

---

---

STATEMENT OF  
**ANDREW HIRSHFELD**  
**COMMISSIONER FOR PATENTS**  
**UNITED STATES PATENT AND TRADEMARK OFFICE**

BEFORE THE  
**SUBCOMMITTEE ON INTELLECTUAL PROPERTY**  
**COMMITTEE ON THE JUDICIARY**  
**UNITED STATES SENATE**

**“Promoting the Useful Arts: How can Congress prevent the  
issuance of poor quality patents?”**  
**October 30, 2019**

**I. Introduction**

Chairman Tillis, Ranking Member Coons, and Members of the Subcommittee:

Good afternoon. Thank you for this opportunity to discuss the patent examination process at the United States Patent and Trademark Office (USPTO). It is an honor to be here with you today representing the dedicated public servants at the USPTO.

I am pleased to report that the U.S. patent system continues to be the world’s gold standard and that the USPTO continues to issue high-quality patents that meet the statutory requirements through a rigorous patent examination process. The USPTO’s goal to optimize patent quality and timeliness is a continuing process, and today I will discuss the many initiatives the USPTO has taken, and is undertaking, to ensure the continued timely issuance of high-quality patents, which provide reliability, predictability, and certainty.

The U.S. patent system provides innovators with exclusive rights—for a limited period of time—to their inventions, which permits them to raise capital, build their businesses, and bring new, innovative products and services to the marketplace. Our patent system was designed by our Founders to provide incentives to innovate while also increasing public knowledge about advancements by requiring public disclosure of patented inventions.

Timely issuance of high-quality patents by our examiners is critical to providing the certainty that businesses and entrepreneurs need to invest in, develop, and roll out innovative new products and services. The USPTO’s strategic plan to optimize patent quality and timeliness recognizes this, and the USPTO is diligently working to address increasing application filings in a way that appropriately balances timely examination with continued improvement in patent

quality. Application pendency and examination quality do not separately exist in vacuums. For example, too expeditious of an examination could result in uncertainty of rights in the marketplace due to insufficient patent quality, while too tedious of an examination could impede a business or innovator's ability to make timely and cost-effective decisions. Thus, a careful balance is necessary.

In order to successfully achieve this balance, the USPTO employs more than 8,300 patent examiners. The vast majority have a Bachelor of Science in engineering or science, and many have advanced engineering or science degrees and/or law degrees. These examiners evaluate hundreds of thousands of patent applications annually.

Patent examiners are central to our well-functioning patent system. Patent examiners must understand and appreciate not only cutting-edge technological advantages, but also the legal complexities of the gold standard patenting process in the United States.

In 1994, I began my career at the USPTO as a patent examiner, so I have firsthand experience with the challenges patent examiners face on a daily basis. Patent examiners must navigate through the legal and technological complexities of each patent application, and do so within the constraints of a rigorous production system that is based, in part, on meeting congressionally specified timeframes. Currently, examiners have 22.5 hours, on average, to complete their examination of each patent application. This includes time to review and understand the invention (specification) and scope of legal protection (claims) sought by the applicant; time for the examiner to determine whether the invention is new and non-obvious by performing a patentability search of the ever-increasing body of hundreds of millions of prior art references. And finally, that review timeframe includes time to determine whether the invention is eligible for patent protection (which requires consideration of continuously changing subject matter eligibility case law), as well as time to determine whether the invention is useful, adequately disclosed, and clearly defined. Each application typically includes an initial office action in which the examiner explains his or her decisions, and a second office action after the examiner has received and reviewed a response from the applicant to the initial office action.

