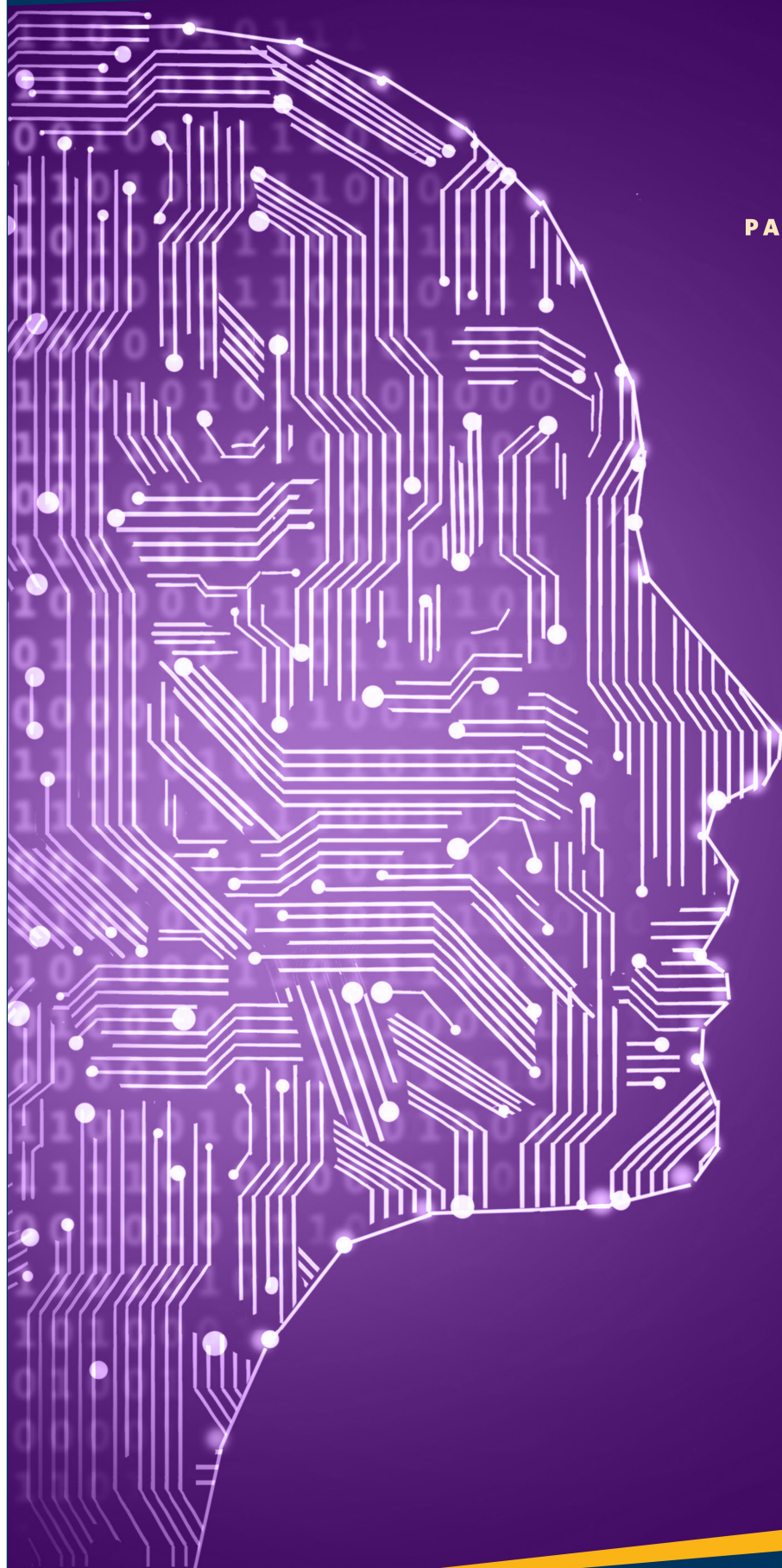


UNITED STATES
PATENT AND TRADEMARK OFFICE

Artificial Intelligence Strategy

JANUARY 2025



Foreword

Artificial intelligence (AI) is a transformative technology that holds tremendous potential for our country and the world. It is capable of dramatically affecting our day-to-day lives, including with new breakthroughs in healthcare, with a new generation of innovative and efficient consumer and industrial products, and with promising solutions for battling climate change.

Although AI is not new, the current pace of AI innovation has created new opportunities and needs for our nation. Since taking office, President Biden and the entire Biden-Harris Administration have moved with urgency to seize the tremendous promise of and manage the potential risks posed by AI. Under this Administration, in a whole-of-government approach, AI milestones have included: (1) issuance of Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence; (2) issuance of Office of Management and Budget (OMB) guidance policy on the same; (3) receipt of voluntary commitments from top tech companies to develop safe, secure, and trustworthy AI; (4) issuance of the National Institute of Standards and Technology (NIST) AI Risk Management Framework; (5) development of a blueprint for an AI Bill of Rights; and (6) continued advancement of key policies and Federal initiatives through the National AI Initiative Office aimed at advancing U.S. leadership in the technology.

The U.S. Patent and Trademark Office's (USPTO) AI efforts align closely with these initiatives. We have been actively engaged in the development and implementation of new policies and programs aimed at increasing the innovative capacity of our country, addressing the important issues that intersect with the fields of AI and intellectual property (IP) rights. We have deployed advanced AI systems throughout the agency to improve the examination of patent applications and have issued guidance to help in the examination of AI-related inventions. We have encouraged the responsible use of AI in innovation among those seeking patent or trademark protection by recognizing that AI can be an important tool both for invention and for patent applications, but one that cannot be left unchecked. The USPTO will continue our work to advance safe, secure, and trustworthy AI; support responsible AI innovation; and integrate this advanced technology into our operations to better serve our stakeholders.

This USPTO Artificial Intelligence Strategy (AI Strategy) is the product of our early hands-on experiences with AI, along with our many interactions with AI specialists and stakeholders from within our agency and throughout the Federal Government, industry, academia, and the general public. This strategy aligns with our strategic plan and with relevant facets of Executive Order 14110 and subsequent OMB guidance.

The AI Strategy is our first major effort at describing the challenges and goals we navigate as we work toward using the full potential of AI, within our own agency operations and by encouraging its adoption throughout society. It will serve as a guide as we at the USPTO engage with our colleagues, our domestic stakeholders, and diplomatically with our international allies.

The USPTO recognizes that there is a global competitive race to capture the benefits of AI. This is occurring not just among those building core AI technologies such as training algorithms in model architectures, but widely across industry sectors. It is imperative for the United States to lead in all aspects of AI: the development of technology, creation of standards and safety regulations, development of IP law and policy, and positive deployment of AI.

The USPTO's goal is to promote innovation and opportunities. The success of AI will be determined by its ability to create new jobs, increase economic growth, and enable communities throughout the nation to thrive. Unleashing this technology's full potential depends on ensuring everyone in the United States has the ability and opportunity to engage with AI innovation. This, too, is addressed in the AI Strategy.

The AI Strategy serves as an initial baseline for our efforts. Over the coming years, its goals will undoubtedly evolve alongside changes within the USPTO and throughout society. The USPTO welcomes its stakeholders to continue providing engaging thoughts and ideas about how to use AI to create opportunities, improve our lives, and solve global problems at a faster pace. This engagement will help us create a robust feedback loop that will foster effective, meaningful policy.



Derrick Brent

Acting Under Secretary of Commerce for Intellectual Property
and Acting Director of the United States Patent and Trademark Office



Introduction

“Promoting responsible innovation, competition, and collaboration will allow the United States to lead in AI and unlock the technology’s potential to solve some of society’s most difficult challenges. This effort requires investments in AI-related education, training, development, research, and capacity, while simultaneously tackling novel intellectual property (IP) questions and other problems to protect inventors and creators.”¹

Artificial intelligence² (AI) is reshaping society and the economy.³ Algorithmic innovations, computational advances, and the proliferation of data have resulted in an unprecedented pace of breakthroughs in AI.⁴ The U.S. Patent and Trademark Office (USPTO), the Department of Commerce, and the Federal Government as a whole are working diligently to stay ahead of these advances and their resulting impacts.

Recent developments showcase the breadth and depth of AI’s capabilities across diverse economic sectors. For instance, modern AI techniques can help detect diseases in their earliest stages and then assist in discovering therapeutics to treat those diseases.⁵ In the digital world, AI can optimize computer chip designs and then aid in

1 Exec. Order No. 14110 at § 2(b), 88 FR 75191, 75192 (Oct. 30, 2023).

2 As used in this document, AI has the meaning established in section 238(g) of the Fiscal Year 2019 National Defense Authorization Act and as further clarified by OMB Memorandum M-24-10. See Pub. L. No. 115-232, § 238(g), 132 Stat. 1636, 1695 (Aug. 13, 2018); Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence (2024) (defining AI as a system or technique falling within one of five prescribed categories).

