

United States Senate

WASHINGTON, DC 20510

October 3, 2024

The Honorable Lloyd J. Austin III
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301-1000

Dear Secretary Austin:

We write today to request information regarding the Department of Defense's (DOD) efforts to strengthen our national security by growing American leadership in strategically critical quantum sensing technology, including advanced navigation, radar, and sonar technology.

As you know, quantum information science as a whole has the potential to significantly advance current computing, communication, and sensing technology.¹ Quantum sensing technology in particular can enable precise navigation that is resistant to signal jamming efforts by adversaries, providing a valuable alternative to GPS.²

The United States must continue to maintain its technological and military edge over foreign adversaries – especially China. However, according to a recent report, China is pursuing advances in quantum information science, some of which outstrip the efforts of the United States in scale and scope.³ The report further states that China roughly matches the United States in the development of quantum sensing technology.⁴

To ensure that the United States maintains its technological advantage, DOD must have a strategic plan to integrate quantum sensing into our national security efforts. Accordingly, we request that you please provide us with written responses to the following questions no later than November 15, 2024.

1. What is the current breakdown of quantum sensing efforts within DOD, including the offices responsible for managing and moving forward overall DOD quantum efforts?
2. What is the current internal coordination process for DOD efforts related to quantum sensing?
3. How are DOD quantum sensing efforts being coordinated with other government agencies, including the Department of Energy and the National Labs, the Department of Commerce, the National Science Foundation, and the Defense Advanced Research Projects Agency?

¹ Office of Science, *Quantum Information Science*, Department of Energy, <https://www.energy.gov/science/quantum-information-science>

² James Andrew Lewis and Georgia Wood, *Quantum Technology: Applications and Implications*, Center for Strategic and International Studies (May 25, 2023), <https://www.csis.org/analysis/quantum-technology-applications-and-implications>

³ Hodan Omaar and Martin Makaryan, *How Innovative is China in Quantum?*, Information Technology & Innovation Foundation (Sept. 9, 2024) <https://itif.org/publications/2024/09/09/how-innovative-is-china-in-quantum/>

⁴ *Id.*

4. What emerging threats and areas of concern has DOD identified that quantum sensing may play a role in addressing? How has DOD already worked to use quantum sensing to address these threats?
5. Please describe DOD's strategic plan, both near and long-term, to advance quantum sensing in national defense and to create redundancy for existing critical systems by using quantum sensing technology. How will DOD execute these strategic plans?
6. What is the current state of DOD efforts to use quantum sensing technology to advance alternative precision navigation and timing; undersea or underground detection; and advanced intelligence, surveillance, and reconnaissance imaging? How will DOD advance these specific efforts moving forward?
7. What does DOD need from Congress to support, sustain, and accelerate quantum sensing technology for national defense?

If any relevant information is classified, we request that you produce both an unclassified response that is suitable for public release, as well as a classified version for review by appropriate congressional personnel.

Thank you for addressing our concerns and for your continued work to protect our country.

Sincerely,



Margaret Wood Hassan
United States Senator



Marsha Blackburn
United States Senator