UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of **CERTAIN ROTATING 3-D LIDAR DEVICES, COMPONENTS THEREOF, AND SENSING SYSTEMS CONTAINING THE SAME**	**Investigation No. 337-TA-_____**

CERTIFICATION OF CONFIDENTIALITY

I, Steven M. Levitan, counsel for Complainant Velodyne Lidar USA, Inc., declare as follows:

1. I am duly authorized by Complainant to execute this certification.

2. I have reviewed Confidential Exhibits 29-30, 34, 41, 54, 58-59, 62, and 64-67 to Complainant's Verified Complaint, for which Complainant seeks confidential treatment.

3. Confidential Exhibit 29 is a confidential list that identifies Complainant's licensees to the Asserted Patents. Disclosure of this proprietary information to the public would cause substantial harm to Complainant and its competitive position. Disclosure of this information would also impair the Commission's ability to obtain information necessary to perform its statutory function.

4. Confidential Exhibits 30, 34, and 41 include and contain excerpts from a proprietary third party tear down report that Complainant is under obligations not to publicly disclose. According to the third party, disclosure of this proprietary information to the public would cause substantial harm to the third party and its competitive position. Disclosure of this information would also impair the Commission's ability to obtain information necessary to perform its statutory function.

5. Confidential Exhibits 54 and 59 are confidential claim charts showing how exemplary Complainant's domestic industry products practice exemplary claims of the Asserted Patents. These charts contain confidential commercial and technical information about Complainant's domestic industry products, which is not available for public dissemination. Disclosure of this proprietary information to the public would cause substantial harm to Complainant and its competitive position. Disclosure of this information would also impair the

Commission's ability to obtain information necessary to perform its statutory function.

6. Confidential Exhibits 58, 62, and 64-66 are Complainant's internal and confidential technical documents. These technical documents contain information not available for public dissemination. Disclosure of this proprietary information to the public would cause substantial harm to Complainant and its competitive position. Disclosure of this information would also impair the Commission's ability to obtain information necessary to perform its statutory function.

7. Confidential Exhibit 67 is a confidential domestic industry chart concerning Complainant's domestic investments in plant and equipment, labor and capital, and engineering, research and development related to domestic articles protected by the Asserted Patents. Disclosure of this proprietary information to the public would cause substantial harm to Complainant and its competitive position. Disclosure of this information would also impair the Commission's ability to obtain information necessary to perform its statutory function.

8. To the best of my knowledge, information, and belief, founded after a reasonable inquiry, substantially identical information to that contained in these confidential exhibits is not available to the public.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 15th day of June, 2022, at Palo Alto, California.

Respectfully submitted,

/s/ Steven M. Levitan

Steven M. Levitan
Counsel for Complainant Velodyne Lidar USA, Inc.

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of **CERTAIN ROTATING 3-D LIDAR DEVICES, COMPONENTS THEREOF, AND SENSING SYSTEMS CONTAINING THE SAME**	**Investigation No. 337-TA-___**

VELODYNE LIDAR USA, INC.'S PUBLIC INTEREST STATEMENT

Complainant Velodyne Lidar USA, Inc. ("Velodyne" or "Complainant") respectfully submits this public interest statement under 19 C.F.R. §210.8(b). This investigation arises from Velodyne's widely acclaimed invention of a rotating LiDAR sensor that changed the course of history, made autonomous vehicles a reality, and positioned Velodyne as a market leader. Velodyne seeks to protect itself and its United States operations from a more recent competitor that took Velodyne's revolutionary patented inventions, incorporated them into its competing products manufactured in Thailand, and is injecting those infringing products into the United States market. The relief Velodyne seeks would serve the public interest by protecting Velodyne's intellectual property rights and does not raise any countervailing concerns. Velodyne stands ready to supply the needs of United States customers with 3-D LiDAR devices that practice Velodyne's United States Patent Nos. 7,969,558 (the "'558 patent") and 9,983,297 (the "'297 patent") (collectively, the "Asserted Patents"). Thus, this investigation does not present circumstances that warrant the time and expense of discovery and trial for a Recommended Determination by the Administrative Law Judge ("ALJ") on the public interest.

Velodyne seeks a limited exclusion order specifically directed to Respondents (Ouster, Inc. ("Ouster") and Ouster's contract manufacturer Benchmark Electronics, Inc. ("Benchmark") (collectively "Respondents")) that excludes certain rotating 3-D LiDAR devices, components

thereof, and sensing systems containing the same ("Accused Products") that infringe one or more of the asserted claims of each Asserted Patent. Velodyne also seeks cease and desist orders prohibiting the sale for importation, importation, sale after importation, distribution, offering for sale, promoting, marketing, advertising, testing, demonstrating, warehousing inventory for distribution, solicitation of sales, programming, repairing, maintaining, using, transferring, and other commercial activity relating to Accused Products that infringe one or more of the asserted claims of each Asserted Patent.

Granting these orders would serve the public's strong interest in protecting intellectual property rights, an interest that the Commission has routinely recognized. *See, e.g., Certain Baseband Processor Chips and Chipsets*, Inv. No. 337-TA-543, Comm'n Op., 2011 WL 6121182, at *68 (Oct. 1, 2011). Velodyne employs hundreds of employees in the United States and invests millions of dollars annually to manufacture, create, improve, and support its innovations. Velodyne has also made substantial investments in labor and capital in the United States for 3-D LiDAR devices that practice the Asserted Patents. Granting the orders sought by Complainant is necessary to protect these substantial investments, as well as innovation, and the domestic industry they support.

Respondents have unlawfully used Velodyne's patented 3-D LiDAR technology in products manufactured in Thailand and imported into the United States. Respondents' infringement stifles innovation and should be stopped. If Respondents' unauthorized use of Velodyne technologies allows them to take illegal and infringing shortcuts, others will be encouraged to infringe patents rather than hire engineers, invest in innovation, and develop new technologies in the United States.

The remedy requested also does not implicate any compelling public interest that would weigh against entry of a limited exclusion order and cease and desist orders. The Accused Products do not implicate any particular public health, safety or welfare concerns. Consumers do not face

any potential shortage of like or directly competitive products in the United States because Velodyne can meet the demand for products that would be subject to the requested remedial orders.

Thus, the requested remedial orders would provide effective relief in the face of on-going and open patent infringement in the United States by the Respondents. Protecting Velodyne's intellectual property rights through the requested remedial orders will accordingly serve the public interest while having little or no adverse effect on public health and welfare.

I. Use Of Articles Potentially Subject To Remedial Orders In The United States

The articles potentially subject to exclusion include rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same. Specifically, the Accused Products in the accompanying Complaint include, for example: Ouster's OS0 (including, without limitation, OS0-32, OS0-64, and OS0-128), OS1 (including, without limitation, OS1-32, OS1-64, and OS1-128), and OS2 (including, without limitation, OS2-32, OS2-64, and OS2-128) product lines, including those manufactured by Ouster's contract manufacturer Benchmark at Benchmark facilities in Thailand. The Accused Products are generally used by United States consumers to perform 3-D scanning of a surveyed environment (i.e., collecting measurements to create a 3-D representation of the surveyed environment) in various industries, including autonomous vehicle navigation and advanced driver assistance systems, industrial machines, unmanned aerial vehicles, intelligent infrastructure solutions and systems, and robotics.

II. There Are No Public Health, Safety, Or Welfare Concerns In The United States Relating To The Potential Remedial Orders

Exclusion of the Accused Products does not implicate any particular public health, safety, or welfare concerns. Specifically, the products at issue are not medical or health devices, are not otherwise health-related, and are not essential for public safety or welfare. Moreover, there are other sources of like, substitute alternatives, such as solid-state LiDAR, in the United States, and no health or safety-related features are unique to Respondents' Accused Products. Accordingly,

there are no public health, safety, or welfare considerations that would counsel against excluding Respondents' Accused Products.

