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Wednesday, December 06, 2023

The Honorable Shira L. Perlmutter
Register of Copyrights and Director
U.S. Copyright Office
101 Independence Ave., S.E.
Washington, D.C. 20559

Re: ***Notice of Inquiry and Request for Comment re Artificial Intelligence and Copyright***
Docket No. COLC-2023-0006, Document No. 2023-18624 (Aug. 30. 2023)

Dear Register Perlmutter,

Qualcomm Incorporated ("Qualcomm") is pleased to submit these reply comments in connection with the U.S. Copyright Office's (the "Office") Notice of Inquiry and Request for Comments on Artificial Intelligence and Copyright (the "RFC").

Qualcomm is a U.S. company with its worldwide corporate headquarters in San Diego, California, and has been the world's leader in wireless research and development ("R&D") and a leading supplier of wireless semiconductor chipsets and associated software for nearly 40 years. The revolutionary technologies, semiconductor designs, and software that Qualcomm creates enable the foundational 5G cellular technologies that power the Internet of Things, connected and automated vehicles, a new era of intelligent and connected devices, and artificial intelligence ("AI"). Qualcomm® chipsets and software are used in billions of consumer devices (e.g., smartphones, tablets, laptops, etc.), as well as small cells, Wi-Fi access points, automobiles, and even space equipment. Qualcomm has invested over $85 billion in R&D to develop these and other foundational and groundbreaking technologies. In order for Qualcomm and others to make substantial investments like this, it is crucial that U.S. intellectual property laws strike an appropriate balance of protections and privileges. Indeed, this balance has been vital in making the United States a leading country in the development of high technology and software.

The RFC asked a host of important questions that spans the copyright and AI landscape, and the Office received more than 9,200 initial comments. On the same day that initial comments were due, President Biden issued the Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence ("Executive Order").[1] Among other things, the Executive Order requires the Under Secretary of Commerce for Intellectual Property and the Director of the U.S.

[1] Exec. Order No. 14110, 88 Fed. Reg. 75191 (Oct. 30, 2023).

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Patent & Trademark Office to consult with the Director of the U.S. Copyright Office, and "issue recommendations to the President on potential executive actions relating to copyright and AI," which "shall address any copyright and related issues discussed in the [Office's forthcoming study on copyright issues raised by AI], including the scope of protection for works produced using AI, and the treatment of copyrighted works in AI training."[2] Given the already expansive record, Qualcomm will focus its reply comments on a few key considerations relevant to the two specific topics identified in the Executive Order. A brief summary is below, followed by responses to individual questions in the RFC.

First, Qualcomm respectfully submits that other countries have adopted statutory, regulatory, and judicial approaches that embrace the copyrightability of works produced using AI, and the use of copyrighted material in AI training with certain exceptions. To the extent that the law in the United States does not offer similar accommodations or remains uncertain, there are and will be incentives for companies that develop AI tools and those that use them in the creation of works to move those efforts and investments outside the United States.

Second, with respect to the scope of copyright protection for works produced using AI, Qualcomm respectfully submits that the longstanding rules used to assess all creative works should apply equally to works produced using AI. When applied to AI-assisted works, the practical reality is that the human authorship requirement is likely satisfied for the vast majority of works, especially commercial software and other works that depend on the constitutional promise of copyright law: to promote progress by "secur[ing] a fair return for an author's creative labor."[3] Only in extreme cases will a user's engagement with an AI tool and its outputs be so "hands off" that the work lacks sufficient human authorship. For these reasons, the Office should not impose burden and risk on every copyright owner that may use AI tools, particularly those copyright owners that most depend on the copyright system to secure their investment and advance society.

Qualcomm is available to further discuss these and other questions that the Office may have as it continues its considerations and consultations with stakeholders.

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[2] *Id.* at 75206–07.

[3] *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (internal quotation marks omitted); *see also* U.S. Constitution, Article I, Section 8, Clause 8; *Golan v. Holder*, 565 U.S. 302, 328 (2012) ("Rights conferred by copyright are designed to assure contributors to the store of knowledge a fair return for their labors." (quoting *Harper & Row Publ'rs, Inc. v. Nation Enters.*, 471 U.S. 539, 546 (1985)); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) ("The monopoly privileges that Congress may authorize are . . . a means by which an important public purpose may be achieved. [They are] intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.").