3 Agrawal, A., Gans, J., and Goldfarb, A., eds., 2019, The economics of artificial intelligence: an agenda, University of Chicago Press, www.nber.org/books-and-chapters/economics-artificial-intelligence-agenda.

4 Perrault, R. and Clark, J., 2024, Artificial Intelligence Index Report 2024, <https://aiindex.stanford.edu/report/>.

5 Sadybekov, A.V. and Katritch, V., 2023, Computational approaches streamlining drug discovery, Nature 616(7958), pp.673-685, www.nature.com/articles/s41586-023-05905-z.

the generation of source code for the software those chips will execute.⁶ AI is poised to further accelerate scientific advancement and economic development in America and across the world. In short, AI presents a potential inflection point in how people live, work, communicate, and create.

Yet AI's promise comes with risks, both to users of AI systems and the broader segments of society that AI systems may impact.⁷ Uncontrolled development and deployment of AI systems can pose dangers to safety and rights—including IP rights. Even when proper safeguards are in place, AI systems can still undermine public trust if they are opaque and unaccountable to human oversight. Such risks must be appropriately managed, both within individual organizations and across society, for AI's potential to be fully realized.

AI and the USPTO

The USPTO is committed to advancing a positive future for AI—one that maximizes AI's benefits broadly across society, manages the risks through technical mitigations and human governance, and empowers all individuals and organizations to participate in AI innovation. This commitment is consistent with our constitutional mandate to “promote the Progress of Science and useful Arts”; our mission to “drive U.S. innovation, inclusive capitalism, and global competitiveness”; and the Biden-Harris Administration's priority, as set forth in Executive Order 14110, of “[p]romoting responsible innovation, competition, and collaboration” to advance American leadership in AI.⁸ Because the USPTO sits at the intersection of IP law, policy, and technology, we engage with the AI ecosystem in numerous ways.

As America's Innovation Agency, the USPTO plays a critical role in advancing emerging technologies such as AI. IP protection in the United States incentivizes and supports innovation in AI. Annual filings of AI-related patent applications have increased more than two-fold since 2002 and are up 33% since 2018 alone.⁹ These applications are filed broadly across technologies, appearing in 60% of all technology subclasses used by the USPTO in 2023. At the same time, recent advances in AI, including in generative AI, pose newfound questions for IP law, policy, and examination procedure.¹⁰ The USPTO must steward America's IP system toward fostering the AI breakthroughs of tomorrow, while facilitating technical solutions to AI's risks. To that end, the USPTO must maintain an effective and predictable IP ecosystem that upholds IP protections, promotes robust competition, and enables U.S. leadership in AI and related markets.

6 Mirhoseini, A., Goldie, A., Yazgan, M., Jiang, J.W., Songhori, E., Wang, S., Lee, Y.J., Johnson, E., Pathak, O., Nazi, A., and Pak, J., 2021, A graph placement methodology for fast chip design, *Nature*, 594(7862), pp.207-212, www.nature.com/articles/s41586-021-03544-w.

7 Exec. Order No. 14110 at § 2(b), 88 FR 75191, 75192 (Oct. 30, 2023).

8 U.S. Const., art. I, § 8, cl. 8; United States Patent and Trademark Office 2022-2026 Strategic Plan, at p.3, www.uspto.gov/sites/default/files/documents/USPTO_2022-2026_Strategic_Plan.pdf and Exec. Order No. 14110 at § 2(b), 88 FR 75191, 75192 (May 19, 2023).

9 Statistics generated from the USPTO's Artificial Intelligence Patent Dataset 2023 update. The dataset is available at www.uspto.gov/ip-policy/economic-research/research-datasets/artificial-intelligence-patent-dataset.

10 Generative AI refers to AI that can programmatically generate novel content, including (but not limited to) text, images, video, audio, biological sequences, and geometric structures.

In doing so, we must work to ensure that people and communities across America participate in—and benefit from—AI innovation.¹¹

The USPTO must also innovate in service of America’s inventors and entrepreneurs to efficiently deliver robust and reliable IP rights. America’s IP system has come a long way since the first U.S. patent was granted in 1790. Today, USPTO patent examiners and trademark examining attorneys contend with over a million new applications annually, and the information required to examine those applications spans diverse datasets consisting of hundreds of millions of documents. Our administrative tribunals and other organizational components face their own unique challenges in analyzing and retrieving information. Due to the complexity and scale of our operations, the USPTO must continue to leverage technology—including AI—as a part of our toolset to increase operational efficiencies and empower our expert workforce.

Finally, USPTO data and research programs can help reveal the dynamics of AI innovation—including the impact of AI to date, directions for future innovation, and ways in which the USPTO and the public might maximize AI’s positive impact. Our agency sits atop one of the world’s largest innovation datasets: America’s patent archives. This information—along with other valuable USPTO data, including trademark registrations and examination records—is made available through our best-in-class Open Data program, forming a foundation for rigorous AI-related empirical analyses both within and beyond our agency. The USPTO will continue investing in our data and research programs so that the resulting insights can help drive innovation broadly across AI and related fields.

¹¹ National Strategy for Inclusive Innovation, USPTO (2024), www.uspto.gov/initiatives/equity/national-strategy-inclusive-innovation.

Overview of the USPTO AI Strategy

USPTO AI Vision

Unleashing America's potential through the adoption of AI to drive and scale U.S. innovation, inclusive capitalism, and global competitiveness.

USPTO AI Mission

Foster the research, development, and commercialization of AI in the domestic and global economy.

Leverage AI effectively and responsibly to empower our staff, optimize our operations, and deliver value to our stakeholders.

Empower current and future innovation and investment in the same through data and research.

USPTO AI Focus Areas

1. Advance the development of IP policies that promote inclusive AI innovation and creativity.
2. Build best-in-class AI capabilities by investing in computational infrastructure, data resources, and business-driven product development.
3. Promote the responsible use of AI within the USPTO and across the broader innovation ecosystem.
4. Develop AI expertise within the USPTO's workforce.
5. Collaborate with other U.S. government agencies, international partners, and the public on shared AI priorities.

The USPTO's 2022-2026 Strategic Plan (USPTO Strategic Plan) sets forth the agency's overall vision as "Unleashing America's Potential" and directs the agency to "drive U.S. innovation, inclusive capitalism, and global competitiveness."¹² This USPTO AI Strategy defines the agency's AI priorities across policy, technology, research, and other domains in service of the USPTO Strategic Plan.

Our agency's AI vision is to unleash America's potential through the adoption of AI to drive and scale U.S. innovation, inclusive capitalism, and global competitiveness. To realize this vision, we will pursue a mission centered on fostering AI innovation, leveraging AI effectively and responsibly, and empowering the AI ecosystem with data and research.

The USPTO will advance our AI vision and mission through five AI Focus Areas, each of which identifies a set of concrete actions for the agency to undertake. These Focus Areas complement one another, reflecting the collaborative and interconnected nature of our AI initiatives.

¹² United States Patent and Trademark Office 2022-2026 Strategic Plan, at p.7 (May 19, 2023), www.uspto.gov/sites/default/files/documents/USPTO_2022-2026_Strategic_Plan.pdf.

Focus Area 1: Advance the development of IP policies that promote inclusive AI innovation and creativity.

As the Federal agency responsible for granting patents, registering trademarks, and advising the President through the Secretary of Commerce on IP matters,¹³ the USPTO regularly formulates IP policies, practices, and recommendations to enhance the IP system's effectiveness in driving U.S. innovation, inclusive capitalism, and global competitiveness. A fundamental premise underlying the USPTO's mission—and expressly recognized in the Constitution—is that IP rights incentivize innovation.¹⁴ To support American AI leadership, the USPTO seeks to advance IP policies that harness these incentives to accelerate AI innovation and creativity while minimizing the risk that the IP will be used to lock up innovation to benefit foreign adversaries or bad actors.

Executive Order 14110 calls on our nation to harness AI to provide “justice, security, and opportunity for all.”¹⁵ Today's AI ecosystem involves many stakeholder communities, including AI researchers and developers, infrastructure providers, content creators, brand owners, and end users. Our AI-related policy efforts will aim to uphold respect for IP rights across these communities and further the IP system's ability to support broad-based innovation, creativity, and investment throughout the rapidly-evolving AI ecosystem.