III. Velodyne Makes Like Or Directly Competitive Articles Which Could Replace The Subject Articles If They Were To Be Excluded From The United States, And Has The Capacity To Replace The Volume Of Articles Potentially Subject To Remedial Orders In A Commercially Reasonable Time

Velodyne makes like and directly competitive articles that would replace Respondents' Accused Products if they are excluded from the United States. Specifically, Velodyne designs, manufactures, and supplies 3-D LiDAR devices, including the VLP-16, VLP-32C, HDL-32E, and VLS-128 families of 3-D LiDAR devices, which can replace Respondents' Accused Products. Furthermore, using Velodyne's current manufacturing facilities, Velodyne has the ability to substantially scale up its manufacturing capacity and to fulfill Ouster's current market share in a commercially reasonable time should the Accused Products be excluded. In addition, other manufacturers of LiDAR devices in the United States and/or Velodyne's licensees can replace Respondents' Accused Products. Thus, there are other like and competing products available from Velodyne and other manufacturers of LiDAR devices.

IV. The Requested Remedial Orders Will Not Have A Significant Negative Impact On Consumers In The United States

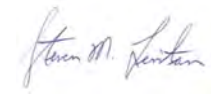
As indicated above, if Respondents' infringing Accused Products are excluded, consumers will not be deprived of like or competitive products, and consumers will not be adversely impacted because Velodyne can meet United States market demand and competing products are readily available in the United States from other sources. Thus, the requested limited exclusion order and cease and desist orders will have no meaningful impact on U.S. consumers. *See, e.g., Certain Personal Data and Mobile Commc'n Devices and Related Software*, Inv. No. 337-TA-710, Comm'n Op., 2011 WL 12488979, at *40 (Dec. 29, 2011) ("Accordingly, the mere constriction of choice cannot be a sufficient basis for denying the issuance of an exclusion order.").

V. CONCLUSION

Issuing a permanent limited exclusion order and cease and desist orders in this Investigation against Respondents' infringing Accused Products will not negatively affect the public health, safety or welfare in the United States, competitive conditions in the United States economy, the production of like or competitive articles in the United States, and the availability of such products to consumers. The Accused Products manufactured by the Respondents are not essential to public health and safety, and Respondents' infringing products do not implicate any unique safety-related features. Accordingly, there are no public interest concerns preventing the issuance of a permanent exclusion order and cease and desist orders or that would necessitate discovery and trial on this issue by the ALJ.

Dated: June 15, 2022

Respectfully submitted,

By: 

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In the Matter of **CERTAIN ROTATING 3-D LIDAR DEVICES, COMPONENTS THEREOF, AND SENSING SYSTEMS CONTAINING THE SAME**	**Investigation No. 337-TA-_____**

COMPLAINT OF VELODYNE LIDAR USA, INC. UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

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16	Ouster, Inc. SEC Form 10-K Annual Report for the fiscal year ending December 31, 2021
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18	Transcript, Ouster at Barclay's Global Automotive Conference (November 17, 2021)
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25	*Case Study: Building Better Lidar for Autonomous Vehicles With Ouster*, Benchmark Electronics, Inc. (2019)
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32	Ouster Studio User Guide, v1.0.1, Last Updated: July 16, 2019
33	Ouster OS0 Datasheet, Revision: 12/18/2021
34	**CONFIDENTIAL** Tear Down Report

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41	**CONFIDENTIAL** '297 Infringement Claim Chart – Accused Ouster Products
42	OS0 LIDAR Sensor Specification," https://ouster.com/products/scanning-lidar/os0-sensor/
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57	Velodyne LiDAR VLP-16 User Manual (63-9243 Rev E 02-26-2019)
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I. INTRODUCTION

1.1 Complainant Velodyne Lidar USA, Inc. ("Velodyne") requests that the United States International Trade Commission institute an Investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337"), to remedy the unlawful importation, sale for importation, and/or sale after importation of infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same. These products infringe independent claims 1, 19 and dependent claims 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, and 25 of United States Patent No. 7,969,558 (the "'558 patent"), and independent claims 1, 12, and 16 and dependent claims 2, 7, 10, 11, 12, and 13 of United States Patent No. 9,983,297 (the "'297 patent") (collectively, the "Asserted Patents").

1.2 Velodyne is a pioneer and market leader in the LiDAR industry, providing smart, powerful LiDAR-based vision solutions for autonomous vehicles, driver assistance, delivery solutions, robotics, industrial, infrastructure, navigation, mapping and more. Its history of innovation is legendary. Indeed, even typically staid financial publications and dry technology journals break form and report that Velodyne designed an "audacious" and "revolutionary" invention that "change[d] the world" by "giving automobiles the sense of sight." Ex. 5 at 7; Ex. 6 at 3, 6; Ex. 7 at 4. Velodyne uses this groundbreaking technology to build solutions for a wide variety of industries and applications. Velodyne's success is now threatened by a more recent competitor that took Velodyne's revolutionary inventions, incorporated them into its competing products manufactured in Thailand, and is injecting those infringing products into the United States market.

1.3 In the early 2000s, the United States government was looking to spur the development of autonomous vehicles. Ex. 5 at 2; Ex. 8 at 2-3. So one of its core research agencies, DARPA, challenged innovators to design self-driving vehicles and enter them in a race to win $1

million. Ex. 5 at 2; Ex. 8 at 2-3. Twenty-one teams populated by leading scientists and engineers qualified for the first Grand Challenge in 2004, and the field narrowed to fifteen for the race. Ex. 9; Ex. 10 at 5; Ex. 5 at 2. Not a single vehicle finished that first race in 2004. Ex. 5 at 2; Ex. 10 at l, 7-9. The most successful vehicle managed just 7.4 miles. Ex. 10 at 8.

1.4 Enter David Hall, a designer of high-end audio speakers who founded Velodyne Acoustics in 1983. Ex. 6 at 2. Brimming with inventive energy, Mr. Hall spent much of his free time building robots. Ex. 6 at 5-6. By the early 2000s, he was growing frustrated with Silicon Valley's ever-lengthening commute. Ex. 8 at 2. When DARPA announced its Grand Challenge, he saw an opportunity to leverage his hobby into solving that problem. Ex. 8 at 2. Mr. Hall entered the 2004 challenge with a camera-based system, quickly realized that a better technology was needed, and in 2005 focused on laser imaging detection and ranging ("LiDAR")[1]. Ex. 6 at 5-6; Ex. 5 at 6-7.

1.5 Mr. Hall and his unique background brought new insights to LiDAR. While those entrenched in the field were designing LiDAR systems that "scanned for objects only along a single, fixed line of sight," Mr. Hall recognized that such systems could not generate the comprehensive data needed to navigate complex environments reliably. Ex. 8 at 4; Ex. 5 at 7; Ex. 11 at 4. So he took a completely different approach: he conceived of a novel LiDAR system that rotates a plurality of pulsing laser emitters and avalanche photodiode detectors ("APDs") to use time of flight data to generate a dense "3-D cloud" of points on a map with a 360-degree field of view, which the vehicle could use to "see" its complex surroundings just as humans do. Ex. 6 at 6; *see* also Ex. 1 at claim 1. His competitors were skeptical. Ex. 5 at 8-9. Indeed, the field's

[1] The term LiDAR is capitalized variously as LiDAR, LIDAR, Lidar, or lidar.

luminaries scoffed at the idea—the data would be generated too slowly, they said. *Id*. at 3-4. But Mr. Hall trusted his instincts and stuck with his design.

1.6 Mr. Hall was right, and the triumph of his invention was unequivocal: six teams completed DARPA's 2007 Urban Challenge by navigating a 60-mile urban course in which they not only had to navigate the course, but also had to obey all traffic laws and account for the other vehicles. Ex. 12 at 1. Five of those teams, including both the winner and the runner-up, used David Hall's "Velodyne" system. *Id*.

