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USPTO artificial intelligence patent initiatives

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Overview

- Artificial intelligence/emerging technology (AI/ET) working group & outreach efforts
- Inventorship guidance & examples
- Use of AI tools before the USPTO
- Next steps
- Q&A

AI/ET policy working group

Patent policy

Ensure the USPTO's treatment of AI-related and AI-enabled inventions is consistent and best incentivizes innovation

Broader IP & technology policy

Ensure the IP ecosystem as a whole maximizes and broadly distributes AI's benefits; Leverage AI effectively and responsibly to serve tomorrow's innovators and entrepreneurs

Workforce development

Provide robust AI technical training offerings and access to expertise across the USPTO workforce

AI/ET partnership

Convene diverse stakeholders together through engagements at the intersection of AI, emerging technology, and IP

AI/ET Partnership

- **Artificial intelligence and emerging technology (AI/ET) Partnership**
 - Formation of AI/ET Partnership announced in June 2022 (87 Fed. Reg. 34669)
 - Ongoing cooperative effort between the USPTO and the AI/ET community
- **AI/ET Partnership series**
 - June 2022 – AI/ET Partnership series Kickoff - USPTO AI/ET activities and patent policy
 - September 2022 –AI & biotech
 - February 2023 – AI-driven innovation
 - September 27, 2023 – AI tools and data
 - March 27, 2024 – public symposium on AI and IP



Executive Order

- Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (EO 14110)
 - *The USPTO Director shall "within 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"*



Thaler v. Vidal

- Federal Circuit upheld the USPTO's decisions to deny two petitions seeking to name an AI system as an inventor.
- Decision hinged on the interpretation of the definition of "inventor" in 35 U.S.C. 100(f) "the *individual* or, if a joint invention, the *individuals* collectively who invented or discovered the subject matter of the invention."
- Court concluded that an inventor must be a natural person.
- Court further explained that it was **not** confronted with "the question of whether inventions made by human beings with the assistance of AI are eligible for patent protection."

Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022)



AI inventorship engagement

- Federal Register notice
 - [Request for comments on AI and inventorship](#) from February 14-May 15, 2023
 - AI inventorship stakeholder events
 - East coast listening session – April 25, 2023 at USPTO headquarters, National Inventors Hall of Fame and Museum, Alexandria, VA
 - 35 in-person, 449 virtual attendees with 20 speakers providing remarks
 - West coast listening session – May 8, 2023 at Stanford University, Stanford, CA
 - 50 in-person, 325 virtual attendees with 12 speakers providing remarks
 - Collaboration with academia through scholarly research and publication opportunities
 - Special edition of the Journal of the Patent and Trademark Office Society (JPTOS) regarding inventorship and AI-enabled innovation

Inventorship guidance for AI-assisted inventions

- USPTO issued inventorship guidance for AI-assisted inventions and Request for comments on February 13, 2024
- AI-assisted inventions are not categorically unpatentable for improper inventorship
- Patent applications and patents for AI-assisted inventions must name the natural person(s) who significantly contributed to the invention as the inventor or joint inventors (i.e., meeting the *Pannu* factors)

Significant contribution

- Each inventor must contribute in some significant manner to the invention. That is, each inventor must satisfy the **three *Pannu* factors**:
 - contribute in some significant manner to the conception or reduction to practice of the invention,
 - make 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
 - do more than merely explain to the real inventors well-known concepts and/or the current state of the art.

Failure to meet any one of these factors precludes that person from being named an inventor.

- Things to remember
 - Focus of *Pannu* factors analysis is on the natural person(s) contributions
 - Joint inventors may apply for a patent jointly even though each did not make the same type or amount of contribution or each did not make a contribution to the subject matter of every claim of the patent.



Guiding principles (Gp)

- Gp1 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.
- Gp2 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 contribution could be shown in how the person constructs the prompt in view of a specific problem to elicit a particular solution from the AI system.
- Gp3 Reducing an invention to practice alone is not a significant contribution that rises to the level of inventorship.
- 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.