The USPTO has already begun to address IP's role in AI innovation and creativity—including by issuing guidance and recommendations on AI-related IP issues, as directed in section 5.2 of Executive Order 14110—and will continue doing so by developing additional IP policies, practices, and recommendations pertaining to AI, as appropriate. Our work will be informed by diverse stakeholder feedback, data-driven approaches, and advancements in AI technology.

Action 1.1: Ensure that the USPTO anticipates and effectively responds to emerging AI-related IP policy issues.

With the proliferation of AI across the economy, horizon-scanning is crucial to ensure that IP laws, policies, and practices keep pace with the evolution of AI technology. The USPTO will monitor emerging AI-related IP issues and consider how IP policies and practices can continue to foster both innovations in AI technology and the use of AI to advance other technologies. As appropriate, the USPTO will advocate for the development of balanced and sound judicial precedents and legislation that promote both AI innovation and respect for IP rights, while not unnecessarily constraining future AI innovation. For example, the USPTO would advocate for judicial positions, consistent

¹³ 35 U.S.C. § 2(b)(8).

¹⁴ Article I, section 8, clause 8 of the U.S. Constitution expressly gives Congress the authority to grant exclusive, temporary rights to individuals for their creations and discoveries “to promote the Progress of Science and useful Arts.”

¹⁵ Exec. Order No. 14110 at § 1, 88 FR 75191 (Oct. 30, 2023).

with existing legal precedent, that would encourage innovation with respect to issues including AI-generated prior art and AI-assisted inventions. We will provide appropriate resources to USPTO personnel and the public to promote awareness of new IP policy guidance and consistency in USPTO proceedings.

We will address a broad range of AI-related issues, including in the following areas:

- **Patents:** As AI becomes increasingly prevalent in inventions and patenting, the USPTO will continue to evaluate the resulting implications for the patent system. For instance, the USPTO has recognized that improvements in generative AI may enable AI systems to play a greater role in the inventive process, potentially even contributing in ways that resemble human inventors. In addition to inventorship, AI may also bear upon other patent-related issues, such as subject matter eligibility, obviousness, enablement, and written description.¹⁶ Thus, the rapid advancement of AI technologies and the increase of AI in inventions and patenting could affect not only policy, such as patentability, but also the volume and character of submitted applications. The USPTO will study AI-related patent issues as new developments expand AI's capabilities, act as appropriate to ensure that agency policies and practices are responsive to these developments, and provide guidance and resources to effectively implement these policies and practices.
- **Trademarks:** The USPTO will monitor AI-related trademark developments and consider appropriate actions to ensure that its trademark policies and practices keep pace with the use of AI by brand owners. We will also study current and potential uses of AI for safeguarding trademark rights, exploring whether AI capabilities can be leveraged to help brand owners enforce trademark rights, mitigate counterfeiting, and demonstrate the provenance or authenticity of goods and services. Finally, the USPTO will analyze AI's implications for trademark and associated unfair competition law and policy, assessing whether current laws sufficiently address the unauthorized AI-generated content that replicates existing proprietary content or mimics individuals' names, images, voices, likenesses, and other indicia of identity (Name, Image, and Likeness, or NIL).
- **Copyright:** The development and use of AI systems implicates a variety of copyright law and policy considerations, including with respect to data ingested into and outputs generated by these systems. The USPTO proactively engages on these critical issues and will continue to do so, including by continuing to monitor relevant litigation in Federal courts—weighing in as appropriate—and by continuing to provide technical assistance to Congress as it develops legislation to address these issues. The USPTO will also continue to carefully follow international developments on these topics and coordinate across government to engage

In February 2024, the USPTO issued guidance on inventorship for AI-assisted inventions pursuant to Executive Order 14110. Given the greater role AI is poised to play in the innovation process, the guidance explains the circumstances in which inventors may seek patent protection for inventions made with the assistance of AI systems, along with the USPTO's approach to analyzing inventorship issues.¹⁷ The USPTO also issued a guidance update on patent subject matter eligibility.¹⁸ The USPTO is currently evaluating public feedback received on both documents and will continue to actively engage with stakeholders and evolve policies as appropriate.

¹⁶ 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, 89 FR 34217 (Apr. 30, 2024).

¹⁷ Inventorship Guidance for AI-Assisted Inventions, 89 FR 10043 (Feb. 13, 2024).

¹⁸ 2024 Guidance Update on Patent Subject Matter Eligibility, Including on Artificial Intelligence, 89 FR 58128 (Jul. 17, 2024).

with other countries, with a goal of potential international alignment on these issues. Further, the USPTO recently conducted numerous listening sessions on AI and copyright to solicit views from a diverse spectrum of copyright stakeholders and will continue to conduct stakeholder outreach to inform this ongoing work. Pursuant to the directives from section 5.2(c)(iii) of Executive Order 14110,¹⁹ the USPTO will also continue to consult with the U.S. Copyright Office and stakeholders as the USPTO develops policy recommendations for potential executive actions concerning copyright law's intersection with AI technology.

- **Other IP protections:** The USPTO will also study AI's implications for other IP protections, including trade secrets law and policy, such as the role AI may play in individuals' and businesses' ability to protect their trade secrets. The USPTO will recommend potential policies and executive actions as needed.

Action 1.2: Study the interplay between AI innovation, economic activity, and IP policy.

To advance prudent AI-related IP policies, the USPTO must develop a sound understanding of how AI influences innovation and economic activity, including how IP policies shape AI's development and use across industries. It is also critical to identify the challenges these new technologies pose for current IP policies and practices. To develop sound policy responses, we are pursuing the following lines of effort:

- **Research:** The USPTO will conduct, as appropriate, economic and legal studies on the impacts of IP policy on AI-related innovation. For example, we will continue to monitor and quantify the diffusion of AI technologies through patents,²⁰ and will work to further understand the community of AI innovators and entrepreneurs.²¹ Further, consistent with Action 1.1 (see above), we will work to enhance our understanding of how IP influences stakeholder behavior and incentives, inside and outside of the AI ecosystem. The USPTO will also empower the public to conduct AI-relevant economic and policy research, such as by developing data resources like the AI Patent Dataset, to identify and taxonomize AI-related innovation.²²
- **Outreach:** To develop a complete view of the AI innovation landscape, we are engaging directly with AI researchers, practitioners, and other stakeholders, including through our AI and Emerging Technology (AI/ET) Partnership,²³ listen-

19 Exec. Order No. 14110 at § 2(b), 88 FR 75191, 75192 (Oct. 30, 2023).

20 *Inventing AI: Tracing the diffusion of artificial intelligence with U.S. patents*, www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf.

21 Giczy, A.V., Pairolero, N.A., and Toole, A.A., *Discovering value: women's participation in university and commercial AI invention*, *Nature Biotechnology* 42, 26-29 (2024).

22 Giczy, A.V., Pairolero, N.A., and Toole, A.A., *Identifying artificial intelligence (AI) invention: a novel AI patent dataset*, *Journal of Technology Transfer* 47, 476-505 (2022), <https://doi.org/10.1007/s10961-021-09900-2>. The USPTO's Artificial Intelligence Patent Dataset, to include a 2023 update, is available at <https://www.uspto.gov/ip-policy/economic-research/research-datasets/artificial-intelligence-patent-dataset>.

23 *AI and Emerging Technology Engagement and Events*, www.uspto.gov/initiatives/artificial-intelligence/ai-and-emerging-technology-partnership-engagement-and-events.

ing sessions, and stakeholder roundtables. Consistent with Focus Area 5 below, the USPTO will continue to engage with these stakeholders to better understand the landscape of AI, from technological advancements to policy implications and recommendations.

Action 1.3: Encourage inclusion in the AI innovation ecosystem.

