QUANTUM INDUSTRY COALITION

October 14, 2021

Via electronic submission at http://www.regulations.gov

Subject: **Comment of the Quantum Industry Coalition Regarding the U.S. Patent and Trademark Office Patent Eligibility Study**

Reference: **86 FR 36257, Docket Number PTO-P-2021-0032, Document Number 2021-14628**

The Quantum Industry Coalition ("QIC") appreciates the opportunity to submit these comments to the U.S. Patent and Trademark Office ("USPTO") in response to the Patent Eligibility Study Request for Information ("RFI").

As the voice of the quantum industry in the United States, QIC is in a unique position to provide feedback and assistance to the Office regarding the impact of U.S. patent law and policy on U.S. quantum leadership. QIC would appreciate an opportunity to work with USPTO on an ongoing basis to ensure that intellectual property issues are addressed in ways that promote U.S. quantum leadership, consistent with the nation's overarching intellectual property regime. In particular, we would like to invite USPTO to conduct a roundtable with QIC member companies on these issues in the near future.

QIC is a group of companies dedicated to maintaining the United States' leadership in the development of quantum technologies. Our members range from start-ups to Fortune 100 companies with a variety of focuses on aspects of quantum technology, including hardware, software, and application development. We have experience working with Congress and the Administration to ensure that the United States maintains and enhances its position as the world leader in the development and commercialization of quantum technologies. Within the scope of the RFI, QIC is best categorized as an advocacy group; our members are inventors, patent owners, licensees, and users of patented technology.

Quantum computing technologies represent a fundamentally different kind of computing capability - one that can address problems that even the most powerful classical computers are incapable of solving. Thus, while quantum computing will not supplant classical computing, it will become a vitally important tool for applications ranging from drug discovery and climate modeling to large-scale logistics and decryption. Quantum computing promises to solve some of the world's biggest and most intractable problems. We believe that innovations in quantum computing, and the breakthroughs that it will foster, will significantly improve our quality of life. Congress has recognized the importance of U.S. quantum leadership, passing the National Quantum Initiative Act in 2018. This Administration and its predecessor have made quantum technologies a top R&D priority.

QIC's members, other companies, and research institutions around the world are pursuing a wide variety of promising approaches to large-scale quantum computing and are making substantial investments to achieve this goal. Technical challenges include the isolation of quantum bits

("qubits"), "entangling" them such that their states are interdependent, maintaining that entanglement for useful lengths of time, and correcting for errors in the system. QIC's members are among the world's leaders in patenting inventions to address these and many other issues. The ability to obtaining predictable and enforceable patent rights for inventions solving quantum computing technical challenges is crucial for QIC members to help the U.S. maintain and build America's leadership in quantum computing.

We believe it is important that the U.S. patent system not be split into different regimes for different technologies, and this applies with equal force with respect to treatment of quantum computing technologies. Since the founding of USPTO, we have led the world in protecting and promoting innovation in part because we have resisted this temptation. Our unitary patent system should continue, and our leadership on global patent reform should incorporate this principle.

We strongly recommend that USPTO expand examiner training in the area of quantum computing. Additional training in this area will help ensure consistency and improve patent quality, and has the potential to decrease processing time. QIC and its member companies would be happy to serve as resources for examiner training, as appropriate.

USPTO and the Department of Commerce should take advantage of opportunities to promote the participation of small and medium businesses in quantum innovation. These include ensuring that USPTO's National Council for Expanding American Innovation focuses on quantum technologies as well as other key emerging technologies, as well as seeking input from small and medium businesses regarding their experiences with the patent system. Several of QIC's small and medium business member companies have indicated that consistency is a bigger problem for them than it may be for larger companies that have resources to address it. Additional examiner training, as noted above, would help these companies by improving consistency.

The QIC appreciates this opportunity to respond to the RFI. If you require additional information, please contact QIC Executive Director Paul Stimers at (202) 661-3883 and paul.stimers@klgates.com.

Respectfully,

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