## **II. Recent accomplishments, programs and initiatives**

Efficient processing of patent applications, a primary tenet of our 2018-2022 Strategic Plan, advances economic prosperity and supports a business environment that protects, cultivates, and promotes innovation and entrepreneurship. The USPTO has significantly reduced patent application pendency in recent years. In FY2019, the USPTO received more than 665,000 patent application filings, a number that has almost doubled since FY2002. During the same time period, real GDP has increased by about 140%. Despite this near doubling of applications, the USPTO has continuously adapted and most recently met its FY2018-2022 Agency Priority Goal of an average pendency of under 15 months for first office actions—a first action pendency that is at its lowest level since 2002—and under 24 months for total pendency. The USPTO ultimately issued 370,430 new patents in FY2019, which join the nearly 3 million patents currently in force in the United States. The USPTO's customer perception survey results from patent applicants show the highest customer perceptions of quality since inception of the semi-annual survey 12

years ago.

The USPTO is also in the midst of unprecedented levels of improvement—changes that address significant and long-standing stress points in patent prosecution and better position the office for the future. Examples include:

- creating and issuing new subject matter eligibility guidance, which has provided greater predictability, reliability, and quality;
- adjusting examination time, including allowing examiners more time where appropriate, and making examination time more aligned with the particular attributes of each patent application;
- implementing an improved patent examiner performance appraisal plan, which will be better aligned with the goals of the office related to patent examination quality;
- developing an automated patent application docketing system that will improve the assignment of work to patent examiners by utilizing information about the expertise of the examiner to automatically match each application to the examiner best suited to examine the application, thus improving examination quality and efficiency; and
- developing enhanced automation tools for patent examiners.

The following discussion provides a more detailed overview of some of our key patent programs and initiatives.

*Clear patent examination guidance: subject matter eligibility and written description*

Between 2010 and 2014, the Supreme Court issued a series of decisions—*Bilski*, *Mayo*, *Myriad*, and *Alice*—that significantly affected patent eligibility law and continue to generate substantial public debate. In the wake of these decisions—as well as numerous Federal Circuit decisions applying what is now known as the *Mayo-Alice* two-step framework—the USPTO has strived to provide guidance to patent examiners and the public on its understanding of these decisions.

The USPTO issued new guidance in a Federal Register notice published on January 7, 2019, revising the procedure at the USPTO for determining whether a patent claim is directed to a judicial exception—a law of nature, natural phenomenon, or an abstract idea—under the first step of the *Mayo-Alice* framework. The revision is two-fold. First, the new guidance explains that abstract ideas, pursuant to two centuries of case law, generally fall within one of three groups: mathematical concepts, certain methods of organizing human activity, or mental processes. Second, and pursuant to case law, the new guidance explains that a patent application claim or patent claim that recites a judicial exception is not “directed to” the judicial exception if the judicial exception is integrated into a practical application of the judicial exception. The USPTO sought public comment on this new guidance and received over 2,400 comments; some comments were supportive and others expressed concern. The USPTO has reviewed these comments, and just recently provided updated guidance that includes a new set of examples as

well as a discussion of various issues raised by the public comments. We will continue to seek stakeholder feedback and make adjustments as necessary as we continue to monitor the effects of the guidance.

The USPTO also issued additional guidance in the Federal Register notice published on January 7, 2019, for the examination of claims in patent applications that contain functional language, particularly patent applications where functional language is used to claim computer-implemented inventions. The guidance addresses written description and enablement issues under 35 U.S.C. § 112(a), especially those relating to computer-implemented functional claims that recite only a solution or outcome to a problem without reciting how the solution or outcome is accomplished. The guidance further addresses issues related to the examination of computer-implemented functional claims having means-plus-function limitations under 35 U.S.C. § 112(f). The USPTO has reviewed public comments on this new guidance. We have now also implemented training for patent examiners on both the subject matter eligibility analysis guidance and the written description guidance.

In addition, the USPTO issued guidance in a Federal Register notice published on April 20, 2018, regarding whether an additional element or elements represent well-understood, routine, conventional activity under the second step of the *Mayo-Alice* framework. In addition, in June 2018, the USPTO issued guidance on how to evaluate the patent eligibility of “method of treatment claims” in view of the Federal Circuit’s decision in *Vanda*. The USPTO trained patent examiners on the 2018 and the January 2019 guidance and is in the process of ascertaining what further training is appropriate.

