IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

OUSTER, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. _____
	)	
HESAI GROUP and HESAI TECHNOLOGY CO., LTD.,	)	**DEMAND FOR JURY TRIAL**
	)	
	)	
Defendants.	)	

COMPLAINT FOR PATENT INFRINGEMENT

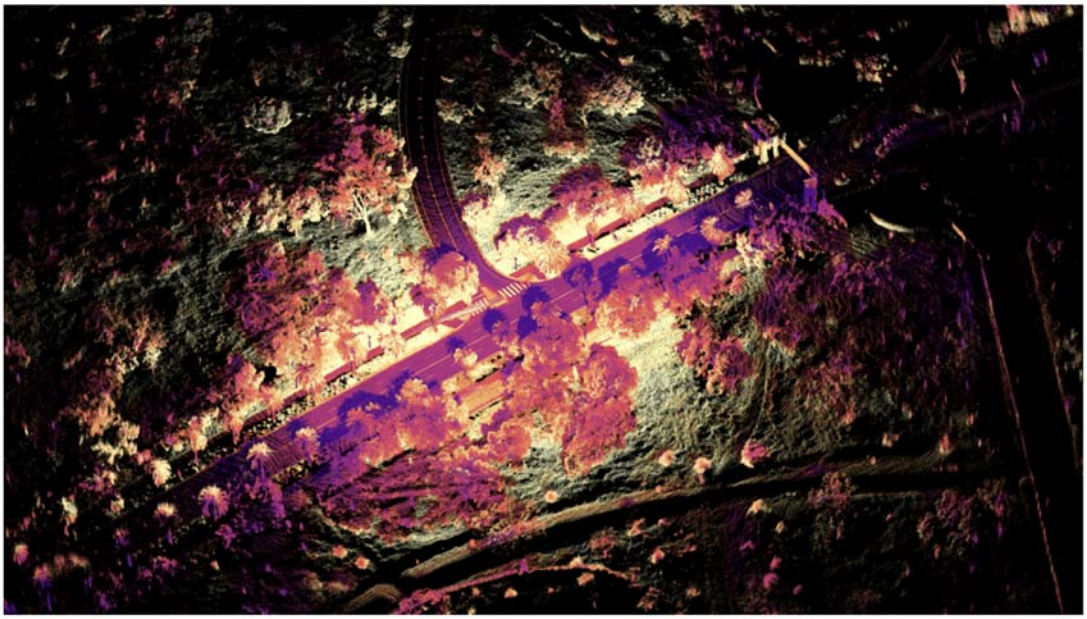
Ouster, Inc. ("Ouster" or "Plaintiff") files this complaint for patent infringement against Defendants Hesai Group ("Hesai Group") and Hesai Technology Co., Ltd. ("Shanghai Hesai") (collectively "Hesai" or "Defendants") and, in support thereof, alleges as follows:

NATURE OF THE ACTION

1. This is a civil action for patent infringement under the patent laws of the United States, Title 35, United States Code, Sections 100 *et seq*. Hesai has infringed and/or will continue to infringe, contribute to the infringement of, and/or actively induce others to infringe Ouster's U.S. Patent No. 11,175,405, U.S. Patent No. 11,178,381, U.S. Patent No. 11,190,750, U.S. Patent No. 11,287,515, and U.S. Patent No. 11,422,236 (the "Asserted Patents").

2. Ouster is a pioneer and market leader in the digital LiDAR industry providing powerful and cost-effective digital LiDAR remote sensing solutions. Ouster's LiDAR provides real time "camera like" mapping of the external environment flexible enough to serve a wide variety of automotive, industrial, smart infrastructure, and robotics applications. The aerial picture of a traffic intersection set forth below is an example of the types of images produced by Ouster's

patented LiDAR sensors, which use a unique and patented combination of laser and receptor technology.



