

Congress of the United States

Washington, DC 20515

November 28, 2023

The Honorable Gina Raimondo
Secretary
U.S. Department of Commerce
1401 Constitution Ave. NW
Washington, DC 20230

The Honorable Lloyd Austin
Secretary
U.S. Department of Defense
1400 Defense Pentagon
Washington, DC 20301

The Honorable Janet Yellen,
Secretary
Department of the Treasury
799 9th St SW
Washington, DC 20001

Dear Secretary Raimondo, Secretary Yellin, and Secretary Austin,

As the Chairman and the Ranking Member of the House Select Committee on Strategic Competition between the United States and the Chinese Communist Party (CCP), we write to request you investigate all People's Republic of China (PRC) Light Detection and Ranging (LiDAR) technology companies on whether their activities justify inclusion on the Defense Department's Chinese Military Companies List, Commerce's Bureau of Industry and Security Entity List, and Treasury's Non-SDN Chinese Military-Industrial Complex Companies List.

LiDAR is a critical technology used in autonomous systems and robotics but is currently not subject to U.S. export controls or government procurement restrictions, which raises several concerns. Given the importance of LiDAR, it is crucial to ensure U.S. technology used in foreign LiDAR systems are not being leveraged by our adversaries to create autonomous military vehicles and weapons. Urgent action is also needed to stop LiDAR produced by state-backed entities from foreign adversary countries to proliferate in the U.S. market or gain access to U.S. capital markets or U.S. critical infrastructure systems. Finally, because the U.S. government currently has no security requirements for the procurement of LiDAR technology, there is significant risk that PRC-made LiDAR are already present in U.S. defense systems and platforms that the U.S. military and its contractors are unaware of.¹

¹ LiDAR systems specially designed for a military end user are subject to International Traffic in Arms Regulations (ITAR) controls. However, ITAR controls would not address commercial and dual-use concerns about access to sensitive U.S. information and the return of data to the PRC. See:

LiDAR is an emerging, dual-use, remote sensing technology used in military, transportation, agriculture, weather, manufacturing, and other systems. It uses pulsed laser light to measure the distance, speed, and/or altitude of physical objects to map the surrounding environment. The technology is crucial for creating high-definition maps around autonomous vehicles, raising serious national security concerns related to data security, cybersecurity, and exquisite mapping of U.S. infrastructure. LiDAR is also being deployed in “smart cities” on critical U.S. infrastructure, including traffic signals, ports and drawbridges.² There is a serious national security risk that under the PRC’s National Security Law, all PRC LiDAR companies must provide any available data collected by their products and systems to the CCP, when required. This means that the CCP could potentially access troves of data on not only U.S. mapping and infrastructure, but also on U.S. military systems, or introduce malware via software updated that could degrade the performance of U.S. systems relying on PRC LiDAR.³

Up until 2018, the global LiDAR market was dominated by U.S. companies, but PRC LiDAR companies are advancing quickly due to the support of CCP industrial policies, including tariffs and subsidies. Furthermore, PRC LiDAR firms have benefited from access to the U.S. capital markets and technology through investments in and acquisitions of American LiDAR businesses, combined with allegations of IP theft.⁴ The PRC considers LiDAR a strategic technology and has called for its development for use in national security and in military industries. Today, a single PRC company Hesai Technology has 47% of the global market share by sales revenue.⁵ Many PRC LiDAR companies have ties to the Chinese military that are of grave national security concern. For example, Hesai is reportedly tied to the military’s China Electronics Technology Group Corporation (CETC), a state-owned entity that is a key player in advancing the PRC’s military civil fusion program.⁶ CETC is also on the DoD’s Chinese Military Companies List, and some parts of CETC and its institutes are on the BIS Entity List. Another PRC LiDAR company, Robosense, has ties to the Harbin Institute of Technology, a PRC military university. Other PRC companies that are already on multiple U.S. government blacklists have also started their own LiDAR companies, including DJI’s Livox Technology and Huawei. Furthermore, PRC LiDAR is being used for surveillance in the Xinjiang Uyghur Autonomous Region (XUAR) where the CCP has engaged in the oppression of the Uyghur population.⁷

Most commercial LiDAR sensors require Field Programmable Gate Array (FPGA) semiconductor chips to work. These chips can be configured to perform complex operations such

<https://www.federalregister.gov/documents/2016/10/12/2016-24225/amendment-to-the-international-traffic-in-arms-regulations-revision-of-us-munitions-list-category>

² “Chattanooga building out ‘smart intersection network,’” Smart City Dive, January 6, 2023, See:

<https://www.smartcitiesdive.com/news/chattanooga-smart-city-intersections-lidar-seoul-robotics-usdot/639799/>

³ “U.S.-China Competition in Emerging Technologies: LiDAR,” Congressional Research Service, August 14, 2023, See: <https://crsreports.congress.gov/product/pdf/IF/IF12473> (hereinafter “LiDAR CRS Report”)

⁴ LiDAR CRS Report at pages 1-2.