1.7 The U.S. Patent Office awarded Mr. Hall the '558 patent for his invention and his invention was honored by the Smithsonian Institution, which now houses the original prototype. Ex. 13 at 1-2. Even the once-skeptical industry embraced his design. An August 2017 Forbes article recounts the industry's reaction to the "revolutionary" invention claimed in the '558 patent and embodied in Velodyne's practicing sensors. *See* Ex. 6 at 2-3. The Verge, a technology journal, described Mr. Hall's invention as "audacious," recognizing that "Velodyne has become the gold standard for automotive LIDAR, used by almost all the major players trying to produce driverless cars." Ex. 5 at 7. Velodyne was recognized as one of the most innovative companies in the global transportation industry "for giving automobiles the sense of sight." Ex. 7 at 4. In 2018, the Intellectual Property Owners Education Foundation named Mr. Hall "Inventor of the Year" for "creating the groundbreaking lidar sensor technology that is the essential component for fully autonomous vehicles." Ex. 14 at 1.

1.8 Velodyne (including its predecessor entities) launched its first commercial 3-D LiDAR product in 2007. Since then, Velodyne has continued to innovate, developing further inventions to enhance and improve 3-D LiDAR technology, including those set forth in the '297 patent (relating to varying the illumination for 3-D imaging in a pulsed LiDAR system, which can achieve, for example, improved power efficiency by reducing total energy consumption and heat

generation). By continuing to invest its substantial effort, intellectual firepower, and millions of dollars in the design, development, and manufacturing of 3-D LiDAR technology, Velodyne grew to the market leader that it is today. Velodyne's investment and key facilities are principally in the United States: San Jose, CA and Alameda, CA.

1.9 Now, Velodyne and its U.S. business are threatened because the proposed Respondents, Ouster, Inc. ("Ouster") and its contract manufacturer Benchmark Electronics, Inc. ("Benchmark"), took Velodyne's revolutionary inventions and incorporated them into Ouster's competing products. As set forth in Sections VII-VIII below, Respondents make Ouster LiDAR systems that infringe multiple claims of the Asserted Patents, using Velodyne's patented technology without a license, with most or all of the manufacturing being performed at Benchmark's manufacturing facilities in Thailand. Ex. 15 at 7; Ex. 16 at 3, 9, 22, 44, 46; Ex. 17 at 13; Ex. 18 at 6.

1.10 Even worse, Ouster—and, in particular, Ouster's co-founders Angus Pacala (CEO) and Mark Frichtl (CTO)—knew of and studied Velodyne's patented technology and products before it incorporated the technology into its own products, the first of which, the OS1, was released in December 2017. Ex. 19 at 2. (Ouster blog announcing OS1 Dec. 2017 release). For example, Ouster's US Patent No. 10,063,849, filed January 3, 2018, lists as inventors both Pacala and Frichtl, and claims priority to a provisional application filed September 24, 2015. This Ouster patent acknowledges Velodyne's '558 patent in its background section as "the fundamental technology" behind 3-D rotational LiDAR sensors; cites as prior art the '558 patent, the published application (US 2017/0269198A1) that became the '297 patent, and numerous Velodyne data sheets, user's manuals, and website pages about Velodyne's HDL-32, HDL-64, and VLP-16 rotational LiDAR products; and extensively discusses Velodyne's HDL-32 and HDL-64 products. Ex. 20 at col. 1, ll. 41-67, col. 2, ll. 1-8, pp. 2-3.

1.11 As the evidence set forth in this Complaint shows, the Respondents currently manufacture outside the United States, import into the United States, sell for importation into the United States, sell in the United States after importation, and/or instruct others regarding the use or manufacture of imported 3-D LiDAR devices, components thereof, and sensing systems containing the same which directly infringe, literally or under the doctrine of equivalents, contributorily infringe, and/or induce the infringement of, the Asserted Patents.

1.12 A domestic industry, as required by 19 U.S.C. § 1337(a)(2) and (3), exists in the United States relating to Velodyne's exploitation of the Asserted Patents.

1.13 Velodyne seeks, as relief, a limited exclusion order barring from entry into the United States infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same manufactured by or on behalf of, or imported by or on behalf of, Respondents. Velodyne also seeks cease and desist orders prohibiting the sale for importation, importation, sale after importation, distribution, offering for sale, promoting, marketing, advertising, testing, demonstrating, warehousing inventory for distribution, solicitation of sales, programming, repairing, maintaining, using, transferring, and other commercial activity relating to infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same.

II. COMPLAINANT

2.1 Complainant Velodyne is a Delaware corporation with its principal place of business at 5521 Hellyer Avenue, San Jose, California 95138.

2.2 As discussed above, Velodyne developed a novel and revolutionary LiDAR design that forever changed the 3-D LiDAR and autonomous vehicle industries. Indeed, while valuable for numerous applications, such as aerial mapping, mobile mapping, security, and industrial automation, Velodyne's 3-D LiDAR sensors are best known as the roof-mounted rotating devices

that guide autonomous vehicles along Silicon Valley streets. The U.S. Patent Office awarded Velodyne the patents asserted in this Complaint for this groundbreaking work.

III. PROPOSED RESPONDENTS

3.1 Respondent Ouster is a publicly traded U.S. corporation, organized under the laws of the state of Delaware, with its corporate headquarters at 350 Treat Avenue, San Francisco, California. Ex. 16 at Caption. Ouster was founded in 2015 by Angus Pacala, its current CEO, and Mark Frichtl, its current CTO. While in High School, Mr. Pacala followed the launch of the DARPA Grand Challenge (from which he was presumably aware of Velodyne's pioneering 3-D LiDAR technology), inspiring "a lifelong passion for autonomous cars." Ex. 21 at 1. Ouster launched out of stealth mode in December 2017, announcing as its first product the OS1 LiDAR sensor at that time, and became publicly traded on the New York Stock Exchange in 2021.

3.2 Upon information and belief, Ouster is involved in the design, development, manufacture, sale for importation, importation, and sale after importation of rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same. For example, according to its 2021 annual report, Ouster provides "lidar sensors and enabling software that gives robots, machinery, vehicles, and fixed infrastructure advanced 3D vision allowing them to safely interact with the physical world." Ex. 16 at 2. Ouster sells "Velodyne-like spinning lidar sensors" that use "the same basic technology approach as Velodyne." Ex. 22 at 2, 5. Ouster's "OS" rotational LiDAR product line includes "the ultra-wide view 'OS0,' the mid range 'OS1,' and the long range 'OS2.'"[2] Ex. 16 at 5. Within each of these models, Ouster "offer[s] resolution options of 128 lines vertically ('channels'), 64 channels, or 32 channels." *Id.* at 6. Ouster targets four end markets for its OS products: "industrial, smart infrastructure, robotics, and automotive." *Id.* at 8.

[2] The OS0 and OS2 products were first released in January 2020. Ex. 23 at 2.

3.3 Respondent Benchmark is a publicly traded U.S. corporation, organized under the laws of the state of Texas, with its corporate headquarters at 56 South Rockford Drive, Tempe, Arizona. Ex. 24 at caption. Upon information and belief, Benchmark is Ouster's contract manufacturer involved in the manufacture, sale for importation, importation, and sale after importation of Ouster's rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same. For example, Benchmark states that when Ouster needed a partner to build its LiDAR sensors, "Benchmark worked hand-in-hand with Ouster to develop a reliable, scalable production process . . ." Ex. 25 at 1. Benchmark manufactures Ouster's OS LiDAR products and components at its facilities in Thailand. Ex. 16 at 3, 9, 22, 44, 46. Ouster has full time staff stationed at Benchmark's Thailand facilities "overseeing the whole operation", and the manufacturing tools used at those facilities are custom designed Ouster machinery owned by Ouster. Ex. 15 at 8; Ex. 18 at 6. According to Ouster's CEO, Angus Pacala, "we've outsourced all manufacturing to Benchmark Electronics Thailand." Ex. 15 at 7. For the year ended December 31, 2021, Benchmark's Thailand manufacturing facilities "accounted for a majority of [Ouster's] manufacturing output." Ex. 16 at 22. More specifically, Benchmark produced 67% of Ouster's manufacturing output in 2021. Ex. 26 at 12. Ouster expects Benchmark's Thailand manufacturing facilities "to be responsible for approximately 90% of [its] manufacturing requirements by 2022." Ex. 17 at 13.