SLAM captured with REV7 OS2 - Palm Drive, Stanford University

3. Formed in San Francisco by two former Stanford engineering students, Ouster set out in an entirely different direction from the then fledgling LiDAR industry. At the time, the LiDAR industry relied on slow, analog sensors that were low resolution, costly, and difficult to manufacture. Ouster's goal was to produce a LiDAR system that would be cost effective, high resolution, and ubiquitous in the industry. After years of research at its San Francisco headquarters, Ouster created a revolutionary LiDAR system that transformed LiDAR from an analog device with thousands of components to an elegant digital device powered by one chip-scale laser array and one CMOS sensor. The result of this system is a full range of high-resolution LiDAR sensors that create first-of-their-kind "camera like" images at a dramatically lower price and with a simplified manufacturing process.

4. Ouster was able to achieve this remarkable success by leveraging a unique laser-detector combination that the industry viewed as impossible: employing vertical cavity surface emitting lasers (VCSELs) for emitters and single photon avalanche diodes (SPADs) as receptors. After years of development, Ouster was able to solve the complex technical issues of using VCSELs and SPADs utilizing a simplified architecture based on two silicon chips allowing for more emitters and receptors in the product and resulting in a digital sensor with higher resolution. The digital architecture also greatly increased scalability, allowing Ouster to continually take advantage of ongoing advancements in semiconductor processing technology, often referred to as Moore's Law, to deliver cheaper and higher performing products. While analog LiDAR companies undertook engineering efforts to produce next generation products, Ouster's technology transformed the industry by allowing the integration of new chip sets to the same hardware platform resulting in both higher performance and lower costs. The industry has lauded Ouster's innovation with the Consumer Electronic Show recently honoring Ouster with its prestigious Innovation Award three separate years.

5. Ouster's revolutionary LiDAR enables highly precise 3D mapping, localization, navigation, and object detection within a given environment and is applied broadly across the automotive, industrial, robotics and smart infrastructure industries. LiDAR is now a key perception sensor, alongside cameras and radar, for automation and monitoring applications and is quickly replacing traditional cameras and radar in many industries. Not surprisingly, LiDAR in general and particularly Ouster's proprietary technology has become fundamental to many critical U.S. industries.

6. While the technology is rapidly proliferating – and delivering improved safety, productivity and efficiency across the global supply chain, transportation ecosystem and beyond – LiDAR is still an emerging technology in a highly competitive industry, both within the U.S. and abroad. This new industry now faces greatly increased security risks across the globe raising the importance of the enforcement and protection of intellectual property rights as companies such as Hesai seek to gain an unfair advantage by copying the advances of other companies like Ouster.

7. Ouster now employs nearly 200 people in the United States, and in the past two years alone, spent nearly $100 million in research and development. Ouster has also invested heavily in its patent portfolio since its inception to protect its industry leading technology. Ouster's technology is backed by a comprehensive suite of patent protection, which includes the Asserted Patents.

8. Now, Ouster and its customers are threatened because Hesai took Ouster's revolutionary patented technologies and incorporated them into Hesai's competing products. Unfortunately, Hesai has a history of taking American companies' technology, having been the subject of a recent International Trade Commission ("ITC") case brought by Velodyne Lidar in 2019 based on Hesai's copying of Velodyne's analog patented technology that resulted in a settlement for Velodyne.

9. When the market then followed Ouster's lead toward digital LiDAR, Hesai has taken and continues to incorporate Ouster's technology into their products, barely skipping a beat. Hesai now uses and highlights its unique use of VCSELs and SPADs ("SiPM, a receiver combining signals from multiple single photon avalanche diodes, or SPADs"), the very technology Ouster pioneered:

Our current TX/RX system integrates laser emitters, receivers, and ASICs. The TX includes dense vertical cavity surface emitting lasers (VCSEL) arrays as emitters and ASICs that drive these laser emitters. The RX includes silicon photomultiplier (SiPM, a receiver combining signals from multiple single photon avalanche diodes, or SPADs) arrays and ASICs that perform as the switch and processor for all the laser receivers. The picture below shows our TX/RX system with laser emitters, receivers, and ASICs on our 128-channel LiDAR.