We will continue to engage stakeholders and the public about ways to reduce the uncertainty around these critical areas of patent law.

#### *Updates to patent examination time, application routing, and examiner performance appraisal*

This month, the USPTO began implementing new updates that will improve the examination process and better align it with our strategic goal of providing timely, predictable, and reliable intellectual property rights. Taking into account the priorities, challenges, and experiences of both our employees and external stakeholders, the two-phase implementation of these changes will revise: the method used to allot time for examining patent applications; the process for assigning applications to examiners for examination; and the evaluation of an examiner’s performance.

The new time allotment method will base time allotment on an application’s classification “picture,” which represents the full scope of technology covered in an application and accounts for multi-disciplinary inventions. Starting this month, all examiners began receiving additional examination time tailored to specific attributes of an application, including the overall number of claims, the length of the specification, and the number of pages in any filed information disclosure statements. Also starting this month, examiners with the least amount of examination time in our production system also began receiving additional time to align their time allotments with the requirements for current patent examination.

Beginning next fiscal year, we will utilize an updated process for assigning patent applications to patent examiners. This process will automatically match each application to the examiner best suited to examine the application, taking into account the complete technological profile of the applications, the work experience of each patent examiner, and the workload balancing needs of the agency. This update effectively completes the USPTO's transition from the United States Patent Classification system to the new Cooperative Patent Classification system, used by over 45 IP offices around the world. The new system will both improve accuracy and efficiency of our patent application docketing process.

Also beginning next fiscal year, there will be a new performance evaluation that will serve as a roadmap to improved patent quality by providing examiners with an enhanced list of exemplary practices for searching, improving clarity of the written prosecution record, and adhering to principles of compact patent prosecution. This roadmap provides a greater emphasis on the examiner's prior art search by highlighting the importance of searching the inventive concept as disclosed in an application so as to identify the best prior art in the case at the earliest possible time in prosecution.

These changes make fundamental updates to the methods and processes that support continued high-quality patent examination, and will position the USPTO to better serve the public.

#### Additional patent quality measures

Providing high-quality, efficient examination of patent applications is key to the issuance of reliable patent rights. The USPTO's actions—whether to reject a patent application or allow a patent application—have a real-world impact on applicants, the public, and the economy.

Performing a thorough prior art search to help issue claims of proper scope is an important part of issuing quality patents that can stand up to scrutiny, if challenged. In addition, any action issued by the USPTO must include sufficient detail so that applicants and the public can better determine the basis for examiner decisions. With the advent of the digital information age, prior art has exponentially increased in volume and has become increasingly global. For example, each year the China National Intellectual Property Administration issues over a million new patents that are written in Chinese. Each one of these patents is a piece of prior art that U.S. patent examiners could take into consideration when examining U.S. patent applications. Over the past year, the USPTO has focused on improving our examiners' ability to search and locate prior art through the following initiatives:

- Training: The USPTO has increased training opportunities to improve examiners' ability to identify relevant prior art. This includes training on proper search techniques and search strategies, training on search tools to facilitate locating and translating foreign patents, and discipline-specific training on relevant databases to identify non-patent literature.
- Quality assurance measures: Quality assurance reviewers perform searches in a random sample of applications and provide the examiner a feedback report, which includes the reviewer's search strategy along with feedback related to the examiner's search to identify best practices and potential areas of improvement.