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Question 4. ***Are there any statutory or regulatory approaches that have been adopted or are under consideration in other countries that relate to copyright and AI that should be considered or avoided in the United States? How important a factor is international consistency in this area across borders?***

As discussed below, other countries have embraced the copyrightability of works produced using AI, and the use of copyrighted material in AI training. To the extent the law in the United States differs or remains uncertain, there will be unavoidable incentives to move the development of AI tools, and the production of works made with the assistance of AI tools, to other countries. These incentives jeopardize the United States' longstanding position as a global leader in the creative economy, particularly in the field of high technology and software development.

First, other countries have laws that would grant copyright protection for works produced using AI to varying degrees. For example, China has recognized copyright in works produced with the assistance of AI, at least where human intervention is required in the production process (e.g., in the arrangements and choices in data input, trigger-condition settings, template and corpus style selection, etc.) and the expression of the work is determined by the personalized arrangements and choices of the users of the AI software.[4] The Nanshan District People's Court held that a company that supervised the creative production of an AI-assisted work was the author where the production reflected the needs and intentions of the company.[5] Recently, the Beijing Internet Court issued a decision recognizing copyright in images generated using Stable Diffusion, holding that the image met the requirements of "originality" and reflected a human's original intellectual investment (e.g., conceiving the image, designing the presentation of characters, setting relevant parameters, prompt engineering, etc.), and should be recognized as works protected by copyright law.[6]

The United Kingdom recognizes copyright protection generally in original works that exhibit a degree of labor, skill, or judgment, and provides a specific statutory accommodation that when "a literary, dramatic, musical or artistic work [is] computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken."[7]

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[4] Zhou Bo, *Artificial Intelligence and Copyright Protection – Judicial Practice in Chinese Courts*, at 2, *available at* https://www.wipo.int/about-ip/en/artificial_intelligence/conversation_ip_ai/pdf/ms_china_1_en.pdf (discussing *Shenzhen Tencent v. Shanghai Yingxun*, People's Court of Nanshan District, Shenzhen, Guangdong Province, (2019) Yue 0305 Min Chu No. 14010 Civil Judgment (Nov. 24, 2019)).

[5] *Id.* at 1–3.

[6] Aaron Wininger, *Beijing Internet Court Recognizes Copyright in AI-Generated Images*, NAT'L L. REV (Nov. 29, 2023), *available at* https://www.natlawreview.com/article/beijing-internet-court-recognizes-copyright-ai-generated-images.

[7] U.K. Copyright, Designs, and Patents Act of 1988 § 9.

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In the European Union, there is a distinction between (a) AI outputs generated without any human intervention, which do not qualify for copyright protection; and (b) "AI-assisted output," which can qualify for copyright protection if it meets four criteria.[8] The first criterion is that the AI-assisted output must embody a production in the literary, scientific, or artistic domain. The second criterion is that the AI-assisted output must be the result of human intellectual effort. The European Commission indicated that AI-assisted outputs will generally satisfy this criterion because "AI-assisted outputs will always go hand in hand with some form of human intervention."[9] The third criterion is that the AI-assisted output must involve creative choices by a human author that are reflected in the final result. The fourth and final criterion is that the AI-assisted output must be expressed in a sufficiently objective format that stays within the ambit of the author's general authorial intent. If these four criteria are met, then authorship in the AI-assisted work is attributed to the person(s) that made the creative choices under the third criterion.

Second, other countries have laws that permit the use of copyrighted works in AI training to varying degrees. For example, the Israel Ministry of Justice issued an opinion concluding that the use of copyrighted materials in the machine learning context is permitted under the Israeli fair use provision.[10] There are also various statutory "text and data mining" and "data analysis" exemptions, such as those in Singapore,[11] Japan,[12] the United Kingdom,[13] and throughout the European Union,[14] among others.