Hesai's 128-channel TX/RX System

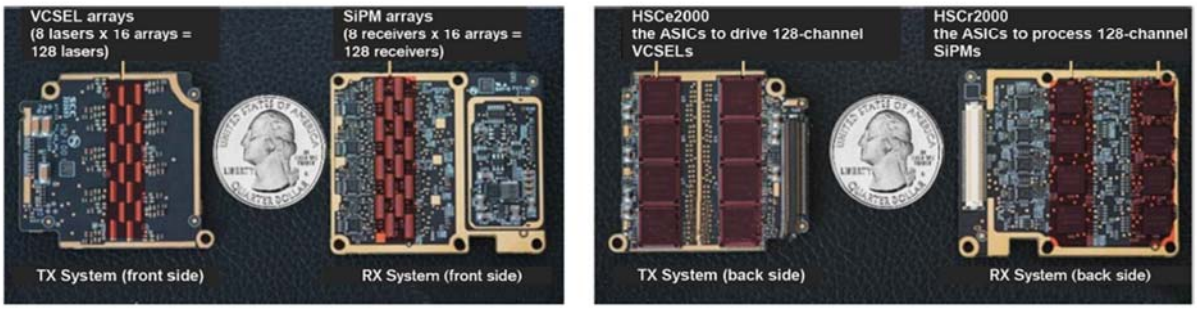


Exhibit 23 at 124. Hesai states that this TX/RX system is the foundation for their LiDAR products. *Id.*

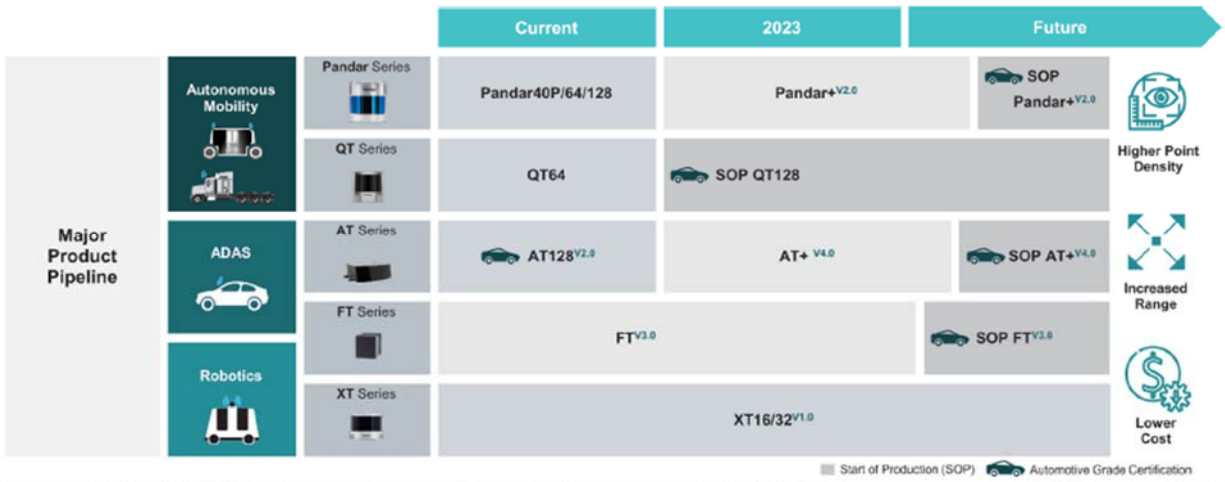
10. In recent filings with the SEC, Hesai Group noted that it was a Cayman Island company with most of its operations in China. Hesai not only provides its products to commercial customers but, on information and belief, also provides products to the Chinese military. *See* Ex. 17 (https://www.globaltimes.cn/page/202107/1227901.shtml). Hesai also seems to boast that it is judgment proof because "mainland China does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts with the Cayman Islands and many other countries and regions" so that "mainland China laws may render you unable to enforce a judgment against our assets or the assets of our directors and officers." Exhibit 23 at 57.