- *Providing additional resources to examiners:* The USPTO has also provided additional resources for examiners to assist with prior art searches when needed. This includes making available internal experts to help with search strategies based on technology and classification as well as assistance with available search tools. Additionally, a USPTO task force has been created to determine how IT, such as artificial intelligence (AI), can be leveraged to assist with locating and retrieving relevant prior art for examiners. The USPTO is proactively seeking public input on this effort. Specifically, the USPTO recently circulated a Request For Information on the use of AI in patent searches and received more than 60 responses from interested parties that ranged from large companies to small businesses regarding how the USPTO and the public can work together to leverage AI. We are currently reviewing and evaluating the responses.
- *Exploring new processes:* The USPTO is also testing new processes that can help with enhancing prior art searches, including pilot programs that set forth new search processes and collaborations. This includes, for example, collaborative search pilots between multiple USPTO examiners, as well as between USPTO examiners and examiners from foreign patent offices.

Providing training and guidance to USPTO employees is extremely important for supporting high-quality examination. Examiner training is provided to both newly hired and experienced examiners and can be delivered examining corps-wide or to specific subsets. Recently completed training includes extensive training to employees on the revised subject matter eligibility guidance issued in January 2019, as well as training on restriction practice, interview practice, and 35 U.S.C. §112 and claim interpretation, particularly relating to computer-implemented functions.

In addition, the USPTO continues to hold webinar-style quality chats for examiners to provide continued education on a variety of procedural and legal topics relating to patent examination. Recent topics have included tools to assist with locating foreign prior art and non-patent literature and updates to the Cooperative Patent Classification system.

#### *Collaboration between patent examiners and the PTAB*

The USPTO's Patent Trial and Appeal Board (PTAB) adjudicates *ex parte* appeals of examiners' final rejections and conducts America Invents Act (AIA) trial proceedings on issued patents. Only a fraction of the approximately 3 million patents currently in force have been challenged at the PTAB. In FY2019, just over 665,000 patent applications were filed at the USPTO, and the USPTO issued approximately 370,000 patents. Whereas, during that same fiscal year, there were challenges to approximately 1,000 patents through approximately 1,450 AIA petitions filed with the PTAB. Generally, about one-third of PTAB challenges are denied by the PTAB for lack of sufficient evidence to proceed or for other reasons, another one-third are settled by the parties, and the remaining one-third reach a final written decision by the PTAB. In all, approximately 25% of all patent claims that are challenged through AIA petitions to PTAB result in invalidation.

There are numerous reasons why an issued patent could be found invalid in whole or in part.

These range from differences of opinion in close-call decisions of patentability to a change in the law after the patent was issued such that it rendered the claims unpatentable. Additionally, because third parties do not participate in patent examination, with limited exceptions, the USPTO may learn of relevant prior art for the first time in a post-grant proceeding.

While the AIA trials involve only a small number of the patents currently in force, they produce additional information that the USPTO can consider during examination, such as additional prior art. Through collaborative processes, examiners have access to the prior art from AIA trial proceedings that may be relevant to their examination of related patents.

In adjudicating ex parte appeals of examiners' final rejections, the PTAB reviews examiners' work product and can provide feedback to the examiners. The PTAB and examiners have held multiple sessions in which the administrative patent judges from the PTAB provide examiners with feedback on claim interpretation and providing a proper rationale in a rejection to support an examiner's position.

### Customer experience

The USPTO values feedback from our customers and administers a semi-annual Patent Quality Survey to frequent application filers. Subsequent to issuance of the patent eligibility guidance in January 2019, we saw the largest improvement in customer perceptions of quality since the inception of the survey in 2006, rising 10 percentage points in a 6-month period. Since we began monitoring customer perceptions of quality in 2006, we have seen ratings of "good/excellent" increase by 25 percentage points. The past four years have had an overall net gain of 7% in ratings of "good/excellent," with customers having patent applications in electrical engineering technologies displaying the biggest positive shift in perceptions.

The USPTO is committed to improving the customer experience consistent with the President's Management Agenda. The USPTO has taken steps to understand the perceptions of the IP community through multiple customer user groups in order to deliver an outstanding experience that is consistent, clear, and intuitive. The USPTO is currently gathering customer feedback and using the information to improve processes and tools. By measuring customer feedback and then providing transparency on customer experience performance, we provide our customers and stakeholders a voice at the table and motivate business units within the USPTO to work together to ensure the USPTO remains the global leader in IP.