As the use of AI expands across technologies, AI is becoming a larger component of domestic innovation. Pursuant to the USPTO Strategic Plan's call to advance inclusive U.S. innovation and Executive Order 14110's call for AI to advance "opportunity for all," we will act to promote inclusion within the AI innovation ecosystem. Such steps are imperative to our national goals, such as prosperity and security. In May 2024, the USPTO released the National Strategy for Inclusive Innovation (National Strategy), which recognized the opportunity to grow the U.S. economy by expanding the innovation ecosystem, making it accessible to all. The National Strategy recognized that it is critical to: (1) engage in outreach to preK-12 students and teachers; (2) support and mentor post-secondary students regarding innovation; (3) promote innovation broadly within high-tech companies, research labs, universities, and government agencies; and (4) expand technology and entrepreneurship resources, including those that pertain to IP protection. The USPTO is working to advance the goals of the National Strategy and ensure that AI provides opportunity for all, both through its own programs and through collaborations with others. Areas of attention include:

- **PreK-12 students and teachers:** The USPTO is extensively involved in innovation-focused education for preK-12 students and support for their teachers, including through Camp Invention (the USPTO's partnership with the National Inventors Hall of Fame); the National Summer Teacher Institute on Innovation, STEM, and Intellectual Property; and the Master Teacher of Invention and Intellectual Property Education Program. These programs will be supplemented with AI components for students and teachers so that we can match the next generation of innovators with the transformative technology that will shape their careers and lifetimes.
- **Post-secondary educational institutions:** The USPTO engages in extensive outreach to colleges and universities across the United States, including Historically Black Colleges and Universities and Minority Serving Institutions. The USPTO will advocate for and support AI and IP education and resources for these schools in particular, and for post-secondary educational institutions generally, so their future entrepreneurs, inventors, and innovators do not lag behind advancements in the innovation ecosystem.
- **Broad access to AI tools:** The USPTO will advocate for Federal policies to find ways to address and remove barriers to entry into the AI and innovation ecosystems, ensuring that under-resourced innovators, including small and medium-sized enterprises (SMEs), have a place in an AI high-tech economy. The USPTO will engage with other Federal agencies to collaborate on these issues, coordinate resources, and help move the Federal Government as a whole to promote inclu-

sive AI innovation. Consistent with this priority, the USPTO will also prioritize inclusive AI within our own AI tools. AI holds the potential to expand access to the IP ecosystem and to democratize innovation, provided it is responsibly developed and deployed. The USPTO will set a positive example for AI innovators by making AI investments that benefit broad communities of users and stakeholders. Pursuant to Executive Order 14091,²⁴ we will prioritize AI technology initiatives that advance our national interest by expanding access to the innovation ecosystem.

- **Program development:** The USPTO will continue to promote the value of STEM careers (including in AI), entrepreneurship, and IP protection across our country, including in under-represented and under-resourced communities. The USPTO will leverage existing programs and resources such as the AI/ET Partnership,²⁵ the Council for Inclusive Innovation,²⁶ the USPTO Regional Outreach Offices and Community Outreach Offices,²⁷ and our Patent and Trademark Resource Centers²⁸ in over 100 libraries across the country to engage with stakeholders and develop programs for the public concerning AI. The USPTO will work to ensure that all have ready access to these programs and other AI resources. Finally, the USPTO will continue to collaborate with other agencies to support inclusive innovation-related programs across government, such as the National Science Foundation's Regional Innovation Engines Program²⁹ and the Department of Commerce's Women in STEM Ambassador Program.³⁰

Action 1.4: Contribute to broader IP policymaking in collaboration with Congress, interagency and international partners, and the public.

The USPTO sees collaboration on a broad scale as indispensable to ensuring sustainable IP and innovation policy, especially in rapidly advancing areas such as AI. AI-related IP issues affect a broad array of stakeholders and have implications for many societal and governmental priorities. As set forth in Focus Area 5, we are engaging with those who share the goal of advancing responsible AI innovation, including our colleagues across the Federal Government and within the international community.

AI's impacts on IP may prompt changes to existing laws. Accordingly, we will work across the Federal Government to shape IP and these laws, with the goal of promoting responsible AI innovation. Consistent with Action 1.1 (see above), we will identify and

24 Exec. Order No. 14091 at § 4, 88 FR 10825, 10829-10830 (Feb. 16, 2023).

25 AI and Emerging Technology Partnership engagement and events, www.uspto.gov/initiatives/artificial-intelligence/ai-and-emerging-technology-partnership-engagement-and-events.

26 Council for Inclusive Innovation (CI2), www.uspto.gov/initiatives/equity/ci2.

27 USPTO locations, www.uspto.gov/about-us/uspto-office-locations.

28 USPTO Patent and Trademark Resource Centers, www.uspto.gov/learning-and-resources/patent-trademark-resource-centers.

29 U.S. National Science Foundation, Regional Innovation Engines, <https://new.nsf.gov/funding/initiatives/regional-innovation-engines>.

30 U.S. Department of Commerce, Women in STEM: Representation Matters, www.commerce.gov/news/blog/2024/03/women-stem-representation-matters.

pursue opportunities to engage with the courts on the development of AI-relevant IP jurisprudence. We will also work with Congress on addressing policy issues at the intersection of AI and innovation, including through testimony and technical assistance on legislation implicating AI and IP. In addition, we will work with domestic and international partners to strive for robust, reliable IP protections.

Issues where collaboration will help include:

- **Ensuring an open marketplace:** Vigorous competition, including in AI, is critical to preserving American leadership in innovation.³¹ To unleash the full potential of American ingenuity through AI, we must build an accessible ecosystem with low barriers to entry. The USPTO will explore the role of IP in ensuring a vibrant and competitive AI marketplace. In particular, the USPTO will consider how IP can foster AI innovation by SMEs. We will collaborate with the Department of Justice, the Federal Trade Commission, and other agencies, as appropriate, to understand the relationship between AI marketplace competition and IP protections.
- **Developing IP and AI standards:** AI is an active discussion topic in many prominent international standards bodies. For example, the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO) together have developed a series of standards for AI that cover the AI ecosystem, including terminology, governance, risk management, cybersecurity, and ethical considerations.³² The International Telecommunication Union (ITU) standards and AI for Good initiative,³³ led by the ITU and 40 partner United Nations (UN) agencies, are helping stakeholders align AI innovation with the UN Sustainable Development Goals.³⁴ As such discussions advance and propagate across other standards bodies, the USPTO will work with NIST, our sister agency, and other domestic representatives across industry, academia, and the Federal Government to ensure that IP equities are appropriately addressed throughout the standards development process.
- **Ensuring robust, enforceable IP rights:** We must ensure that as AI advances, protections against IP infringement—such as patent infringement, piracy, counterfeiting, and trade secret misappropriation—continue to promote and incentivize invention and other creative acts. Stakeholders, trading partners, and allies must know that their U.S. IP rights will be protected by law and policy and remain enforceable.³⁵ The USPTO will advance public awareness of IP rights and responsibilities within the AI ecosystem, including by promoting best practices and educating creators, users, and consumers of AI technologies on the same.

³¹ Exec. Order No. 14036 at § 1, 86 FR 36987, 36987 (July 9, 2021); Exec. Order No. 14110 at § 2(b), 88 FR 75191, 75192 (Oct. 30, 2023).

³² IEC, ISO, and ITU respond to FLI open letter: International Standards can help ensure safe and responsible AI development, www.worldstandardscooperation.org/ai-and-standards/.

³³ AI for Good, <https://aiforgood.itu.int/>.

³⁴ United Nations, Department of Economic and Social Affairs: Sustainable Development, <https://sdgs.un.org/goals>.

³⁵ Exec. Order No. 14110 at § 4.8(b), 88 FR 75191, 75204 (Oct. 30, 2023).

Focus Area 2: Build best-in-class AI capabilities by investing in computational infrastructure, data resources, and business-driven product development.

AI innovation holds tremendous potential for public benefit, including the chance to improve the effectiveness, efficiency, accessibility, and responsiveness within the Federal Government. The USPTO has long invested in information technology (IT) to support the effective and efficient delivery of reliable IP rights. As AI's ability to aid our efforts becomes apparent, the USPTO will evaluate and implement safe and reliable AI technology as an integral component of our overall IT portfolio.

The USPTO embraces an expansive view of AI's potential to improve agency operations, enhance employee effectiveness, and advance equitable access to the IP system. We are proud to be Federal leaders in bringing AI innovation to impact for our personnel and the public. Today, our AI-driven systems analyze virtually all nonprovisional utility patent applications, helping to identify patent classifications for each application. Likewise, our state-of-the-art AI search tools aid our patent examiners in retrieving potential prior art. We offer a growing suite of AI-powered tools, such as virtual assistants, to support innovators and entrepreneurs in protecting their IP—including those who are self-represented or otherwise unfamiliar with the patent and trademark systems. We are also pursuing the integration of AI tools into the trademark examination and design patent examination processes in a strategic and human-first manner.

The USPTO will work to continually improve the effectiveness and reliability of agency AI systems. Concurrently, we will identify and pursue new avenues for AI to empower employees and stakeholders, taking into account their input, evolving USPTO business needs, and technical advances from the AI community.

Action 2.1: Continuously advance the USPTO's usage of computing and data resources to enable AI for increasingly complex use cases.