11. Hesai infringes one or more of the following claims of the Asserted Patents (independent claims in bold):[1]

[1] Ouster provides this identification without prejudice to its ability to assert infringement of additional claims as this case proceeds, including in connection with Ouster's infringement contentions.

Asserted Patent	Claims Asserted Against Hesai
U.S. Patent No. 11,175,405	**PandarQT products**: **21**, 23-25, **26**-34
U.S. Patent No. 11,178,381	**PandarQT products**: **1**-3, 5-8, 10-13, **14**-17 **PandarXT products**: **1**-3, 5, 10-13, **14**-15 **AT128**: **1**-3, 10-13, **14**-15
U.S. Patent No. 11,190,750	**PandarQT products**: **44**-48, 50
U.S. Patent No. 11,287,515	**PandarQT products**: **1**-2, 4-6, 8, 9, 12-**14**, 17, 19-21, **22**-23, 25 **PandarXT products**: **1**-2, 4-6, 8, 9, 12-**14**, 17, 19-21, **22**-23, 25
U.S. Patent No. 11,422,236	**PandarQT products**: **1**, 2, 7-9, **10**-15, **16**-22, **23**-27

12. The "Accused Products" include, but are not limited to: rotational products such as the Hesai PandarQT (including the various 64- and 128-channel models—collectively, the "PandarQT products") and PandarXT (including the various 16- and 32-channel models—collectively, the "PandarXT products"), as well as non-rotational (or "directional" LiDAR) products such as the AT128. Hesai describes its product pipeline as:



Hesai describes its "flagship" models as follows:

	Pandar128	QT128	XT32	AT128	FT120[1]
Application	Autonomous Mobility – long-range detection	Autonomous Mobility – blind-spot detection	Robotics	ADAS	ADAS – blind spot detection
Operating principle	Time of Flight (ToF)	ToF	ToF	ToF	ToF
Scanning method (vertical)	Electronic scanning	Electronic scanning	Electronic scanning	Electronic scanning	Electronic scanning
Scanning method (horizontal)	Mechanical rotation	Mechanical rotation	Mechanical rotation	Scanning mirror	Electronic scanning
Channel	128	128	32	128	120
Range	up to 200 m at 10% reflectivity[2]	up to 20 m at 10% reflectivity	up to 80 m at 10% reflectivity	up to 200 m at 10% reflectivity	up to 30 m at 10% reflectivity
Data points generated (single return)	3,456,000 points/second	864,000 points/second	640,000 points/second	1,536,000 points/second	192,000 points/second
FOV (vertical)	40°	105.2°	31°	25.4°	75°
FOV (horizontal)	360°	360°	360°	120°	100°
Resolution (vertical)	0.125° finest	0.4° finest	1°	0.2°	0.625°
Resolution (horizontal)	0.1° finest (10 Hz frame rate)	0.4° finest (10 Hz frame rate)	0.18° (10 Hz frame rate)	0.1° (10 Hz frame rate)	0.625°
Interference rejection	Yes	Yes	Yes	Yes	Yes
Power consumption	27 W	10 W	10 W	18 W	<12 W

Exhibit 23 at 116, 121, 126.

THE PARTIES

I. PLAINTIFF OUSTER, INC.

13. Plaintiff Ouster, Inc. is a publicly-traded corporation organized and existing under the laws of Delaware with its principal place of business at 350 Treat Ave, San Francisco, California 94110. Ouster, Inc. is the owner of the Asserted Patents.

14. Ouster was founded in California in 2015 by Stanford University classmates Angus Pacala and Mark Frichtl. Since that time, Ouster has grown to over 200 employees in the United States. In November 2022, Ouster and Velodyne Lidar agreed to a merger of equals. The merger completed in February 2023, with the combined company retaining the Ouster name.