⁵ “Revolutionizing the Automotive Landscape: LIDAR Integration Soars as Chinese OEMs Take the Lead, Expected to Reach \$4.8B by 2028,” Yole Intelligence, 2023 LiDAR Industry Report, See:

<https://www.yolegroup.com/product/report/lidar-for-automotive-2023/>

⁶ LiDAR CRS Report at page 2.

⁷ “Driverless police surveillance cars hit streets of Xinjiang’s Karamay,” Radio Free Asia, July 14, 2022. See: <https://www.rfa.org/english/news/uyghur/driverless-cars-07142022172350.html>

as image processing and digital signal processing, frequently used in robotics, automotive products, wireless communications, and aerospace and defense applications. While FPGAs with more than 700 digital input/outputs are controlled by BIS, FPGA chips typically used in LiDAR systems have a lower digital input/output and are not currently subject to export controls. Currently, two U.S. companies, Xilinx Inc. and Altera Corporation control most of the global FPGA market. Thus, PRC LiDAR companies rely on U.S. FPGAs to build their systems, and it is concerning that there are currently U.S. components that are potentially being used in the PRC military's autonomous vehicle systems. Increased scrutiny is required to ensure American LiDAR technologies are not advancing PRC weapons platforms or surveillance systems used to facilitate human rights abuses.

Due to these critical national security threats, we urge you to investigate the PRC LiDAR industry for entities that should be included in your agency's respective lists and whether specific U.S. technologies should be subject to export controls to the PRC. Finally, as steps are taken to address PRC LiDAR companies' activities and partnerships in the United States, we believe it is also imperative to require more transparency in our defense industrial base and related supply chains to identify whether PRC-made LiDAR products are embedded in our defense platforms.

The House Select Committee on the Strategic Competition Between the United States and the Chinese Communist Party has broad authority to "investigate and submit policy recommendations on the status of the Chinese Communist Party's economic, technological, and security progress and its competition with the United States" under H. Res. 11.

Thank you for your work and expediency on these issues. We look forward to working with you to further protect our nation's national security.

Sincerely,



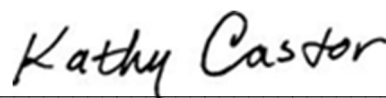
Mike Gallagher
Chairman



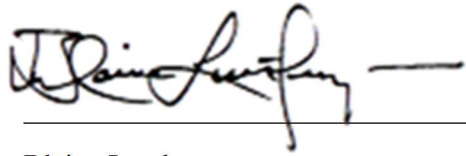
Raja Krishnamoorthi
Ranking Member



Rob Wittman
Member of Congress



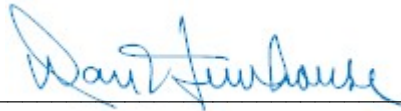
Kathy Castor
Member of Congress



Blaine Luetkemeyer
Member of Congress



Seth Moulton
Member of Congress



Dan Newhouse
Member of Congress



Mikie Sherrill
Member of Congress



John Moolenaar
Member of Congress



Bill Pascrell
Member of Congress



Neal Dunn
Member of Congress



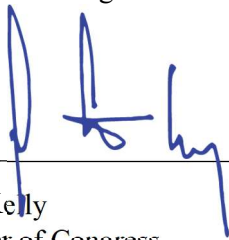
Jim Banks
Member of Congress



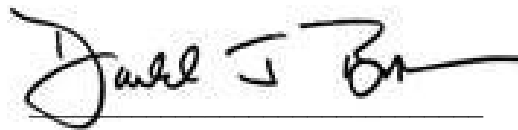
Dusty Johnson
Member of Congress



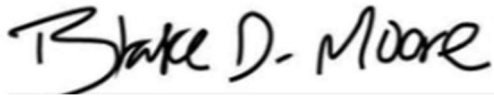
Carlos Gimenez
Member of Congress



Trent Kelly
Member of Congress



Don Bacon
Member of Congress



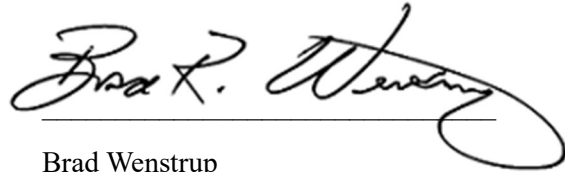
Blake Moore
Member of Congress



Elise Stefanik
Member of Congress



Ben Cline
Member of Congress



Brad Wenstrup
Member of Congress

CC:

The Secretary of State, The Honorable Antony Blinken
The Secretary of Energy, The Honorable Jennifer Granholm