Effective and trustworthy AI systems must be built upon powerful, secure, and resilient computational infrastructure, along with high-quality datasets. The USPTO will maintain world-class computing and data resources as the foundation of our ability to innovate with AI. These efforts will draw on and feed into the USPTO's data and IT modernization efforts, specifically leveraging Open Data to foster the AI innovation that bears most directly on IP-relevant use cases.

- **Computing infrastructure:** The computational infrastructure underpinning AI systems must be sufficiently powerful to handle the exponentially expanding data processing needs of modern AI. The USPTO's computational infrastructure must also remain highly available to allow the agency to perform core agency functions. As the USPTO continues to invest in our IT systems' scalability and resilience, we

will ensure that such investments accommodate the demands of modern AI. The USPTO will continue developing and procuring AI-ready computing resources that can scale across the spectrum of AI training and operational needs. The USPTO's AI-related infrastructure investments will also prioritize cost-effective, modern cloud technologies to ensure resilience and adaptability to changing computational needs.

- **Sandbox resources:** Accessible testbed environments are critical for agency personnel to experiment with AI and to facilitate early-stage AI innovation. Such environments reduce barriers to launching new AI initiatives and encourage broad-based, bottom-up exploration of how AI can help solve business problems. The USPTO will maintain a suite of on-demand sandbox resources for prototyping and evaluation of AI solutions across the USPTO.
- **Effective stewardship and use of data:** High-quality and accessible data is indispensable for AI enablement. To identify high-potential AI initiatives, technologists must be able to efficiently access and discover relevant datasets. Consistent with the USPTO Data Strategy, the USPTO will steward our data resources as enterprise assets, ensuring that datasets are discoverable, up-to-date, transparent, and applicable for AI use cases.
- **Leadership in Open Data:** Consumers of USPTO data are not limited to agency personnel and vendors—our data serves as an indispensable resource for stakeholders across the country, including AI innovators in academia and industry.³⁶ As academic researchers and private-sector technologists leverage USPTO data in new and creative ways, the agency will be positioned to make technical and operational improvements resulting from these activities. Accordingly, the USPTO will maintain a leading Open Data program via the continued provision of transparent, reliable, machine-readable, and well-documented public datasets.

Action 2.2: Pursue mission-focused AI innovation, from prototyping to deployment.

The USPTO leverages IT capabilities, including AI, in direct support of its mission. As a fee-funded agency, the USPTO aligns its technology investments with the needs of stakeholders, personnel, and the IP system at large. Accordingly, the USPTO will focus its AI innovation efforts on high-priority mission requirements aligned with the USPTO Strategic Plan.

- **Identification of areas of opportunity:** Opportunities to leverage AI will arise in different ways across our business units. Given the highly specialized nature of the IP field and the needs of our stakeholders, we will bring together operational and technological experts to identify opportunities to advance our mission. We will also continue to foster partnerships to find the highest-potential avenues of impact for AI in each area of USPTO operations.

³⁶ E.g., The Pile: An 800GB Dataset of Diverse Text for Language Modeling, <https://arxiv.org/abs/2101.00027>.

As of June 2024, nearly 80% of USPTO patent examiners had used AI-powered features such as More-Like-This-Documents and Similarity Search across over 480,000 cases. These features provide examiners with a supplement to traditional, keyword-based search methods, helping ensure that examiners can efficiently locate prior art documents that may pertain to a given application's patentability.

- **Evaluation and adoption of new AI technologies:** The USPTO's goal is to implement safe and reliable AI solutions. Recognizing that AI is an emerging and evolving technology, the USPTO will continually evaluate new AI capabilities and determine whether such capabilities can be beneficially deployed without posing undue risk. The USPTO will also, as appropriate, leverage public participation in our evaluation of new AI capabilities, including, for example, through crowdsourcing initiatives, calls for research, and public competitions.³⁷
- **Implementation and deployment:** The USPTO will follow best practices in implementing and deploying effective AI-powered solutions. The USPTO will leverage techniques such as agile product development to ensure that solutions are deployed efficiently, with verifiable business value. Moreover, the Office of the Chief Information Officer, the Office of Procurement, the Patents and Trademarks business units, and other key stakeholders will collaboratively develop sound practices for acquiring and implementing new AI capabilities.

Action 2.3: Closely align business areas, technology, and end users to maximize stakeholder value.

The USPTO emphasizes a human-first approach toward deploying AI across the agency. Our objective is not just to deploy smarter technology, but to build a more effective and efficient organization by coupling the strengths of AI with the expertise found among our staff at every level of the agency. This requires training our staff on AI skills and technology, and designing business processes that reflect our previously successful best practices. Deployment of AI systems should be carefully coordinated with the underlying business processes and user workflows they are designed to enhance, as well as internal end users and external stakeholders.

- **Co-developing technology and business processes:** The USPTO recognizes that AI systems should be co-developed with the business processes into which they will be integrated. The USPTO will prioritize organizational planning and change management programs for relevant AI technology initiatives to ensure that users are positioned to make effective use of USPTO AI tools. Crucially, to mitigate the dual risks of apprehension about and overreliance on AI tools, we will work to instill a practical appreciation among end users of each AI system's proper role within their workflows. Such efforts will draw on the workforce training initiatives described in Action 4.3 (see below), as well as robust collaboration between USPTO management and our employee unions.

³⁷ Two recent USPTO AI research competitions have enlisted thousands of AI and data science experts worldwide in solving IP-relevant technical challenges, resulting in new state-of-the-art methods for semantic language similarity and explainable AI in the IP domain. Across these two competitions, 2,460 research teams hailing from dozens of countries collectively submitted 53,752 technical solutions, with the winning methods and source code made available to the public at large. See Cenkcı, Don, et al., U.S. Patent Phrase to Phrase Matching, 2022, <https://kaggle.com/competitions/us-patent-phrase-to-phrase-matching>; Beliveau, Scott, et al., USPTO - Explainable AI for Patent Professionals, 2024, <https://kaggle.com/competitions/uspto-explainable-ai>.

- **Maximizing AI's value through continuous improvement:** AI tools are dynamic systems whose effectiveness can either improve or deteriorate over time. The USPTO will continually invest in refining our AI systems and enhancing value delivery through two main approaches. First, we will solicit regular employee and stakeholder feedback on the usability and effectiveness of our AI systems. Such feedback will directly inform future technology development roadmaps and change management initiatives, helping to prioritize future improvements to maximize return on investment. Second, we will directly integrate feedback loops into our AI systems when appropriate. We will consider technical approaches, such as continuous training and reinforcement learning from feedback, to make our AI systems responsive to evolving usage patterns and user preferences.

Focus Area 3: Promote the responsible use of AI within the USPTO and across the broader innovation ecosystem.

The benefits of AI must be maximized in a responsible manner. The principles of responsible AI—safety, fairness, transparency, privacy, reliability, and accountability—are pillars of the Federal Government’s approach to AI. In particular, Executive Order 13960, Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government, established principles for the trustworthy use of AI by Federal agencies. Executive Order 14110 further directed Federal agencies to advance the responsible use of AI, including through the appropriate and secure use of generative AI systems.³⁸ These and other applicable laws, regulations, and directives will continue to guide how the USPTO adopts AI in its operations.

Beyond the Federal Government, we must also promote the responsible development and use of AI across all of society. The Blueprint for an AI Bill of Rights (Blueprint), developed by the White House Office of Science and Technology Policy, identifies five key principles for protecting individuals and preserving democratic values in the use of AI.³⁹ Furthermore, NIST’s AI Risk Management Framework (AI RMF) sets forth a comprehensive approach to framing risks and increasing the trustworthiness of AI systems.⁴⁰ Major AI stakeholders have signaled their commitment to manage AI’s risks through measures consistent with the Blueprint and the AI RMF,⁴¹ and responsible AI must remain a key component of the AI innovation ecosystem.

The USPTO will strive to maintain public confidence in our own adoption of AI by upholding safety, security, and trust across our AI technology initiatives. We will also study the use of AI within the broader innovation ecosystem to establish a comprehensive understanding of how AI can be used responsibly in promoting innovation and how IP considerations can be incorporated into responsible AI practices.

Action 3.1: Maintain public trust in the USPTO’s adoption of AI through value-aligned product development, risk mitigation, and transparent stakeholder communication.

38 Exec. Order No. 13960, 85 FR 78939 (Dec. 3, 2020); Exec. Order No. 14110 at § 10.1(f), 88 FR 75191, 75220 (Oct. 30, 2023); see also Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence (2024), which provides additional guidance in support of EO 14110.

39 Blueprint for an AI Bill of Rights (Oct. 22, 2022), www.whitehouse.gov/wp-content/uploads/2022/10/Blueprint-for-an-AI-Bill-of-Rights.pdf.