15. Ouster is a leading provider of high-resolution digital 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. Ouster's LiDAR products are among the

most capable and affordable sensors on the market. Ouster's LiDAR products have many uses including infrastructure monitoring, intelligent urban planning, and providing the detailed mapping needed for autonomous cars and machines.

II. DEFENDANTS HESAI GROUP AND HESAI TECHNOLOGY CO., LTD. (AKA "SHANGHAI HESAI")

16. On information and belief, Defendant Hesai Group is a corporation organized and existing under the laws of the Cayman Islands. Hesai Group's registered office in the Cayman Islands is located at the offices of Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. Ex. 23 at 12. Hesai Group's agent for service of process in the United States is Cogency Global Inc., located at 122 East 42nd Street, 18th Floor, New York, NY 10168. *Id.* On information and belief, Hesai Group was formed to facilitate offshore financing and is the ultimate parent organization of Defendant Hesai Technology Co., Ltd. *See,* Ex. 23 at 5-6.

17. On information and belief, Defendant Hesai Technology Co., Ltd. (aka "Shanghai Hesai") is a subsidiary of Defendant Hesai Group and is a corporation organized and existing under the laws of the People's Republic of China. Ex. 23 at 5-6. Shanghai Hesai has its principal place of business at 9th Floor, Building L2-B, 1588 Zhuguang Road, Qingpu District, Shanghai 201702, People's Republic of China. *Id.*

JURISDICTION AND VENUE

I. JURISDICTION

A. Subject Matter Jurisdiction

18. The Court has jurisdiction over the subject matter of this action under Title 28 United States Code, §§ 1331 and 1338(a).

B. Personal Jurisdiction With Regard To Shanghai Hesai

19. This Court has personal jurisdiction over Hesai Technology Co., Ltd. (aka "Shanghai Hesai") pursuant to the Delaware long-arm statute (10 Del. C. § 3104(c)) under the "dual jurisdiction" or "stream of commerce" test, as explained below.

20. The "dual jurisdiction or "stream of commerce" theory provides a basis for personal jurisdiction under Delaware's long-arm statute. *Graphics Properties Holdings, Inc. v. Asus Computer Int'l*, 70 F. Supp. 3d 654, 662 (D. Del. 2014). Under the stream of commerce test, personal jurisdiction is established over a foreign defendant such as Shanghai Hesai by showing three things: (1) an intent to serve the Delaware market; (2) the introduction of products into the market as a result of this intent; and (3) that Plaintiff's cause of action arises from injuries caused by those products. *3G Licensing, S.A. v. HTC Corp.*, No. 17-cv-83-LPS-CJB, 2017 WL 6442101, at *2 (D. Del. Dec. 18, 2017).

21. As to the first prong, a non-resident entity's "intent to serve the United States market is sufficient to establish an intent to serve the Delaware market, unless there is evidence that the firm intended to exclude from its marketing and distribution efforts some portion of the country that includes Delaware." *Enzo Life Scis., Inc. v. Hologic Inc.*, No. 16-cv-894-LPS-CJB, 2018 WL 4660355, at *3 n.5 (D. Del. Sept. 26, 2018) (internal citations and quotations omitted).

22. On information and belief, during the time period relevant to this lawsuit, Shanghai Hesai intended to serve the United States market with products including the Accused Products. On information and belief, Shanghai Hesai's intent to serve the United States market, including Delaware, is demonstrated by the fact that, as alleged herein, the Accused Products have been imported, sold, offered for sale, displayed and/or used in the United States. On information and

belief, Shanghai Hesai has not excluded any portion of the United States that includes Delaware from its efforts to sell and ship products to the United States.

23. With regard to the second prong, on information and belief, Shanghai Hesai's intent to serve the United States market resulted in the introduction of products, including the Accused Products, into the United States market including in Delaware.

24. With regard to the third prong, Plaintiff's cause of action for infringement of the Asserted Patents arises from injuries caused by the Accused Products introduction and sales in the United States market, including in Delaware, as a result of Shanghai Hesai's intent to serve the United States market. As explained further below, Plaintiff alleges that the Accused Products infringe the Asserted Patents. Unlicensed usage, offers for sale, and sales of the Accused Products in the United States, and unlicensed importation of the Accused Products into the United States, has injured Plaintiff.