IV. THE TECHNOLOGY AND PRODUCTS-AT-ISSUE

4.1 This Investigation relates generally to technologies for 3-D LiDAR devices. The Accused Products are Ouster's rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same (the "Accused Products") that use Velodyne's technologies without authorization, and which infringe the Asserted Patents.

4.2 Pursuant to 19 C.F.R. § 210.12(a)(12), the Accused Products fall into the categories of products that are generally known in plain English as: rotating 3-D LiDAR devices, components thereof (circuit boards with laser emitters and/or photosensitive detectors, a rotatable frame or structure for mounting such circuit boards, a motor for providing rotation for the laser emitters and photosensitive detectors, circuitry for controlling operation of the LiDAR, and an orientation detector for the LiDAR), and sensing systems with 3-D scanning capabilities containing the same (autonomous vehicles, advanced driver assistance systems (ADAS), robotics, industrial automation solutions, and intelligent infrastructure solutions—with 3-D scanning capabilities).

4.3 Section VIII, infra, identifies specific exemplary instances of unlawful importation, sale for importation, and sale of the Accused Products. Exemplary infringing products are Ouster's OS sensors, including Ouster's OS0 (including, without limitation, OS0-32, OS0-64, and OS0-128), OS1 (including, without limitation, OS1-32, OS1-64, and OS1-128), and OS2 (including, without limitation, OS2-32, OS2-64, and OS2-128) devices. Additional infringing products subject to the relief requested may be discovered as part of this Investigation, if instituted.

V. THE ASSERTED PATENTS AND NON-TECHNICAL DESCRIPTIONS OF THE INVENTIONS

5.1 Two patents are asserted in this Complaint, the '558 patent and the '297 patent. Certified copies of the '558 and '297 patents are attached to this Complaint as Exhibits 1 and 3.

A. U.S. Patent No. 7,969,558

1. Identification of the '558 Patent and Ownership by Velodyne

5.2 The '558 patent, entitled "High Definition LiDAR System," was filed on July 13, 2007. The '558 patent issued on June 28, 2011, naming as inventor David S. Hall (Velodyne founder and former CEO). Before filing the application that led to the '558 patent, Velodyne filed U.S. Provisional Patent Application No. 60/807,305 on July 13, 2006.

5.3 The ’558 patent expires on February 25, 2030.

5.4 The ’558 patent has two independent claims (claims 1 and 19) and twenty-three dependent claims. Velodyne asserts claims 1, 19 and dependent claims 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, and 25 in this Complaint.

5.5 Velodyne owns by assignment the entire right, title, and interest in and to the ’558 patent. *See* Ex. 2. U.S. Patent and Trademark Office certified copies of the recorded assignments for the ’558 patent are attached to this Complaint as Exhibit 2.

5.6 This Complaint is accompanied by (A) a certified copy of the prosecution history of the ’558 patent, and (B) a copy of each prior art reference cited on the face of the ’558 patent. *See* Appendices A and B.

2. Non-Technical Description of the Asserted ’558 Patent

5.7 The ’558 patent is generally directed to an improvement in pulsed LiDAR technology. The basic concept underlying LiDAR is similar to radar and sonar, except that LiDAR uses a pulse of light instead of microwaves or sound. LiDAR sensors determine the distance to an object by emitting a short pulse of laser light (through a lens) to the object, detecting the reflected pulse of light, and measuring the round trip time—*i.e.*, the time of flight.

5.8 The ‘558 patent claims a LiDAR system that rotates a plurality of laser emitters and avalanche photodiode detectors (“APDs”) to generate a dense 3-D point cloud. Using the rapidly rotating structure and angular orientation of the emitters claimed in the ’558 patent, pulses of laser light can be transmitted in many different directions in very short periods of time. The time it takes for the light to return to the APD is measured, thus creating data (called a “pixel”), which corresponds to the distance from the LiDAR sensor to the objects surrounding it.

5.9 When multiple pulses are emitted from a rotating sensor in varied directions and in rapid succession, many pixels can be collected extremely quickly, creating a “point cloud.” These

"point clouds" can then be rendered into "3-D point clouds," which are processed into images or analyzed by a computer to map the surrounding terrain and objects.

5.10 The United States Patent Trial and Appeal Board ("PTAB"), after instituting *inter partes* review ("IPR"), issued Final Written Decisions upholding all challenged claims of the '558 patent as patentable. The PTAB found that the '558 patent's "claimed invention was revelatory and not obvious." IPR20l8-00255, Final Written Decision, Paper 59 (P.T.A.B. May 23, 2019) at 28. The invention claimed in the '558 patent overcame the shortcomings of the prior art to permit safe and successful autonomous navigation. Using the particular configuration and orientation set forth in the '558 patent's claims, including a plurality of pulsing emitters and APDs rotated at a speed of at least 200 RPM, the claimed 3-D LiDAR system can generate highly accurate and extremely dense 3-D point clouds. The density of these point clouds can be used for high-speed autonomous navigation, to detect both positive and negative obstacles, and to provide a 360-degree field of view, all with high point cloud refresh rates—the foundation for safe and successful autonomous navigation. Put differently, as the PTAB found, the '558 patent's "claimed invention, as embodied in Velodyne's HDL-64E sensor, resolved a long-felt need for a lidar sensor that could capture distance points rapidly in all directions and produce a sufficiently dense 3-D point cloud for use in autonomous navigation." *Id*. at 34. The PTAB's Final Written Decisions were affirmed on appeal by the U.S. Court of Appeals for the Federal Circuit. *See Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406 (Fed. Cir. 2022).

3. Foreign Counterparts to the '558 Patent

5.11 A list of each foreign patent, each foreign patent application (not already issued as a patent), and each foreign patent application that has been denied, abandoned, or withdrawn corresponding to the '558 patent is attached as Exhibit 27.

B. U.S. Patent No. 9,983,297

1. Identification of the ’297 Patent and Ownership by Velodyne

5.12 The ’297 patent, entitled “LiDAR Based 3-D Imaging with Varying Illumination Field Density,” was filed on March 20, 2017. The ’297 patent issued on May 29, 2018, naming as inventors David S. Hall, Pieter J. Kerstens, Mathew Noel Rekow, and Stephen S. Nestinger. Before filing the application that led to the ’297 patent, Velodyne filed U.S. Provisional Patent Application No. 62/311,290 on March 21, 2016.

5.13 The ’297 patent expires on March 20, 2037.

5.14 The ’297 patent has three independent claims (claims 1, 12, and 16) and fourteen dependent claims. Velodyne asserts claims l, 12, and 16 and dependent claims 2, 7, 10, 11, 12, and 13 in this Complaint.

5.15 Velodyne owns by assignment the entire right, title, and interest in and to the ’297 patent. *See* Ex. 4. Patent and Trademark Office certified copies of the recorded assignments for the ’297 patent are attached to this Complaint as Exhibit 4.

5.16 This Complaint is accompanied by (A) a certified copy of the prosecution history of the ’297 patent, and (B) a copy of each prior art reference cited on the face of the ’297 patent. *See* Appendices C and D.

2. Non-Technical Description of the Asserted ’297 Patent

5.17 The ’297 patent is generally directed to varying the illumination for 3-D imaging in a pulsed LiDAR system. The LiDAR system has pulsed illumination sources and corresponding detectors. The LiDAR system can generate point cloud data that can be used to generate images of the surrounding environment. The pulsed illumination sources use power and generate heat.