40 Artificial Intelligence Risk Management Framework (AI RMF 1.0) (Jan. 2023), <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>; see also Department of Commerce Announces New Guidance, Tools 270 Days Following President Biden’s Executive Order on AI (July 26, 2024), www.nist.gov/news-events/news/2024/07/department-commerce-announces-new-guidance-tools-270-days-following.

41 Biden-Harris Administration Secures Voluntary Commitments from Leading Artificial Intelligence Companies to Manage the Risks Posed by AI (July 21, 2023), www.whitehouse.gov/briefing-room/statements-releases/2023/07/21/fact-sheet-biden-harris-administration-secures-voluntary-commitments-from-leading-artificial-intelligence-companies-to-manage-the-risks-posed-by-ai/.

The integrity and effectiveness of America's IP system depends on upholding public trust in USPTO operations. AI can greatly enhance our operations, but uncontrolled use of AI can expose our stakeholders to significant risks and undermine public trust. The USPTO will uphold the public's trust in our AI systems by aligning them with responsible AI values, managing their risks, and communicating openly and frequently with stakeholders. To this end, we will adopt the following principles and practices:

- **Upholding equity, rights, and civil liberties:** Executive Order 14091, Further Advancing Racial Equity and Support for Underserved Communities Through The Federal Government, directs Federal agencies to design and implement AI systems in ways that promote equity and civil rights.⁴² This directive was reinforced in Executive Order 14110 and OMB's Memorandum for Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence (OMB M-24-10). In particular, OMB M-24-10 calls for the implementation of safeguards for AI systems that implicate civil rights, equal opportunities, or access to critical resources or services.⁴³ It is crucial that AI mitigates rather than amplifies human biases, preserves privacy, and upholds the public's civil rights and liberties, and the USPTO will implement appropriate safeguards toward these ends. This includes recognizing and educating others on how sex-based discrimination and harassment may be facilitated by AI technologies, such as image-based sexual abuse, and how such misuse of AI may serve as a barrier to equity and civil rights. We will take particular care to ensure that the sourcing, selection, and use of data across the USPTO's AI initiatives is lawful, ethical, and transparent.
- **Upholding robust and secure IT practices:** AI systems are information technologies. Therefore, responsible AI development inherits both the core tenets of responsible software development—including scalability, resilience, and cybersecurity—and a suite of new risks specific to AI. The USPTO will ensure that AI systems are developed in line with the standards and procedures that guide the agency's deployment and maintenance of IT systems. Consistent with OMB M-24-10, the USPTO will also consider the use of existing IT governance mechanisms (e.g., Authorizations to Operate) to monitor and assure compliance with responsible AI practices.⁴⁴ Finally, the USPTO will work to maintain thorough documentation of AI system components and inputs to ensure traceability of our AI systems, remediate emerging risks as they arise, and facilitate internal and external reporting.
- **Communicating benefits and limitations clearly:** To promote trust, both internally and externally, the USPTO must clearly convey the benefits and limitations of our AI systems to our stakeholders. Consistent with Focus Area 5 (see below) and OMB M-24-10's reporting requirements, we will communicate openly and

42 Exec. Order No. 14091 at § 4(b), 88 FR 10825, 10830 (Feb. 16, 2023).

43 Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence, at p.16 (2024).

44 Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence, at p.11 (2024).

frequently about our AI activities, including how responsible AI principles are being incorporated into agency AI activities.⁴⁵ We will also provide our employees and public users with information enabling them to understand each USPTO AI system's benefits and limitations in deciding whether and how to use that system.

Action 3.2: Monitor and address the use of AI in the broader innovation ecosystem to help shape IP and innovation.

The USPTO will closely observe the use of AI in the innovation and IP ecosystems, with the goal of encouraging the beneficial and responsible use of these technologies through policy and guidance. Particular priorities include:

- **Understanding AI's role in legal practice:** To properly govern practice before the USPTO, we will work with the practitioner community to understand AI's current and future role and uses in legal practice. AI will reshape the practice of law—including aspects of how IP practitioners serve clients. We will take appropriate measures to ensure that AI is used in a beneficial manner, consistent with practitioners' responsibilities to provide competent and ethical representation to clients.⁴⁶ We will also study how responsible uses of AI can expand access to IP services, particularly to under-served communities.
- **Encouraging responsible AI use by promoting IP awareness and compliance with IP laws and policy:** Responsible AI requires all parties to act lawfully and with attention toward others' rights. Responsible AI practices that pertain to IP include lawful and ethical data sourcing, appropriate attribution and content provenance mechanisms, and proper licensing of IP-protected inputs, among other practices. Safeguarding and respecting IP rights is an essential principle for responsible AI, as underscored in Executive Order 14110.⁴⁸ Additionally, the AI RMF calls for AI practitioners to adopt policies and procedures that respect third-party rights,⁴⁹ including IP rights. The USPTO will work to promote respect for IP laws and policies as a fundamental tenet of responsible AI practice. Recognizing that IP issues may arise in cybersecurity research, red-teaming, and other activities that advance safe and trustworthy AI, the USPTO will continually review the state of the law as it relates to these activities and identify relevant IP issues.

On April 11, 2024, the USPTO issued guidance on the use of AI by those practicing before the USPTO.⁴⁷ The guidance: (1) reminds individuals involved in agency proceedings of the pertinent rules and policies, (2) helps inform those same individuals of the risks associated with the use of AI, and (3) provides suggestions to mitigate those risks. The USPTO's guidance is the first from a Federal agency to specifically address AI's use in legal practice before the agency.

45 Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-10, Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence, at p.5 (2024).

46 The Applicability of Existing Regulations as to Party and Practitioner Misconduct Related to the Use of Artificial Intelligence (Feb. 6, 2024), www.uspto.gov/sites/default/files/documents/directorguidance-aiuse-legalproceedings.pdf; Guidance on Use of Artificial Intelligence-Based Tools in Practice Before the United States Patent and Trademark Office, 89 FR 25609 (Apr. 11, 2024).

47 Guidance on Use of Artificial Intelligence-Based Tools in Practice Before the United States Patent and Trademark Office, 89 FR 25609 (Apr. 11, 2024).

48 Exec. Order No. 14110 at § 5.3(a), 88 FR 75191, 75208-75209 (Oct. 30, 2023).

49 Artificial Intelligence Risk Management Framework (AI RMF 1.0), at p.24 (Govern 6.1) (Jan. 2023), <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>.

Focus Area 4: Develop AI expertise within the USPTO's workforce.

The USPTO's dedicated workforce is our backbone, and the success of our AI Strategy rests on our employees' readiness to navigate an increasingly AI-forward world. The USPTO is fortunate to have an exceptionally skilled workforce, with approximately 14,000 personnel boasting diverse talents across the sciences, engineering, law, IT, and other disciplines. We will invest in growing our workforce's AI expertise to meet the ever-changing landscape of AI opportunities and challenges.

Providing foundational AI training will assist in carrying out the agency's work, which, in turn, will benefit external stakeholders. Moreover, as more of our examining and business activities continue to involve AI, and as AI technology becomes increasingly critical to delivering high-quality services, we will also require more specialized expertise in analyzing and implementing AI technology. Pursuant to section 2(g) of Executive Order 14110, along with OMB M-24-10 and the AI Training Act of 2022, the USPTO will address this spectrum of skill needs through comprehensive investments in AI literacy and upskilling, partnering with our business units and employee unions in providing relevant offerings across our workforce. We will also recruit personnel with AI experience and expertise.

Action 4.1: Expand training to address AI-related subject matter in USPTO examination.

As AI's role expands in innovation and commerce, the USPTO must equip our examiners to address AI-related subject matter in patent and trademark examination. With the number of AI-related patent applications increasing substantially over the past two decades, there is an ever-growing need to develop and maintain AI expertise among our patent examination personnel.⁵⁰ This need is not confined to those who examine core AI technologies; rather, the diffusion of AI across technical disciplines necessitates that all patent examiners have access to robust AI training offerings.⁵¹ Furthermore, as our trademark examining attorneys encounter applications involving AI-derived matter or AI-related goods and services, they too will benefit from understanding AI technologies and their positioning within the marketplace.

The USPTO will promote breadth and depth of AI fluency across our patent and trademark examiners, including through the following means:

- **Developing foundational curricula available to all examiners:** Although the need for patent and trademark examiners to train in the use of AI technologies will vary,

⁵⁰ See *Inventing AI: Tracing the diffusion of artificial intelligence with U.S. patents*, at p.2, www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf.