### Training opportunities for stakeholders

The USPTO is increasing transparency and collaboration between our office personnel and external stakeholders by providing guidance and educational opportunities to external stakeholders. The USPTO's Stakeholder Training on Examination Practice and Procedure (STEPP) program is a three-day course that provides external stakeholders with a better understanding of how and why an examiner makes decisions while examining a patent application. The USPTO also provides virtual instructor led training classes, which consist of short two-hour courses on various patent topics and the patent quality chat series, which includes a discussion on a patent quality topic with a substantial portion of the time reserved to answer

questions from stakeholders and capture their feedback.

### Automation and exploring artificial intelligence capabilities

Over the past year, the USPTO has explored using AI for prior art search expansion and refinement, assistance with patent classification tools, and locating similar images. The most promising of these AI capabilities have been identified and are being prioritized for inclusion into our new search system in order to help with examination. There are also many other AI efforts underway at the USPTO, including engagement with industry to help us identify the most advanced search tools.

With a focus on stabilization and modernization, combined with our efforts to study and utilize emerging technologies, the USPTO hopes to improve examination and data-driven decision-making leading to continued high-quality patents with reliable and predictable patent rights.

### Fee-setting authority

In September 2018, the USPTO exercised its fee setting authority, which Congress reauthorized in the SUCCESS Act, by releasing to the public an initial proposal to adjust patent fees. This proposal was updated based on initial stakeholder feedback, and a Notice of Proposed Rulemaking was published in July 2019 to adjust fees. These proposed fees were based on a biennial review of our fees that the USPTO conducted in FY2017, which demonstrated that patent fee adjustments are needed to provide the USPTO with a sufficient amount of revenue to recover its aggregate costs for patent operations. We are reviewing public comments received in response to our Notice of Proposed Rulemaking, and currently anticipate publishing a final rule in the summer of 2020.

The proposed fees provide the resources and flexibility the USPTO needs to continue to issue and improve high-quality patents in a timely manner. The fees allow the USPTO to hire new examiners to reduce the patent application backlog and shorten patent pendency; improve patent quality through developing a new automated patent docketing system; and improve our IT infrastructure, including improving IT examination systems (*e.g.*, Patents End-to-End) and improving prior art databases for examiners and the public (*e.g.*, USPTO's Request for Information on leveraging artificial intelligence (AI) to improve the patent examination process). These fee proposals will also enable the USPTO to continue to build, retain, and effectively manage the highly educated and talented workforce it needs to properly serve our stakeholder community.

The fees also help fund USPTO's regional offices in Detroit, Dallas, Denver and San Jose. These regional offices help the USPTO recruit and retain a highly qualified workforce of patent examiners and administrative patent judges. These offices have also made our services more easily accessible to our customers who live and work outside of our nation's capital.

The USPTO's telework program bears mentioning here because it helps keep fees low. The telework program enhances recruitment and retention, which reduces attrition and related labor costs. The telework program also fosters greater efficiency in production and management,

enhances the resiliency of the USPTO during continuity events, and provides opportunities for expanded work flexibility. The program has also allowed the USPTO to more than double the number of employees since 2005 without significantly increasing its real estate footprint and associated costs.

### **III. Conclusion**

While the challenges are ever evolving, so too are the USPTO's efforts to ensure the continued issuance of high-quality patents in a timely fashion. By continuously reevaluating our programs and initiatives, and by working collaboratively with stakeholders and Congress, I am confident that we will continue to meet these dynamic challenges with dynamic solutions.

Chairman Tillis, Ranking Member Coons, and Members of the Subcommittee, we appreciate your continued support of the goals, priorities, operations and employees of the USPTO. We look forward to working with you to continue to promote the issuance and protection of strong, reliable intellectual property rights.

###