5.18 By adjusting the amplitude and timing of a current signal coupled to light emitting (i.e., illumination) sources, the LiDAR system can achieve, for example, improved power

efficiency by reducing total energy consumption and heat generation. The adjustment is based on the orientation of a rotating frame having the light emission sources with respect to a base frame.

5.19 The ’297 patent describes a LiDAR device that includes a plurality of illumination sources and a plurality of light detection sensors mounted on a rotating platform. Illumination sources rotate about a central axis and project beams of light into the surrounding environment, illuminating a volume of that environment. A distance can be determined between the LIDAR device and an object in a 3-D environment based on the difference in time when a pulse of light is emitted from an illumination source and a time when a corresponding photosensitive detector detects an amount of light from the 3-D environment illuminated by the pulse of illumination light. The LiDAR device adjusts the illumination sources based on the orientation of the rotating platform.

3. Foreign Counterparts to the ’297 Patent

5.20 A list of each foreign patent, each foreign patent application (not already issued as a patent), and each foreign patent application that has been denied, abandoned, or withdrawn corresponding to the ’297 patent is attached as Exhibit 28.

VI. LICENSES

6.1 Pursuant to Commission Rule 2l0.l2(a)(9)(iii), Velodyne identifies the licensed entities for the Asserted Patents in **Confidential** Exhibit 29 to this Complaint. There are no other licensed entities to the Asserted Patents other than those identified in **Confidential** Exhibit 29. Neither Respondent is licensed.

VII. UNLAWFUL AND UNFAIR ACTS OF RESPONDENTS – PATENT INFRINGEMENT

7.1 The Accused Products are rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same.

7.2 In particular, the Accused Products include Ouster's OS sensors, such as Ouster's OS0 (including, without limitation, OS0-32, OS0-64, and OS0-128), OS1 (including, without limitation, OS1-32, OS1-64, and OS1-128), and OS2 (including, without limitation, OS2-32, OS2-64, and OS2-128) devices, and other rotating 3-D LiDAR devices. The Accused Products are manufactured (in whole or in substantial part) for Ouster by Benchmark in Thailand.

7.3 Respondents sell for importation, import, and/or sell after importation these infringing Accused Products.

7.4 Velodyne believes that the exemplary OS0, OS1, and OS2 Accused Products are representative of other rotating 3-D LiDAR devices imported, sold for importation, and/or sold in the United States after importation by Respondents that feature the same or substantially similar infringing functionality as the exemplary Accused Products. Accordingly, on information and belief, Velodyne alleges that other rotating 3-D LiDAR products infringe the Asserted Patents and have been and are being imported, sold for importation, and/or sold in the United States after importation by or on behalf of Respondents. Velodyne has not yet had the benefit of discovery, and thus this identification of specific models or types of products is not intended to limit the scope of the Investigation. Any remedy should extend to all infringing Ouster products.

7.5 On information and belief, the Accused Products infringe independent claims 1,19 and dependent claims 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, and 25 of the '558 patent.

7.6 A chart that applies independent claims 1 and 19 of the '558 patent to an exemplary Accused Product is attached to the Complaint as **Confidential** Exhibit 30.

7.7 On information and belief, the Accused Products infringe independent claims 1, 12, and 16 and dependent claims 2, 7, 10, 11, 12, and 13 of the '297 patent.

7.8 A chart that applies independent claims 1, 12, and 16 of the '297 patent to an exemplary Accused Product is attached to the Complaint as **Confidential** Exhibit 41.

7.9 Respondents infringe the Asserted Patents both directly, literally or under the doctrine of equivalents, and indirectly. Respondents directly infringe the Asserted Patents by making, using, offering to sell, or selling the Accused Products in the United States and by importing the Accused Products into the United States in violation of 35 U.S.C. § 271(a).

7.10 On information and belief, Respondents also actively, knowingly, and intentionally induce infringement of the Asserted Patents under 35 U.S.C. § 271(b) by actively encouraging others to make, use, offer to sell, sell, and/or import the Accused Products in the United States. Ouster—and, in particular, Ouster's co-founders Angus Pacala (CEO) and Mark Frichtl (CTO)—knew of and studied Velodyne's patented technology and products before it incorporated that technology into its own products, the first of which, the OS1, was released in December 2017. Ex. 19 at 2. (Ouster blog announcing OS1 Dec. 2017 release). For example, Ouster's US Patent No. 10,063,849, filed January 3, 2018, lists as inventors both Pacala and Frichtl, and claims priority to a provisional application filed September 24, 2015. This Ouster patent acknowledges Velodyne's '558 patent in its background section as "the fundamental technology" behind 3-D rotational LiDAR sensors; cites as prior art the '558 patent, the published application (US 2017/0269198A1) that became the '297 patent, and numerous Velodyne data sheets, user's manuals, and website pages about Velodyne's HDL-32, HDL-64, and VLP-16 rotational LiDAR products; and extensively discusses Velodyne's HDL-32 and HDL-64 products. Ex. 20 at col. 1, ll. 41-67, col. 2, ll. 1-8, pp. 2-3. Ouster therefore had actual knowledge of the Asserted Patents long before the filing of this Complaint, and at least as early as Ouster's initial product release. Respondents also had actual knowledge of the Asserted Patents at least as of June 14, 2022, when Velodyne filed a Complaint asserting the Asserted Patents against Ouster in the United States District Court for the

Northern District of California, and concurrently notified Benchmark of that Complaint and its allegations of infringement of the Asserted Patents. Further, Velodyne publicly identifies its products as incorporating the inventions claimed in the Asserted Patents and has marked its products accordingly. And Respondents actively promote the sale, use, and importation of Ouster's infringing rotating 3-D LiDAR devices in marketing materials, technical specifications, data sheets, web pages on their websites, press releases, and user manuals, as well as at trade shows and through their sales and distribution channels that encourage infringing sales, offers to sell, and importation of the Accused Products. *See*, *e.g.*, Ex. 19; Ex. 23; Ex. 25; Ex. 31; Ex. 32, Ex. 33; Ex. 35; Ex. 42; Ex. 44; Ex. 45; Ex. 46. By these actions, Respondents have had the specific intent to induce, or were willfully blind to inducing infringement of the Asserted Patents.

7.11 On information and belief, Respondents also contribute to infringement of the Asserted Patents by others, including purchasers who deploy the Accused Products with their autonomous vehicles, by providing the Accused Products, which are specially made or adapted for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use. As discussed above, Respondents have had actual knowledge of the Asserted Patents. *See supra* ¶ 7.10.

VIII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

8.1 Respondents are importing, selling for importation, and/or selling within the United States after importation, rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same. The specific evidence set forth below is representative of Respondents' unlawful importation, sale for importation, and/or sales within the United States after importation of infringing products. This evidence is not intended to limit the scope of the investigation.

Velodyne anticipates that discovery will produce evidence of other unlawful and unfair acts in violation of Section 337.

8.2 Ouster's OS LiDAR devices, including its OS0, OS1 and OS2 devices, are manufactured (in whole or in substantial part) at Benchmark's facilities in Thailand. Ex. 16 at 3, 44 ("Benchmark manufactures our products at its facility in Thailand, which we expect will reduce product costs and allow us to rapidly scale production to meet our anticipated product demand"); Ex. 18 at 6 (regarding Benchmark's Thailand manufacturing for Ouster, "it's all OS series"). Pursuant to Ouster's contract with Benchmark, Benchmark is to provide manufacturing services for Ouster's LiDAR sensors "including procuring materials and assembling and testing finished products." Ex. 16 at 12. Ouster has full time staff stationed at Benchmark's Thailand facilities "overseeing the whole operation", and the manufacturing tools used at those facilities are custom designed Ouster machinery owned by Ouster, shipped to Thailand, and operated by Benchmark in Thailand. Ex. 15 at 8; Ex. 18 at 6.