25. In sum, this Court has personal jurisdiction over Shanghai Hesai pursuant to the Delaware long-arm statute (10 Del. C. § 3104(c)) under the stream of commerce test.

26. In the alternative, this Court has personal jurisdiction over Shanghai Hesai pursuant to the federal long-arm statute, Fed. R. Civ. P. 4(k)(2).

27. Rule 4(k)(2) allows "'a court to exercise personal jurisdiction over a defendant if (1) the plaintiff's claim arises under federal law, (2) the defendant is not subject to jurisdiction in any state's courts of general jurisdiction, and (3) the exercise of jurisdiction comports with due process.'" *Bos. Sci. Corp. v. Micro-Tech Endoscopy USA Inc.*, No. 18-cv-1869-CFC-CJB, 2020 WL 229993, at *4 (D. Del. Jan 15, 2020) (quoting *M-I Drilling Fluids UK Ltd. v. Dynamic Air Ltda.*, 890 F.3d 995, 999 (Fed. Cir. 2018)), report and recommendation adopted (Dkt. 66; Feb. 5, 2020). "'The third requirement under Rule 4(k)(2)—the due process analysis—contemplates

defendant's contacts with the entire United States, as opposed to the state in which the district court sits.'" *Id*. (same).

28. Rule 4(k)(2) is meant to allow a district court to exercise personal jurisdiction over a foreign defendant whose contacts with the United States, but not with the forum state, satisfy due process. *Id*. (citing *M-I Drilling*, 890 F.3d at 999). Pleading personal jurisdiction alternatively under Rule 4(k)(1) and Rule 4(k)(2) is proper under Fed. R. Civ. P. 8(d). *See Touchcom, Inc. v. Bereskin & Parr*, 574 F.3d 1403, 1415 (Fed. Cir. 2009) (analyzing application of Fed. R. Civ. P. 4(k)(2) and noting that "[a]n approach that forecloses alternative arguments appears to conflict with the Federal Rules of Civil Procedure").

29. With regard to the first prong, Plaintiff alleges that Shanghai Hesai is liable for patent infringement pursuant to 35 U.S.C. § 271. Thus, Plaintiff's claims arise under federal law.

30. With regard to the second prong, on information and belief, Shanghai Hesai is a corporation organized and existing under the laws of the People's Republic of China, maintains its principal place of business in Shanghai, People's Republic of China, and does not maintain any offices in the United States. To the extent that exercise of personal jurisdiction under the Delaware long-arm statute is not proper, then on information and belief, Shanghai Hesai is not subject to jurisdiction in any state's courts of general jurisdiction.

31. With regard to the third prong, in analyzing due process under Rule 4(k)(2), courts consider whether (1) the defendant purposefully directed its activities at residents of the United States, (2) the claim arises out of or relates to the defendant's activities with the United States, and (3) assertion of personal jurisdiction is reasonable and fair. *Bos. Sci. Corp*., 2020 WL 229993, at *6. 31.

32. Shanghai Hesai purposefully directed its activities at residents of the United States. As explained above, the Accused Products have been imported, sold, offered for sale, displayed and/or used in the United States.

33. Plaintiff's infringement claims against Shanghai Hesai arise out of or relate to Shanghai Hesai's activities with the United States. On information and belief, Shanghai Hesai sold Accused Products and also shipped Accused Products to the United States. The unlicensed use, sale, and offer for sale of these Accused Products in the United States, and unlicensed importation of them into the United States, provide the basis for Plaintiff's infringement claims.

34. Assertion of personal jurisdiction over Shanghai Hesai is reasonable and fair. Any burden on Shanghai Hesai is sufficiently outweighed by the interest of the United States in adjudicating Plaintiff's claims, which are based on infringement of U.S. patents and sale of the Accused Products in the U.S., and by the interests of Plaintiff in obtaining effective and convenient relief. *Bos. Sci. Corp.*, 2020 WL 229993, at *7–*8.