⁵¹ We note that external stakeholders have recently sharpened their attention on training in AI as an emerging need at the USPTO. For instance, a draft Senate bill from the 117th Congress, Patent Examination and Quality Improvement Act of 2022, calls for recommendations on improving the training of USPTO examiners in "examination fields affected by emerging and complex technologies, including [AI and machine learning]." S. 4704, § 4(3)(C); Public Views on Artificial Intelligence and Intellectual Property Policy, at p.14 (Oct. 2020), www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf.

Between January and May 2024, USPTO employees attended, in-person or virtually, approximately 19 live presentations on AI-related technologies ranging from AI-powered image and speech processing to the latest advances in large-scale generative AI through Tech Fairs. Each presentation had an average attendance of over 400 employees. Our employees also have access to a library of over 200 (and counting) AI-related courses through Technical Training on Demand.

a baseline level of foundational AI fluency will broadly benefit all examiners and, through them, the public. The USPTO has already invested substantial resources in developing and curating AI curricula tailored to our specific needs. We will continue developing and refining such curricula, leveraging resources including USPTO-hosted lectures, interagency and external training offerings, and other material.

- **Ensuring depth and recency of training offerings:** Certain patent examiners, including those who examine particularly complex applications of AI or cutting-edge advances in foundational AI, may benefit from deeper AI knowledge. Our patent examiners already benefit from the Patent Examiner Technical Training Program and Site Experience Education program, which expose examiners to new developments in areas including AI. The USPTO will explore ways to augment existing offerings to instill deep expertise in relevant AI technologies and keep pace with the innovation frontier—for instance, by proactively sourcing specific trainings on nascent AI methodologies.
- **Attracting and recruiting AI skillsets in examiner hiring:** The USPTO’s examiner hiring priorities continually evolve with the agency’s needs. As more patent and trademark applications containing AI-related matter are filed each year, we will benefit from the continual infusion of AI knowledge into each new examiner class. Given the demand for such talent, the USPTO will consider all available means to attract candidates with AI skillsets, including through methods identified by the AI and Technology Talent Task Force.⁵²

Action 4.2: Empower our workforce with AI expertise to support diverse organizational needs.

From IT and analytics to empirical research and legal services, our workforce’s familiarity with AI is critical to the USPTO’s success. We will empower our teams with the right expertise to navigate new opportunities and impacts presented by AI within their respective workstreams. Each USPTO business unit maintains training programs to meet the specific needs of their personnel. When those needs call for specific AI skillsets, we will support our organizational leaders and personnel in identifying appropriate resources for developing those skillsets. In doing so, we will consider areas such as the following:

- **IT:** To enable the ambitious AI innovation agenda set forth in Focus Area 2 (see above), we will develop a bench of AI product development talent by upskilling our IT professionals and recruiting those with relevant expertise to the USPTO. First, we will build on the AI training offerings developed by our Office of the Chief Information Officer to cultivate the skills needed to create, train, deploy, manage, and govern USPTO AI systems.⁵³ In doing so, we will consider the needs of

52 Exec. Order No. 14110 at § 10.2(b), 88 FR 75191, 75221 (Oct. 30, 2023).

53 For example, OMB M-24-18 describes the importance of tailored AI training for agency acquisition workforces, Off. of Mgmt. & Budget, Exec. Off. of the President, OMB Bull. No. M-24-18, Advancing the Responsible Acquisition of Artificial Intelligence in Government, at p.30 (2024).

not only IT specialists but all personnel across the USPTO who contribute to IT planning and delivery. Second, we will seek out individuals with demonstrated AI experience and expertise for relevant USPTO IT roles. With our technology-focused culture, unique problem domains, and singular mission, the USPTO will strive to be the premier workplace for AI technologists to innovate in service of American innovators.

- **Adjudication and legal services:** AI expertise also supports our adjudication boards and legal service offices, whose personnel will contend with AI-related legal matters and the opportunities and risks presented by AI tools in legal practice. For instance, our Patent Trial and Appeal Board and Trademark Trial and Appeal Board judges, who must decide appeals and inter partes (trial) disputes potentially involving AI concepts and terminology, may benefit from the offerings and competencies described in Action 4.1 (see above). Furthermore, as the legal landscape evolves in response to AI, we will consider appropriate means to help our legal professionals keep abreast of AI-related legal developments relevant to their work.
- **USPTO-wide AI resources:** As with many complex subjects, much of the difficulty in learning to effectively use AI technologies is knowing where and how to start. Some of the USPTO's business units have already developed orientation resources to guide their employees' AI learning journeys. We are building on these efforts through an agency-wide AI resource portal, which will serve as an enterprise-wide landing point for AI training offerings and resources across roles and organizational contexts. We will curate and augment the portal to meet the evolving needs and interests of our employees. To develop additional agency-wide resources, we have also established the USPTO AI and Emerging Technologies Premier Lecture Series. Through this first-of-its-kind program, we are engaging the foremost AI luminaries from industry and academia to share critical AI knowledge with our workforce. The inaugural lecture was held in October 2024, with over 4,100 employees in attendance from the USPTO and other Department of Commerce bureaus.
- **Education on effective and responsible use of AI:** Most USPTO employees already have access to AI-based IT tools, and the extent of employee AI use will grow with the USPTO's AI-related IT investments. The USPTO will continually work to provide user-oriented training on the effective and responsible use of AI tools. Such training will include both general guidance on applicable Department of Commerce and USPTO IT and cybersecurity policies, as well as training tailored to specific AI tools used by our personnel.⁵⁴

⁵⁴ In particular, any generative AI tools developed or acquired by the USPTO will be accompanied by suitable training consistent with section 10.1(f)(ii) of Executive Order 14110. Exec. Order No. 14110 at § 10.1(f)(ii), 88 FR 75191, 75220 (Oct. 30, 2023).

Focus Area 5: Collaborate with other U.S. government agencies, international partners, and the public on shared AI priorities.

IP is relevant to a growing set of stakeholders both within and beyond the AI ecosystem. From the inventors and creators whose livelihoods rely on robust IP protections to the variety of end users of AI systems whose multitude of rights must be protected, the USPTO believes that society at large should play a role in informing and shaping the future of AI and IP.⁵⁵ The USPTO will ensure that our AI activities benefit from a rich spectrum of viewpoints and expertise from the community—including academia, independent inventors, small businesses, industry, IP practitioners, government agencies, trade associations, and international bodies.

Action 5.1: Collaborate through the USPTO AI/ET Partnership and beyond to inform the USPTO's next steps as to AI policy and technology.

The USPTO's AI/ET Partnership⁵⁶ signifies our dedication to a collaborative approach to AI. Formed in 2022, the Partnership is an ongoing cooperative effort between the USPTO and the AI/ET communities. Through numerous engagements involving thousands of participants, the Partnership has brought stakeholders together for a continuing series of discussions on the intersection of IP, AI, and ET.

The USPTO will continue to leverage the Partnership and additional mechanisms to incorporate diverse perspectives into our AI policy and technology initiatives. We will closely coordinate these efforts with our Office of Public Engagement, including our Regional Offices and Community Outreach Offices, to ensure opportunities for robust stakeholder engagement across the country. Along with the equities set forth in Focus Areas 1-4 (see above), specific aims of collaboration include the following:

- **Strategic direction and prioritization:** The USPTO will incorporate public views to shape our overarching strategy and ensure our work addresses the most critical needs and issues in the rapidly evolving AI ecosystem. Stakeholders often have the timeliest information on new AI developments and their downstream IP implications. Their experiences, expertise, and feedback will help align our efforts with the current realities and future trajectory of AI. Through public collaboration, the USPTO will continually inform our strategic direction and prioritization of AI-related workstreams, including by periodically revising the USPTO AI Strategy.

As of May 2024, over 4,000 people have attended our AI/ET Partnership events in Alexandria, Virginia; Dallas, Texas; San Jose, California; Los Angeles, California; and online. Partnership engagements have convened AI researchers, practicing attorneys, economists, legal scholars, and other experts to discuss topics ranging from AI-enabled biotechnology innovation to the role of USPTO data in advancing AI and IP research.

⁵⁵ Executive Order 14110 observes that harnessing AI's benefits and mitigating its risks "demands a society-wide effort that includes government, the private sector, academia, and civil society." Exec. Order No. 14110 at § 1, 88 FR 75191, 75191 (Oct. 30, 2023).

⁵⁶ AI and Emerging Technology Partnership engagement and events, www.uspto.gov/initiatives/artificial-intelligence/ai-and-emerging-technology-partnership-engagement-and-events.