Question 18. ***Under copyright law, are there circumstances when a human using a generative AI system should be considered the ''author'' of material produced by the system? If so, what factors are relevant to that determination? For example, is selecting what material an AI model is trained on and/or providing an iterative series of text commands or prompts sufficient to claim authorship of the resulting output?***

As discussed below, there are circumstances when a human user of a generative AI tool should be considered the "author" of the tool's outputs, particularly when those outputs are created for and incorporated into a larger work. This is especially true for the use of AI tools for software code

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[8] European Commission, *Trends and Developments in Artificial Intelligence: Challenges to the Intellectual Property Rights Framework (Final Report)* (2020), *available at* https://ec.europa.eu/newsroom/dae/redirection/document/71915.

[9] *Id.* at 78.

[10] State of Israel Ministry of Justice, *Opinion: Uses of Copyrighted Materials for Machine Learning* (Dec. 18, 2022), *available at* https://www.gov.il/BlobFolder/legalinfo/machine-learning/he/18-12-2022.pdf.

[11] Singapore Copyright Act of 2021, Art. 243–44.

[12] Japan Copyright Act, Art. 30-4.

[13] U.K. Copyright, Designs, and Patents Act of 1988 § 29A.

[14] E.U. Digital Single Market Copyright Directive, Art. 3–4.

development, where the inputs and outputs require substantial human creativity in any meaningful case. For these reasons, the Office should not adopt or maintain policies that create burden and risk for the works that most rely on the constitutional promise of copyright law to incentivize creation.

First, it is blackletter law that the requisite level of human creativity necessary to sustain copyright "is extremely low," "even a slight amount will suffice," and "[t]he vast majority of works make the grade quite easily, as they possess some creative spark, no matter how crude, humble or obvious it might be."[15] Copyright law recognizes such creativity in myriad ways that are applicable to the use of AI tools. For example, the Supreme Court recognized copyright in a photograph where the photographer was the "inventive or master mind" whose creativity was expressed in composing the scene to be photographed (e.g., positioning the subject, choosing the furniture, clothes, accessories, etc.).[16] Later photography cases also recognized copyright in the human creative choices in rendering the photograph (e.g., the effect produced by the choices of angle, light and shade, lens, exposure, effects, filters, developing techniques, etc.) and even in the timing of the photograph (e.g., "being at the right place at the right time").[17] Additionally, in authorship disputes, courts do not require that an individual human being be directly responsible for each and every creative choice in order for her to be the sole author of the entire work and all of its constituent parts. For example, courts have recognized that an entire work is owned by the sole author who had the creative vision, instructed other contributors, and supervised, reviewed, and had veto power over the contributors' work product and whether it matched the creative vision.[18]

Works created with the assistance of AI tools will require substantial human creativity in practically any material use case, especially software code development. AI-assisted code generation tools are increasingly ubiquitous and aid in code development, but, even with the latest AI coding tools on the market, code generation is never "hands off." It is always a human being that must define the code requirements and components; compose the initial code and prompts that lead to code suggestions by the AI tool; conduct constant and extensive review and testing of code suggestions by the AI tool; accept, reject, or manually revise code suggestions in the development environment; and incorporate the AI-assisted code modules into the larger code base, which can be comprised of millions of lines

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[15] *Feist Publc'ns, Inc. v. Rural Telephone Serv. Co.*, 499 U.S. 340, 345–46 (1991) (internal quotation marks omitted).

[16] *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 60 (1884).

[17] *Mannion v. Coors Brewing Co.*, 377 F. Supp. 2d. 444, 450–55 (S.D.N.Y. 2005).

[18] *Aalmuhammed v. Lee*, 202 F.3d 1227, 1235 (9th Cir. 2000) ("Spike Lee was not bound to accept any [suggestions of other contributors], and the work would not benefit in the slightest unless Spike Lee chose to accept them."); *Lindsay v. Wrecked and Abandoned Vessel R.M.S. Titanic*, 1999 WL 816163, at *4–6 (S.D.N.Y. Oct. 13, 1999) ("The fact that Lindsay did not literally perform the filming, i.e., by diving to the wreck and operating the cameras, will not defeat his claim of having 'authored' the illuminated footage" where he created storyboards, instructed film crew and divers on lighting and footage, and "screened the footage at the end of each day to confirm that he had obtained the images he wanted" (internal quotation marks omitted)).

of code. Because the software developer is defining the work, constantly making decisions as she works, and ultimately deciding what code makes it into a final software build, the creative expression at the heart of copyright remains solely in the control of the human software developer.