35. In sum, this Court alternatively has personal jurisdiction over Shanghai Hesai pursuant to Fed. R. Civ. P. 4(k)(2).

C. Personal Jurisdiction With Regard To Hesai Group

36. This Court has personal jurisdiction over Hesai Group pursuant to the Delaware long-arm statute (10 Del. C. § 3104(c)) under the "dual jurisdiction" or "stream of commerce" test.

37. With regard to the first prong of the stream of commerce test, on information and belief, during the time period relevant to this lawsuit, Hesai Group intended to serve the United States market with products including the Accused Products. On information and belief, Hesai Group's intent to serve the United States market, including Delaware, is demonstrated by the fact that, as alleged herein, the Accused Products have been imported, sold, offered for sale, displayed

and/or used in the United States. On information and belief, Hesai Group has not excluded any portion of the United States that includes Delaware from its efforts to sell and ship products to the United States.

38. With regard to the second prong, on information and belief, Hesai Group's intent to serve the United States market resulted in the introduction of products, including the Accused Products, into the United States market including in Delaware.

39. With regard to the third prong, Plaintiff's cause of action for infringement of the Patents-in-Suit arises from injuries caused by the Accused Products introduction and sales in the United States market, including in Delaware, as a result of Hesai Group's intent to serve the United States market. As explained further below, Plaintiff alleges that the Accused Products infringe the Asserted Patents. Unlicensed usage, offers for sale, and sales of the Accused Products in the United States, and unlicensed importation of the Accused Products into the United States, has injured Plaintiff.

40. In sum, this Court has personal jurisdiction over Hesai Group pursuant to the Delaware long-arm statute (10 Del. C. § 3104(c)) under the stream of commerce test.

41. In the alternative, this Court has personal jurisdiction over Hesai Group pursuant to the federal long-arm statute, Fed. R. Civ. P. 4(k)(2).

42. With regard to the first prong of Rule 4(k)(2), Plaintiff alleges that Hesai Group is liable for patent infringement pursuant to 35 U.S.C. § 271. Thus, Plaintiff's claims arise under federal law.

43. With regard to the second prong, on information and belief, Hesai Group is a corporation organized and existing under the laws of the Cayman Islands, with offices in the Cayman Islands, and does not maintain any offices in the United States. To the extent that exercise

of personal jurisdiction under the Delaware long-arm statute is not proper, then on information and belief, Hesai Group is not subject to jurisdiction in any state's courts of general jurisdiction.

44. With regard to the third prong, first, as explained above the Accused Products have been imported, sold, offered for sale, displayed and/or used in the United States.

45. Additionally, Plaintiff's infringement claims against Hesai Group out of or relate to Hesai Group's activities with the United States. In particular, on information and belief, Hesai Group sold Accused Products and also shipped Accused Products to the United States. The unlicensed use, sale, and offer for sale of these Accused Products in the United States, and unlicensed importation of them into the United States, provide the basis for Plaintiff's infringement claims.

46. Further, assertion of personal jurisdiction over Hesai Group is reasonable and fair. Any burden on Hesai Group is sufficiently outweighed by the interest of the United States in adjudicating Plaintiff's claims, which are based on infringement of U.S. patents and sales of the accused products in the U.S., and by the interests of Plaintiff in obtaining effective and convenient relief. *Bos. Sci. Corp.*, 2020 WL 229993, at *7–*8.

47. In sum, this Court alternatively has personal jurisdiction over Hesai Group pursuant to Fed. R. Civ. P. 4(k)(2).

II. VENUE

48. When a foreign defendant is sued in a patent infringement action, 28 U.S.C. § 1391 governs venue. See *3G Licensing*, 2017 WL 6442101, at *2. Under § 1391, a foreign defendant may be sued in any judicial district. See 28 U.S.C. § 1391(c)(3).