- **Academic inquiry and innovation:** America’s universities and research institutes play foundational roles in the AI ecosystem—at once expanding the research frontier, illuminating AI’s impacts through interdisciplinary lenses, and training tomorrow’s AI workforce. Many of the technical breakthroughs that underpin advances in AI originate from work in university research labs, while legal and policy scholars from those same institutions can help explore the resulting implications from an IP perspective. The USPTO will continue to work with academia, including through our Croak Visiting Scholars Program,⁵⁷ to encourage novel and interdisciplinary research initiatives.
- **Technology transfer and commercialization:** Today, many advances in AI are rapidly translated to concrete products. IP can help further accelerate this research-to-impact pipeline. The USPTO will engage with technology transfer offices to support bringing AI innovation from research laboratories to the marketplace. We will continue to support the Small Business Innovation Research and Small Business Technology Transfer programs, along with the Federal Laboratory Consortium for Technology Transfer, to facilitate technology transfer and streamline the link between basic research and real-world applications in areas such as AI. We will also continue to offer training to help innovators navigate these programs and commercialize their technologies.

Action 5.2: Promote interagency collaboration and identify new opportunities to collaborate with government agencies.

Consistent with the Biden-Harris Administration’s government-wide approach to advancing the safe and responsible development of AI, the USPTO will continue to collaborate across the government. The USPTO will seek to bolster existing collaborations and identify new opportunities to advance governmental AI goals in the United States, including those articulated through Executive Orders, the National AI Initiative,⁵⁸ and the National AI R&D Strategic Plan.⁵⁹

- **Intradepartmental collaboration:** The USPTO’s AI initiatives are among many situated within the Department of Commerce. From advancing rigorous AI standards to protecting U.S. infrastructure, the Department and its bureaus are key contributors to the Federal Government’s AI agenda.⁶⁰ The USPTO will work to amplify the Department’s AI-related efforts, including by providing IP expertise to the many Departmental activities implicating AI and IP equities. We will also draw on the work of our sister bureaus within the Department—for instance,

⁵⁷ Croak Visiting Scholars Program, www.uspto.gov/ip-policy/economic-research/visiting-scholar-program.

⁵⁸ 15 U.S.C. § 9411.

⁵⁹ National Artificial Intelligence Research and Development Strategic Plan 2023 Update, www.whitehouse.gov/wp-content/uploads/2023/05/National-Artificial-Intelligence-Research-and-Development-Strategic-Plan-2023-Update.pdf.

⁶⁰ Exec. Order No. 14110 at § 4.1, 88 FR 75191, 75196 (Oct. 30, 2023).

NIST's AI RMF⁶¹—to inform our agency's own approach to responsible AI as described in Action 3.1 (see above).

- **Agency partnerships:** The USPTO works with numerous agency partners on AI. For instance, the USPTO regularly consults one-on-one with agencies across the Federal Government to provide IP expertise, including on matters pertaining to AI. The USPTO also maintains longstanding relationships with key partners, including the U.S. Copyright Office on copyright matters, the Food and Drug Administration on pharmaceuticals and biologics, the Department of Justice's Antitrust Division and Federal Trade Commission on competition and antitrust enforcement, and the National Science Foundation on science and technology. We will continue and expand on these collaborations to advance shared AI equities.
- **Interagency efforts:** Much of the Federal Government's work to advance, deploy, and govern AI involves multilateral collaboration among agencies. USPTO leadership and staff sit on key AI-related committees and groups,⁶² and the USPTO contributes to key interagency initiatives such as the National AI Research Resource Pilot.⁶³ Continued USPTO participation in such collaborations enables the agency to convey the importance of IP in promoting and incentivizing AI innovation, while ensuring that IP-related expertise is readily available to key decision-makers across the government.

Action 5.3: Collaborate with international partners on AI matters impacting the global IP system.

AI and its IP implications are matters of global significance. Novel AI-related IP issues often arise in parallel across jurisdictions.⁶⁴ International approaches to AI governance may interact with IP rights in varying and nuanced ways. Moreover, IP offices around the world are presented with similar opportunities—and shared challenges—to leverage AI in their operations. When IP offices coordinate, they are more likely to reach consistent outcomes, to the benefit of IP rights holders, businesses, and the public worldwide. Consistent with section 11 of Executive Order 14110, the USPTO will collaborate with our international partners to promote global AI innovation by developing shared understandings of AI-related IP issues, exploring resource sharing opportunities, and fostering the effective and responsible use of AI by IP offices.⁶⁵

61 Artificial Intelligence Risk Management Framework (AI RMF 1.0) (Jan. 2023), <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>.

62 These groups include the National Science and Technology Council (including its Machine Learning and AI Subcommittee), the National IT R&D Program (including its AI R&D Interagency Working Group), and the AI Standards Coordination Working Group.

63 National Artificial Intelligence Research Resource Pilot, <https://new.nsf.gov/focus-areas/artificial-intelligence/nairr#nairr-pilot-partners-and-contributors-890>.

64 This was the case in parallel litigations brought by Dr. Stephen Thaler, who filed patent applications in multiple jurisdictions on inventions that he asserted were created by an AI machine called DABUS without the involvement of a human inventor. See, e.g., *Thaler v. Comptroller-General of Patents, Designs and Trademarks* (2023) UKSC 4 (UK); *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022) (U.S.); J 0008/20 (Designation of inventor/DABUS) of 21.12.2021 (EPO); *Commissioner of Patents v. Thaler - (2022)* FCAFC 62 (Australia).

65 Exec. Order No. 14110 at § 11, 88 FR 75191, 75223-75224 (Oct. 30, 2023).

- **Consultations with IP offices:** The USPTO has engaged in numerous AI-related consultations with partner IP offices, to mutual benefit.⁶⁶ These consultations, often bilateral, have been especially informative in assessing the readiness of various AI technologies for internal use cases, as well as exchanging best practices on the effective management and execution of AI-related technical initiatives. The USPTO has also engaged the G7 and the European Patent Office to work collectively on AI and IP policy.⁶⁷ Such exchanges of technical expertise are especially invaluable due to the specialized nature of patent and trademark IT. As AI grows in importance across IP offices worldwide, we will continue and expand on these AI engagements.
- **International organizations:** The USPTO will continue to collaborate with key international IP bodies, including the IP5⁶⁸ and the World Intellectual Property Organization, on legal, policy, and IT-related AI issues. The USPTO will also work to inform U.S. participation in broader AI collaborations such as the G7's Hiroshima AI Process, ensuring that U.S. interests pertaining to IP (including the rights of content creators, system developers, and end users) are represented on the international stage.

66 New emerging technologies and artificial intelligence (NET/AI), www.fiveipoffices.org/activities/NET_AI.

67 The USPTO convened an International Dialogue on Artificial Intelligence and Intellectual Property in September 2024, inviting the heads of each G7 member state IP office and the European Patent Office.

68 The IP5, consisting of the IP offices from Europe, Japan, Korea, China, and the United States, established an AI task force that developed a roadmap for AI cooperation among the five participating offices. New emerging technologies and artificial intelligence - IP5 NET/AI roadmap, www.fiveipoffices.org/news/20210810. This roadmap focused on the impacts of AI on the patent system, a common understanding of the pertinent issues, technical capabilities of the offices, feedback from the IP5 Industry group, and mechanisms for facilitating an exchange of views on policy developments related to AI. The task force enabled the IP5 to gain insights and understandings on how each of the participating offices are addressing all aspects of AI, while helping each office avoid potential pitfalls through the exchange of information and best practices.

Appendix A: Acronyms and shortened forms

Acronym	Definition
AI	Artificial intelligence
AI/ET	Artificial intelligence and emerging technology
AI RMF	Artificial Intelligence Risk Management Framework
AI Strategy	United States Patent and Trademark Office Artificial Intelligence Strategy
Blueprint	Blueprint for an Artificial Intelligence Bill of Rights
G7	The group of the seven largest advanced economies: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States
IEC	International Electrotechnical Commission
IP	Intellectual property
IP5	A forum of the world's five largest intellectual property offices: Europe, Japan, Korea, China, and the United States
ISO	International Organization for Standardization
IT	Information technology
ITU	International Telecommunication Union
NIST	National Institute of Standards and Technology
National Strategy	National Strategy for Inclusive Innovation
OMB	Office of Management and Budget
R&D	Research and development
SMEs	Small and medium-sized enterprises
STEM	Science, technology, engineering, and math
USPTO	United States Patent and Trademark Office
USPTO Strategic Plan	United States Patent and Trademark Office 2022-2026 Strategic Plan
UN	United Nations

Appendix B: Acknowledgments

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