Second, according to the Office's current AI registration guidance ("AI Guidance"), AI-generated content is *uncopyrightable* to the extent it lacks human authorship, "applicants have a duty to disclose the inclusion of AI-generated content in a work submitted for registration and to provide a brief explanation of the human author's contributions to the work," and "AI-generated content that is more than *de minimis* should be explicitly excluded from the application."[19] Qualcomm respectfully submits that this AI Guidance is problematic for a number of reasons.

As an initial matter, the AI Guidance conflicts with the Office's prior guidance on disclosure of other uncopyrightable materials that are incorporated into a larger work. The *Compendium of U.S. Copyright Office Practices, Third Edition* ("Compendium III") distinguishes between "unclaimable material" and "uncopyrightable material." According to the Compendium III, "unclaimable material" is eligible for copyright but cannot be included within the scope of a given registration because such material was previously published, was previously registered, has become public domain, or is owned by someone other than the claimant.[20] "If the work submitted for registration contains unclaimable material, the applicant should exclude that material from the claim by providing a brief description in the Material Excluded field," but "*only if* it represents an *appreciable portion* of the *work as a whole*."[21] On the other hand, "the applicant does not need to complete this portion of the application if the work merely contains material that is uncopyrightable."[22] Thus, the AI Guidance regards AI-generated material as uncopyrightable, but then does not treat it like other "uncopyrightable material" and instead treats it like "unclaimable material." At the same time, however, the AI Guidance imposes an even greater burden by requiring disclosure of "AI-generated content that is more than *de minimis*" when viewed on its own, as opposed to only requiring disclosure when the amount rises to the level of "an appreciable portion of the work as a whole."

While the AI Guidance requires only basic disclosure of AI-generated material in the first instance in copyright applications, this provides little comfort when the Office's registration specialists may request additional information during their review of the application or in cancellation proceedings, and when such a disclosure will almost certainly be the target of mischief in litigation discovery. Even a basic disclosure creates undue risk that AI-assisted works copyright registrations will be unfairly delayed, denied, or challenged.

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[19] *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*, 88 Fed. Reg. 16190, 16193 (Mar. 16, 2023).

[20] Compendium III §§ 503.5, 621.2, 621.9(A).

[21] *Id.* (emphasis added).

[22] *Id.*

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Software developers in particular need clarity from the Office that an entire software build remains fully registrable and protectable under copyright, without undue burden and risk. As discussed above, legitimate inquiry into the use of AI tools in code creation would likely result in a finding that the code is copyrightable. That is unless an applicant is required, by default or upon request, to prove the provenance of each and every line of code among the millions of lines of code in the code base and the implicate is somehow faulted for the inability to do so. It is impractical, and potentially impossible, to require software developers to prove whether any individual line of code was fully authored by a human coder, or if the human coder began writing the code and then exercised creative judgment with respect to AI code suggestions, in terms of testing, accepting, revising, and incorporating code suggestions into a module and the larger code base. The consequences of failing to have such proof can be especially draconian, including "losing the benefits of the registration" and other penalties in litigation that may potentially arise.[23]

For these reasons, Qualcomm respectfully submits that the Office should not require as a matter of course that all applicants disclose the use of AI tools or the inclusion of AI-generated material within a larger work, particularly software code, nor should the Office routinely engage in substantive evaluation of every use of AI in reviewing registration applications or subsequent proceedings. There may be applicants who attempt to register a work that lacks the requisite human expression, such as when the work is comprised entirely of the unaltered output of an AI tool based on a single, general prompt with *de minimis* creativity. To the extent that the Office wishes to address such edge cases, it should do so only in a narrowly targeted way, such as by requiring applicants to attest that the work as a whole does not consist of the unaltered output generated by an AI tool. Where an applicant cannot so attest, the Office could then conduct further inquiry as to any other basis for finding sufficient human authorship in the work. But the Office's policies should not create burden and risk for the many legitimate uses of AI tools that facilitate human authorship and creativity.

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Qualcomm appreciates the Office's efforts and consideration.

Sincerely,

Jill Abasto

Jill Abasto
VP & Legal Counsel
Qualcomm Incorporated

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[23] AI Guidance at 16193–94.