8.3 According to Ouster's CEO, Angus Pacala, "we've outsourced all manufacturing to Benchmark Electronics Thailand." Ex. 15 at 7. For the year ended December 31, 2021, Benchmark's Thailand manufacturing facilities "accounted for a majority of [Ouster's] manufacturing output." Ex. 16 at 22. More specifically, Benchmark produced 67% of Ouster's manufacturing output in 2021. Ex. 26 at 12. Ouster expects Benchmark's Thailand manufacturing facilities "to be responsible for approximately 90% of [its] manufacturing requirements by 2022." Ex. 16 at 13.

8.4 Ouster offers for sale on its website only the accused OS products (including the OS0, OS1 and OS2 products), Ex. 46, and only the accused OS products are in commercial manufacturing production. Ex. 16 at 5, 7, 44. Thus, all of Ouster's product sales figures are for OS products. Although Ouster claims to distribute its OS LiDAR products globally, the United

States is its largest single market, accounting for approximately 44% of Ouster's total revenue. *Id.* at 52. It therefore follows as a mathematical necessity that if 67% of Ouster's OS manufacturing output in 2021 was in Thailand and up to 90% of Ouster's OS manufacturing output in 2022 is in Thailand, Respondents have actually imported and will imminently import Ouster's OS sensors into the United States in order to fulfill publicized and unpublicized sales to U.S. customers.[3]

8.5 Ouster's own press releases identify numerous specific instances of actual, contracted-for sales, including references to specific agreements, of its OS products for delivery in the United States. As explained above, it is mathematically necessary that at least some of the products sold for delivery in the United States must have been and/or must be imported. Ouster itself has publicly announced a number of its sensor sales to U.S. customers. For example, in a January 11, 2022 press release, Ouster announced an agreement with U.S.-based Vecna Robotics that includes a commitment to purchase approximately 3000 units of Ouster's OS0 product. Ex. 47 at 1 ("'We completed an exhaustive evaluation of all 3D lidar sensors on the market and found the Ouster OS0 to be our strong favorite,' said Zachary Dydek, Chief Technology Officer at Vecna Robotics.") In a November 2021 press release, Ouster announced an agreement with U.S.-based Local Motors that includes a "binding commitment for over one thousand OS digital lidar sensors through 2023." Ex. 48 at 1. While Local Motors ceased operations in January 2022 (Ex. 49), and

[3] That is, in 2021, since 67% of Ouster's manufacturing output was in Thailand, then at most, 33% of Ouster's manufacturing output was in the United States. Since, as noted, 44% of Ouster's global sales are due to sales in the United States, and only (at most) 33% of Ouster's manufacturing occurred in the United States, then ***at least*** 11% of Ouster's 2021 total sales ***must*** have been Thailand-manufactured products imported into the United States; put another way, ***at least*** 25% (i.e., 11%/44%) of Ouster's 2021 U.S. sales must have been manufactured in Thailand. In 2022, if 90% of Ouster's manufacturing occurs in Thailand, then only 10% of Ouster's manufacturing could occur in the United States. Applying the same 44% figure for sales in the U.S., then ***at least*** 34% of Ouster's 2022 total sales ***must*** be fulfilled by importations into the U.S. of units manufactured in Thailand; again, put another way, ***at least*** 77% (i.e., 34%/44%) of Ouster's 2022 U.S. sales must have been manufactured in Thailand.

its assets were auctioned in March 2022 (Ex. 50), the auctioned assets show that a number of Ouster OS sensors, including OS0, OS1 and OS2, had been delivered to Local Motors, and a number of the Ouster sensors offered for auction are marked "NEW IN BOX." *Id.* (auction lots of Ouster OS0 sensors). In an October 2021 press release, Ouster announced an agreement with U.S.-based Perrone Robotics that includes a "binding commitment for hundreds of sensors through 2023," including numerous deployments in the United States. Ex. 51 at 1. In a January 2022 press release, Ouster announced an agreement with U.S.-based Serve Robotics that includes a "binding commitment for OS digital lidar sensors through 2023, along with a non-binding forecast for additional sensors through 2025 as Serve Robotics scales its delivery fleets across U.S. cities and beyond." Ex. 52 at 1. In a March 2022 press release, Ouster announced an agreement with U.S.-based Third Wave Automation that "includes a forecast for over five thousand OS sensors through 2025." Ex. 53 at 1. In view of Ouster's disclosures of aggregate data concerning the place of manufacture of its sensors and the proportion of its global sales that occur in the U.S., it is mathematically necessary that fulfillment of these specific contracts for sale must involve importation into the U.S. of the accused OS sensors from its manufacturing facility in Thailand. These reported sales therefore constitute acts of importation, sales (including sales for importation and/or sales after importation), and/or imminent acts of importation.

8.6 Ouster has displayed its OS sensors at trade shows in the United States. Ex. 45 at 1-4. For example, at CES 2022 in Las Vegas in January 2022, Ouster displayed its products, including OS2, OS1 and OS0, as shown in the photograph below from Ouster's blog. *Id.*

Additionally, Ouster customer Vecna Robotics displayed one of its robotic autonomous warehouse vehicles with the Ouster OS sensor installed, as shown in the photograph below, also from Ouster's blog (the Ouster sensor is just above the two blue lights in the center of the green Vecna product). *Id.*


OUSTER
VEENA

8.7 Below are photographs of an Ouster OS0-64 sensor that was ordered through Ouster's United States distributor, Dataspeed, Inc., and delivered in California on June 13, 2022. *See* Ex. 68. Neither the device nor the packaging are marked with the country of origin of the device. *See id*.

8.8 In view of the data concerning foreign manufacture, as well as Ouster's actual, announced sales, for past and future delivery, above, it is highly likely that one or more of the OS sensors displayed at CES 2022 in Las Vegas and/or the sensor delivered in California on June 13, 2022 was imported from Benchmark's Thailand facility.

8.9 On information and belief, Respondents' OS sensor importations occur via air freight. As such, the customs and importation records are not publicly available. *Panjiva, Inc. v. U.S. Customs and Border Protection*, 975 F.3d 171, 182 (2d Cir. 2020). On information and belief, Ouster's OS sensor devices are not marked with the country of origin. Ex. 34 at 1, 11-14; Ex. 68.

8.10 Since most or all of the Ouster LiDAR products are manufactured outside of the United States, most or all of the Accused Products in the United States result from specific

instances where Respondents have imported, sold for importation, and/or have sold within the United States after importation infringing products.

IX. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

9.1 On information and belief, the Harmonized Tariff Schedule of the United States item numbers under which the infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same may be imported into the United States may be at least 8526.10.00, 8526.91.00, 8529.90.13, 8529.90.16, 8529.90.19, 8529.90.21, 8534.00.00, 8541.49.95, 8543.90.88, 9002.19.00, 9002.20.80, 9013.10.30, 9013.80.91, 9013.90.70, 9013.90.80, 9014.10.10, 9014.10.90, 9014.20.20, 9014.20.40, 9014.20.60, 9014.20.80, 9014.80.10, 9014.80.40, 9014.90.60, 9015.10.40, 9015.10.80, 9015.40.40, 9015.40.80, 9015.80.20, 9015.80.80, 9015.90.01, 9031.49.90, 9031.90.91, 9033.00.90. These classifications are intended for illustration only and are not intended to be restrictive of the Accused Products or of products subject to the relief requested.

X. THE DOMESTIC INDUSTRY

10.1 In accordance with Section 337(a)(2) and (a)(3), a domestic industry exists in the United States in connection with each of the Asserted Patents.

10.2 A domestic industry under subparts (A), (B), and/or (C) of Section 337(a)(3) exists by virtue of Velodyne's activities within the United States, including by virtue of its significant investment in plant and equipment; significant employment of labor or capital; and/or its substantial investment in engineering, research and development.

