

ORAL TESTIMONY
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Introduction

Good afternoon Chairman Tillis, Ranking Member Coons, members of the Sub-Committee on Intellectual Property. It is a pleasure to discuss with you our country's patent system, and in particular our laws governing the types of inventions considered patent eligible. I'm testifying today solely on my own behalf. Thank you for focusing on this issue – it is not simple, or easily explained, but it is at the core of America's innovation engine. The inventions deemed eligible today drive tomorrow's jobs, national competitiveness, economic prosperity and even national security.

Our current patent eligibility law truly is a mess. The Supreme Court, Federal Circuit, district courts, and USPTO are all spinning their wheels on decisions that are irreconcilable, incoherent, and against our national interest. A few examples.

First, under current U.S. law governing patent eligibility, it is easier to secure patent protection for critical life sciences and information technology inventions in the People's Republic of China and in Europe, than in the U.S. This conclusion results from analyzing many patent applications filed identically in the U.S., China and Europe. Patent eligibility scholar Robert Sachs and I identified many such applications patented in China and Europe, but rejected in the U.S. under 101 and ultimately abandoned here. So current U.S. law governing patent eligibility puts us behind China and Europe in life sciences and information technology--two critical technical areas for national competitiveness.

Second, our current constricted approach to Section 101 is undermining investment in technologies Congress and the Administration consider critical to national security: artificial intelligence, quantum computing and 5G. While I'm not a national security expert, I would think a policy disincenting innovation and investment in these technologies could pose a national security threat. That is exactly the policy we are currently pursuing by default. Robert Sachs and I examined data showing these technologies are being denied eligibility under current U.S. law.

For instance, 101 is having a significant negative impact on artificial intelligence patent applications. We reviewed Office Actions for USPTO examination groups 2100 and 2800, the two key groups for AI. In 2018, AI

patent applications in 2100 and 2800 had 101 rejections 88% and 51% of the time, respectively. And it's not just that a majority of AI patent applications are rejected under 101. Looking year-over-year since the *Alice* decision, 101 rejections have increased significantly in both these areas. **In 2100** AI 101 rejections increased nearly four times since 2014. **In 2800** those rejections increased nearly nine times from 2017 to 2018 alone.

While quantum computing is in its early days, the available data covering software innovation for quantum computing is troubling. 100% of abandoned patent applications for advanced programming in quantum computing were rejected under Section 101 between December 2014 and March 2019. Yes, every single abandoned case rejected under 101. Given the importance of quantum computing, we can't ignore even early data.

In 5G, where one would not expect 101 issues, we found 101 rejections in 20% of final rejections. This means 20% of 5G filings are unable to overcome an initial 101 rejection. A similar phenomenon occurs with appealed applications — 50% unable to overcome a 101 rejection.

All three national security critical disciplines involve research intensive, hard innovation. Patent troll lawsuits are not the issue here. The issue is disincenting companies that invest in the hard innovation protecting our national security. Congress and the Administration view AI, quantum

computing, and 5G as critical to national security, while the courts say those technologies are ineligible for patent protection. This is a disconnect.

Third, despite concerns over patent quality, our national preoccupation with 101 puts us at a quality disadvantage against our economic competitors who deploy their patent examination resources at the real issues affecting patent quality: novelty, non-obviousness, enablement, written description. USPTO is expending many thousands of hours per year on the irreconcilable mess of 101 -- time that could be much more productively spent on issues that should be the focus of quality patent examination, as they are for our economic competitors.

Given the severity of the 101 problem, I thank the Sub-Committee for devising an effective, simple, creative solution. The draft text you have published will productively redeploy judicial and USPTO resources to the real issues affecting patentability, returning Section 101 to its proper role as a coarse filter for screening claims manifestly lacking any practical utility through human intervention, and leaving the fine grained assessment of patentability to sections 102, 103, and 112.

A bit more is needed to reach a consensus solution for key constituents of the patent system. We can help those historically attacked with vague or overbroad patents to ensure such attacks do not resume. One constructive approach is further strengthening Section 112. The inclusion of

tightened standards beyond 112 (f) can help prevent issuance of patents having claims far broader than their disclosure supports. This while still respecting the legitimate need for flexibility for other constituents.

With refinement, the Sub-Committee's legislative text can return our law governing patent eligibility to the gold standard this country deserves.

Mr. Chairman, thank you again for the opportunity to share my thoughts this afternoon.

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