Guiding principles (cont.)

- Gp4 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 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.
- Gp5 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.
- A person simply owning or overseeing an AI system that is used in the creation of an invention, without providing a significant contribution to the conception of the invention, does not make that person an inventor.

Patent practice

- Guidance applies to utility, design, and plant patent applications and patents
- Naming the inventor
 - 35 U.S.C. 115 requires the patent application to name the inventor or each joint inventor
 - Only natural persons can be listed as an inventor or joint inventor
 - Inventors named on the application data sheet (ADS) or oath/declaration are presumed to be the actual inventors
- Inventor's oath/declaration
 - Named inventors must execute an oath or declaration unless a substitute statement is submitted on their behalf
 - No oath, declaration, or substitute statement should be filed on behalf of an AI system, even if the AI system made contributions to one or more claims in a patent application

Please send any questions to
aipartnership@uspto.gov.

Patent practice (cont.)

- Correction of inventorship
 - When contributions by a named inventor to the claimed subject matter do not rise to the level of inventorship, inventorship must be corrected
 - Inventorship error in patent applications: 37 CFR § 1.48(a) or by filing of a continuing application under 37 CFR § 1.53 and subsequently abandoning the parent application
 - Inventorship error in issued patents: 37 CFR § 1.324 or by reissue
- When inventorship of a claim cannot be corrected (i.e., no natural person significantly contributed to the claimed invention), the claims must be canceled or amended
- Applicants have continued duty to ensure proper listing of inventorship during prosecution (e.g., due to amendments to claims)

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Patent practice (cont.)

- **Benefit/priority claims to prior-filed applications**
 - For a U.S. application claiming priority to a foreign application or entering the national stage under 37 U.S.C. 371 that names both a natural person(s) and a non-natural person as a joint inventor, application data sheet (ADS) accompanying the U.S. application must list as the inventor:
 - Only the natural person(s) who significantly contributed to the invention; and
 - One of those natural persons must be in common with the foreign application.
- **Applicant/ownership/assignments**
 - Assignments from AI systems should not be recorded with the USPTO.
 - An AI system cannot be a named inventor; it has no rights to assign.

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Inventorship examples

- The USPTO also issued two examples to provide assistance on the application of this guidance
 - Transaxle for remote control car
 - Developing a therapeutic compound for treating cancer
- Examples are available at www.uspto.gov/initiatives/artificial-intelligence/artificial-intelligence-resources

Practitioner use of AI

- On April 11, 2024, the USPTO issued guidance on Use of AI-Based Tools in Practice Before the USPTO.
- Key takeaways
 - The use of AI-tools by stakeholders are *not* prohibited.
 - The guidance does not introduce any new rules or duties.
 - The USPTO's existing rules and policies are adequate to address potential misconduct.

AI document drafting

- Any document, including those drafted with the assistance of AI, must be reviewed to ensure the paper is in accordance with the certifications made.
- For example,
 - Ensure all statements are true or believed to be true
 - A reasonable inquiry should be made to confirm the accuracy of facts
 - Confirm all arguments and legal contentions are warranted by law

Duty of disclosure

- If the use of an AI system in the development of the invention or drafting of the patent application is material, this information must be submitted to the USPTO.
- The duty of disclosure cannot be transferred to another person or an AI system.

Filing documents

- Papers submitted to the USPTO must be signed by a person (i.e., the person must personally enter the signature).
- USPTO.gov accounts may only be held by persons.

Confidentiality

- Practitioners must be cautious because use of third party AI systems may inadvertently result in disclosure of confidential information.
- Use of these tools could also implicate national security, export control, and foreign filing license issues.

Next steps

- Continued stakeholder engagement
- Upcoming EO deliverables
 - Copyright
 - Subject matter eligibility
- For further information:
 - www.uspto.gov/artificial-intelligence