A. The Technical Prong of the Domestic Industry Requirement Is Satisfied

10.3 Claim charts and explanatory information for exemplary products and processes that currently practice at least one exemplary claim of each Asserted Patent accompany this Complaint.

10.4 Velodyne has developed and currently sells four rotating mechanical LiDAR product families: VLP-16 (including the Puck, Puck LITE, and Puck Hi-Res sensors), VLP-32C (including the Ultra Puck sensor), HDL-32E, and VLS-128 (including the Alpha Prime sensor, f/k/a Alpha Puck).[4] Each of the products within the VLP-16, VLP-32C, HDL-32E, and VLS-128 product families (collectively, the "Velodyne Domestic Industry Products") practices at least one claim of the '558 patent. Each of (i) the VLP-32C products, and (ii) the VLS-128 products manufactured from 2019 through the present, practices at least one claim of the '297 patent.

10.5 **Confidential** Exhibit 54 is a claim chart showing how an exemplary product, Velodyne's VLP-16 3-D LiDAR device, practices at least one claim of the '558 patent.

10.6 **Confidential** Exhibit 59 is a claim chart showing how an exemplary product, Velodyne's VLP-32C 3-D LiDAR device, practices at least one claim of the '297 patent.

B. The Economic Prong of the Domestic Industry Requirement Is Satisfied

'558 Patent

10.7 Velodyne has made and continues to make (a) significant investment in plant and equipment; (b) significant investment in labor or capital; and/or (c) substantial investment in engineering, research and development of articles protected by the '558 patent. *See, e.g.*, **Confidential** Ex. 67. Discovery will show that the domestic industry requirements of

[4] Velodyne's HDL-64 rotational LiDAR product is no longer sold.

subparagraphs 337(a)(3)(A), 337(a)(3)(B), and 337(a)(3)(C) are each independently satisfied by Velodyne's domestic activities and investments.

10.8 There is a domestic industry as defined under Subsection (A) at least because Velodyne has made significant investments in plant and equipment in the United States with respect to the Velodyne Domestic Industry Products.

10.9 As explained above, Velodyne is a Delaware corporation with its executive offices in San Jose, CA.

10.10 Velodyne leases two domestic facilities in the United States. The locations are its headquarters in San Jose, California (the "San Jose facility"); and 1001 Marina Village Parkway, Alameda, California 94501 (the "Alameda facility").

10.11 Some or all manufacturing, which includes prototypes, piloting, materials, tooling, production, assembly, testing, calibration, alignment, quality control, packaging, distribution, and repair (referred to collectively as "manufacturing"), for Velodyne's VLS-128, VLP-32C, and HDL-32E products is currently carried out in the San Jose facility.

10.12 Research and development, including engineering, design, consulting, materials, development, prototyping and product qualification and validation (referred to collectively as "research and development" or "R&D"), for all of the Velodyne Domestic Industry Products is currently carried out in the San Jose and Alameda facilities. Nearly all of the R&D for the Velodyne Domestic Industry Products has occurred in the United States.

10.13 Sales, including customer support, marketing, and product marketing (referred to collectively as "sales and support") for the Velodyne Domestic Industry Products are currently carried out in the San Jose facility. These services include providing support for returns, repairs, technical support, simulations, and market segment analysis that informs R&D spending.

10.14 Velodyne (including its predecessor entities) has been developing products in the United States since 2007. As of the end of 2021 Velodyne had, and continues to have, hundreds of employees in the United States who are involved in manufacturing, sales and support, and R&D for Velodyne Domestic Industry Products. *Id.* at 3.

10.15 Since opening the San Jose facility in 2017, Velodyne has invested several million dollars in building capital at the San Jose facility. *See id*. at 1. The San Jose facility includes at least tens of thousands of square feet of manufacturing space, R&D space, and sales and marketing space, for manufacturing, developing, and improving the Velodyne Domestic Industry Products. *See id*. As of the end of 2021, Velodyne's property, plant, and equipment value at the San Jose facility was several million dollars. *Id*. Velodyne leases the San Jose facility, paying several hundred thousand dollars in rent in 2021 for space allocable to the Velodyne Domestic Industry Products. *Id*.

10.16 Since opening an Alameda facility in 2016, Velodyne has invested several million dollars in building capital at the Alameda facility. *See id*. Velodyne leases the Alameda facility, paying several hundred thousand dollars in rent in 2021 for space allocable to the Velodyne Domestic Industry Products. *Id*. The Alameda facility includes at least thousands of square feet of engineering R&D space for improving products and developing new products that utilize the technology claimed in the '558 Patent. *See id*.

10.17 There is a domestic industry as defined under Subsection (B) at least because Velodyne has made significant investments in the employment of labor and capital in the United States with respect to the Velodyne Domestic Industry Products. Velodyne employs hundreds of employees in the United States, including employees who manufacture some of the Velodyne Domestic Industry Products, R&D employees who spend at least a portion of their time relating to R&D associated with the Velodyne Domestic Industry Products, and sales and support employees

who spend at least some portion of their time in sales and support activities associated with the Velodyne Domestic Industry Products. *See id*. at 3. In 2021, at least tens of millions of dollars were spent on salaries, compensation, training, and other employment-related expenditures for the above-referenced employees. *Id*.

10.18 There is also a domestic industry as defined under Subsection (C) at least because Velodyne has made substantial U.S. investments in the exploitation of the inventions of the '558 patent by way of steadily and substantially investing in engineering, research and development.

10.19 Such research and development activities are aimed at improving existing products, and developing and bringing new products to market that utilize the technology of the '558 patent. In recent years, Velodyne has made substantial investments in its R&D to improve and develop products that utilize the technology of the '558 patent. *See, e.g., id*. at 4. Velodyne's investments also include salary and other compensation and benefits of the R&D personnel, as well as their training, and facilities expenditures. *See, e.g., id*. at 3, 4.

'297 Patent

10.20 As mentioned above, two of the Velodyne Domestic Industry Products: (i) the VLP-32C products, and (ii) the VLS-128 products manufactured from 2019 through the present, practice at least one claim of the '297 patent.

10.21 Velodyne has made and continues to make (a) significant investment in plant and equipment; (b) significant investment in labor or capital; and/or (c) substantial investment in engineering, research and development activities related to the '297 patent. Discovery will show that the domestic industry requirements of subparagraphs 337(a)(3)(A), 337(a)(3)(B), and 337(a)(3)(C) are each independently satisfied by Velodyne's domestic activities and investments as to the '297 patent.

10.22 There is a domestic industry as defined under Subsection (A) at least because Velodyne has made significant investments in plant and equipment in the United States with respect to the VLP-32C and VLS-128 products. *Id*. at 1.

10.23 The San Jose facility includes at least thousands of square feet of manufacturing space, R&D space, and sales and marketing space, for manufacturing, developing, and improving the VLP-32C and VLS-128 products. *See id*. As of the end of 2021, Velodyne's property, plant, and equipment value at the San Jose facility was several million dollars. *Id*. Velodyne leases the San Jose facility, paying several hundred thousand dollars in rent in 2021. *Id*.

10.24 The Alameda facility includes at least thousands of square feet of engineering R&D space for improving products and developing new products that utilize the technology claimed in the '297 patent. *See id*. Velodyne leases the Alameda facility, paying several hundred thousand dollars in rent in 2021. *Id*.

10.25 The VLP-32C and VLS-128 products account for a significant amount of U.S. sales, and thus a significant amount of manufacturing, R&D, and sales and marketing related plant and equipment expenditures, in 2019, 2020, and 2021. *See id*. Further, because the '297 patent claims a pulsed LiDAR device and improvements thereto, the R&D related plant and equipment expenditures for all of Velodyne's pulsed 3-D LiDAR devices (*i.e*., the Velodyne Domestic Industry Products) in 2019, 2020, and 2021, support the VLP-32C and VLS-128 products. *Id*.

