrives. When AI sophistication reaches the level of AGI, the USPTO is likely to prompt reconsideration of opinions and patent policies.

AI inventorship is a prominent example of how theoretical AGI could disrupt existing patent policy. The USPTO recently rejected a patent application (dubbed the "DABUS application") listing an AI program as the inventor. The USPTO rejected the application because, in its view, patent law only contemplates humans as inventors.

This result is unsurprising given that AGI simply does not exist yet, so an AI cannot *conceive* of an invention "akin" to a

human. Commenters generally agreed that the arrival of AGI could require reconsideration of various patent policies, such as AI inventorship.[4]

Distinguishing narrow AI from AGI benefits the USPTO and the patent community by partitioning the murky and vast subject of AI into two discrete categories that can be analyzed independently. In fact, the USPTO has already analyzed the two discrete categories.

These two new categories of AI technology help shape the ongoing discourse because parties can now discuss AI patent policy in terms of "narrow AI" for the current reality, while keeping "AGI" at arm's length from the ongoing discourse.

## 3. AI'S EFFECT ON THE DEFINITION OF A 'PERSON OF ORDINARY SKILL IN THE ART'

A person having ordinary skill in the art (POSITA) is a fictional character having the ordinary knowledge and skill for a person in a given technical field. It serves as evaluation criterion in several areas of patent law.

For example, a patent application must describe an invention with enough detail that a POSITA would believe the inventor possessed the invention (the "written description" requirement) and that teaches the POSITA to make or use the invention without undue experimentation (the "enablement" requirement).[5]

As another example, a patent application is unpatentable if the invention would have been obvious to a POSITA in view of the prior art at the time the application was filed.[6]

Some commenters raised concerns over AI's effect on the definition of a POSITA. The POSITA is characterized partly by the "level of ordinary skill in the art," such as the typical level of formal education the person would ordinarily possess.

The concern is that the ubiquitous presence of AI in different fields (e.g., life sciences, robotic systems, agriculture, manufacturing processes) could increase or standardize the POSITA's level of skill, even in fields where AI is employed as a tool or is otherwise tangential.

The commenters were addressing the varying rate and depth of AI's dispersion and adoption across many disparate fields. The result, commenters worry, is prematurely raising the bar of the POSITA's skill such that "conventional AI" is no longer applicable to every field, thus every field would be presumed to have comparable AI experts and expertise.

The majority of commenters were unconcerned for the moment. The legal tests for defining and applying the POSITA standard (in any field) will adapt organically to increased complexity of inventions in the field over time. This is usually accomplished by raising the fictional person's level of skill to accommodate for the increased body of literature and increased sophistication.

As the report noted, the amount of detail "needed in the specification to enable the invention is inversely related to the amount of knowledge in the state of the art, as well as the predictability in the art," as measured against a POSITA. According to the majority, determining the appropriate level of skill in the art of a POSITA does not require further refinement due to AI.

AI's potential impact on the POSITA standard was a notable recurring theme of the report, largely because the POSITA standard relates to several areas of patent law.

But that is not the whole story. Looking at the responses a bit deeper, the majority wanted to protect AI patents from an over-developed or intrusive definition of the POSITA and supported the current balanced, fact-sensitive approach.

While the minority shared the same concerns, the minority's view would reconsider the existing legal tests. The contrasting approaches or concerns are now the subject of ongoing evaluation.

For now, there is broad recognition that the current POSITA standard and its legal tests are workable for AI inventions.

## 4. AI'S EFFECT ON PRIOR ART

Existing guidance and policies directed to computer-implemented inventions should be applied similarly to AI inventions, following the general sense that AI inventions should be treated as a subset of computing inventions. Still, a minority of commenters noted that AI inventions could spark unique prior art issues.

One potential issue raised by a minority of commenters is the difficulty of obtaining source code for AI programs. The sparse amount of available source code may be a challenge for establishing a prior art rejection or providing invalidity.

So even if a particular AI product already exists in the market, an examiner or patent challenger may find it difficult to prove that the prior art AI satisfies the legal requirements for anticipation or obviousness.

Another potential issue is that AI could be used to generate and proliferate "a never before seen volume" of prior art. An AI could be configured to stitch together various related concepts to automatically generate and publish prior art.

This would disrupt the evolution of what is *actually* known or obvious in the art, reducing the patentability of what would have been patentable inventions based on artificially created prior art documents and/or generously sized databases of AI-determined related concepts.

The potential effect of AI on the universe of prior art remains an ongoing debate, mostly rooted in speculative problems. AI's rapid evolution makes it difficult to predict its future uses and the problems it might introduce to patent law.

What *is* known, however, is that AI is considered a subset of computing inventions, which, thus far, have not introduced significant, irresolvable problems of prior art.

### Notes

[1] Artificial Intelligence: Intellectual Property Policy Considerations (USPTO Conf. hosted Jan. 31, 2019).

[2] Requests for Comments on Patenting Artificial Intelligence Inventions, 84 Fed. Reg. 44889 (Aug. 27, 2019).

[3] USPTO, Public Views on AI and Intellectual Prop. Policy (Oct. 2020).

[4] *Thaler v. Iancu*, No. 20-cv-903, *complaint filed* (E.D. Va. Aug. 6, 2020).

[5] 35 U.S.C.A. § 112(a) (2011).

[6] 35 U.S.C.A. § 103 (2011).

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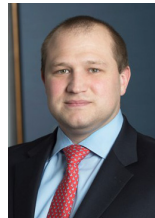


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