10.26 There is a domestic industry as defined under Subsection (B) at least because Velodyne has made significant investments in the employment of labor and capital in the United States with respect to the VLP-32C and the VLS-128 products. Velodyne employs hundreds of employees in the United States, including employees who engage in manufacturing activities for the VLP-32C and VLS-128 products, R&D employees who spend at least a portion of their time on R&D related to the VLP-32C and VLS-128 products and technology related to the '297 patent,

and sales and support employees who spend at least some portion of their time in sales and support activities associated with the VLP-32C and VLS-128 products. *See id*. at 3. In 2021, at least millions of dollars were spent on wages for the above-referenced employees. *Id*.

10.27 The VLP-32C and VLS-128 products account for a significant amount of U.S. sales, and thus a significant amount of manufacturing, R&D, and sales and marketing related labor and capital expenditures, in 2019, 2020, and 2021. *See id*. Further, because the '297 patent claims a pulsed LiDAR device and improvements thereto, the R&D related labor and capital expenditures for all of Velodyne's pulsed 3-D LiDAR devices (*i.e*., the Velodyne Domestic Industry Products) in 2019, 2020, and 2021, support the VLP-32C and VLS-128 products. *Id*.

10.28 There is also a domestic industry as defined under Subsection (C) at least because Velodyne has made substantial U.S. investments in the exploitation of the inventions of the '297 patent by way of steadily and substantially investing in engineering, and research and development.

10.29 Such R&D activities are aimed at improving existing products, and developing and bringing new products to market that utilize the technology of the '297 patent. The '297 patent claims cover a pulsed LiDAR device and improvements thereto. In recent years, Velodyne has made substantial investments in its R&D to develop 3-D LiDAR technology. *See, e.g., id*. at 4. Velodyne's investments also include salary and other compensation and benefits of the R&D personnel, as well as their training, and facilities expenditures. *See, e.g*., *id*. at 3, 4. Because the '297 patent claims a pulsed LiDAR device and improvements thereto, the R&D expenditures for all of Velodyne's pulsed 3-D LiDAR devices (*i.e*., the Velodyne Domestic Industry Products) in 2019, 2020, and 2021, support the VLP-32C and VLS-128 products. *Id*.

XI. RELATED LITIGATION

11.1 On September 13, 2016, Quanergy Systems, Inc. ("Quanergy") filed a Declaratory Judgment Complaint in the United States District Court for the Northern District of California. Quanergy amended its Complaint on November 18, 2016. On December 5, 2016, Velodyne filed a counterclaim for infringement of the '558 patent. The litigation was stayed on January 11, 2018, pending resolution of *Inter Partes* Review proceedings before the PTAB. The stay was lifted on February 18, 2022. The litigation is currently pending as *Quanergy Systems, Inc. v. Velodyne LiDAR, Inc.*, Case No. 5:16-cv-05251-EJD (N.D. Cal. Sept. 13, 2016).

11.2 On November 29, 2017, Quanergy filed two petitions for *Inter Partes* Review of the '558 patent before the PTAB at the United States Patent and Trademark Office. The case numbers assigned to these two petitions are: IPR2018-00255 and IPR2018-00256. The PTAB instituted review for both petitions on May 25, 2018. On May 23, 2019, the PTAB issued two Final Written Decisions upholding all challenged claims of the '558 patent as patentable. The PTAB's Final Written Decisions were affirmed on appeal by the U.S. Court of Appeals for the Federal Circuit. *See Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406 (Fed. Cir. 2022).

11.3 On August 13, 2019, Velodyne filed complaints in the United States District Court for the Northern District of California against Hesai Photonics Technology Co., Ltd and Suteng Innovation Technology Co., Ltd. (a.k.a. Robosense) for infringement of the '558 patent. *See Velodyne Lidar, Inc. v. Hesai Photonics Technology Co., Ltd.*, No. 5:19-cv-04742-EJD (N.D. Cal. Aug. 13, 2019); *Velodyne Lidar, Inc. v. Suteng Innovation Technology Co., Ltd. (a.k.a. Robosense)*, No. 5:19-cv-04746-EJD (N.D. Cal. Aug. 13, 2019). On August 15, 2019, Velodyne filed a complaint before the U.S. International Trade Commission, naming Hesai Photonics Technology Co., Ltd and Suteng Innovation Technology Co., Ltd. (a.k.a. Robosense) as

Respondents, for infringement of the '558 patent. *Certain Rotating 3-D LiDAR Devices, Components Thereof, and Sensing Systems Containing the Same*, Inv. No. 337-TA-1173. The ITC investigation was instituted on September 11, 2019. The two district court cases were stayed pending resolution of Velodyne's ITC proceeding. The ITC investigation was terminated with respect to Respondent Hesai in July 2020 based on settlement, and the district court case against Hesai was dismissed contemporaneously. The ITC investigation was terminated with respect to Respondent Suteng in October 2020 based on settlement, and the district court case against Suteng was dismissed contemporaneously.

11.4 On June 14, 2022, Velodyne filed a Complaint in the United States District Court for the Northern District of California against Ouster for infringement of the '558 and '297 patents. *See Velodyne Lidar USA, Inc. v. Ouster, Inc.*, No. 4:22-cv-03490-DMR (N.D. Cal. June 14, 2022).

11.5 Other than those described above, Velodyne is not currently aware of any other litigations related to the Asserted Patents.

XII. RELIEF REQUESTED

12.1 WHEREFORE, by reason of the foregoing, Complainant respectfully requests that the U.S. International Trade Commission:

a. Institute an immediate Investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (b)(1) with respect to violations of Section 337 based upon the importation, sale for importation, and sale after importation into the United States by the proposed Respondents of infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same that infringe one or more of the asserted claims of each Asserted Patent.

b. Find a violation of Section 337 based on said unlawful acts;

c. Issue a permanent limited exclusion order under 19 U.S.C. § 1337(d)(l) barring from entry into the United States all infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same manufactured by or on behalf of, or imported by or on behalf of, each of the Respondents or their affiliates;

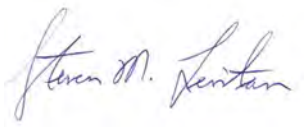
d. Issue permanent cease and desist orders, under 19 U.S.C. § 1337(f), directing each Respondent to cease and desist from the sale for importation, importation, sale after importation, distribution, offering for sale, promoting, marketing, advertising, testing, demonstrating, warehousing inventory for distribution, solicitation of sales, programming, repairing, maintaining, using, transferring, and other commercial activity relating to infringing rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same;

e. Impose a bond, pursuant to l9 U.S.C. § 1337(j), upon importation of any rotating 3-D LiDAR devices, components thereof, and sensing systems containing the same that infringe one or more of the asserted claims of each Asserted Patent during any Presidential Review; and

f. Grant such other and further relief as the Commission deems just and proper based on the facts determined by the Investigation and the authority of the Commission.

Dated: June 15, 2022

Respectfully Submitted,



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Counsel for Complainant Velodyne Lidar USA, Inc.

VERIFICATION OF THE COMPLAINT

I, Dan Horwood, declare in accordance with 19 C.F.R. §§ 210.4 and 210.12(a), under penalty of perjury, that the following statements are true:

1. I am General Counsel and Corporate Secretary at Velodyne Lidar USA, Inc. ("Velodyne"), and I am duly authorized to verify this Complaint of Velodyne under Section 337 of the Tariff Act of 1930, as Amended ("Complaint").

2. I have read the Complaint, and I am aware of its contents.

3. To the best of my knowledge, information, and belief, formed after an inquiry reasonable under the circumstances, (a) the claims and other legal contentions in the Complaint are warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law, and (b) the allegations and other factual contentions in the Complaint have evidentiary support or, if specifically so identified, are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.

4. The Complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the investigation or a related proceeding.

I declare under penalty of perjury under the law of the United States that the foregoing is true and correct. Executed on June 14, 2022.

Dan Horwood