49. On information and belief, Shanghai Hesai is incorporated in the People's Republic of China. Shanghai Hesai is a foreign defendant that may be sued in any judicial district. Therefore, venue is proper here in the District of Delaware.

50. On information and belief, Hesai Group is incorporated in the Cayman Islands. Hesai Group is a foreign defendant that may be sued in any judicial district. Therefore, venue is proper here in the District of Delaware.

FACTUAL BACKGROUND

51. The technology at issue is digital LiDAR ("Light Detection and Ranging") devices, components thereof, and systems containing the same, which utilize LiDAR technology which remotely senses the external environment. Ouster's LiDAR provides real time "camera like" mapping of the external environment flexible enough to serve a wide variety of automotive, industrial, smart infrastructure, and robotics applications.

I. THE ASSERTED PATENTS

52. Five patents are asserted in this Complaint, the '405 patent, '381 patent, '750 patent, '515 patent, and '236 patent, copies of which are attached to this Complaint as Exhibits 2 through 6.

A. U.S. Patent Number 11,175,405

53. The '405 patent, entitled "Spinning Lidar Unit with Micro-Optics Aligned Behind Stationary Window," was filed on May 14, 2018. The '405 patent issued on November 16, 2021, naming as inventors Angus Pacala, Mark Frichtl, and Marvin Shu. Before filing the application that led to the '405 patent, Ouster filed U.S. Provisional Patent Application No. 62/506,449 on May 15, 2017, U.S. Provisional Patent Application No. 62/506,437 on May 15, 2017, U.S.

Provisional Patent Application No. 62/506,445 on May 15, 2017, and U.S. Provisional Patent Application No. 62/515,291 on June 5, 2017.

54. The ’405 patent expires on January 16, 2040.

55. Ouster owns by assignment the entire right, title, and interest in and to the ’405 patent. *See* Ex. 7. Copies of the recorded assignments for the ’405 patent are attached to this Complaint as Exhibit 7.

B. U.S. Patent Number 11,178,381

56. The ’381 patent, entitled “Optical System for Collecting Distance Information Within a Field,” was filed on May 18, 2021. The ’381 patent issued on November 16, 2021, naming as inventors Angus Pacala and Mark Frichtl. Before filing the application that led to the ’381 patent, Ouster filed U.S. Patent Application Ser. No. 15/880,491 on Jan. 25, 2018, which is a continuation of U.S. Patent Application Ser. No. 15/276,532, filed Sep. 26, 2016, now U.S. Pat. No. 9,992,477, issued June 5, 2018; which claims the benefit of U.S. Provisional Patent Application No. 62/232,222 filed Sep. 24, 2015. The ‘381 patent is also related to U.S. Patent Application Ser. No. 17/317,809, filed on May 11, 2021; U.S. Patent Application Ser. No. 16/584,515 filed on Sep. 26, 2019; U.S. Patent Application Ser. No. 16/046,643, filed on Jul. 26, 2018; and U.S. Patent Application Ser. No. 15/861,330, filed on Jan. 3, 2018.

57. The ’381 patent expires on September 26, 2036.

58. Ouster owns by assignment the entire right, title, and interest in and to the ’381 patent. *See* Ex. 8. Copies of the recorded assignments for the ’381 patent are attached to this Complaint as Exhibit 8.

C. U.S. Patent Number 11,190,750

59. The ’750 patent, entitled “Optical Imaging System with a Plurality of Sense Channels,” was filed on July 26, 2018. The ’750 patent issued on November 30, 2021, naming as inventors Angus Pacala and Mark Frichtl. Before filing the application that led to the ’750 patent, Ouster filed U.S. Patent Application Ser. No. 15/880,491 on Jan. 25, 2018, now U.S. Pat. No. 11,025,885, which is a continuation of U.S. Patent Application Ser. No. 15/276,532, filed Sep. 26, 2016, now U.S. Pat. No. 9,992,477, issued June 5, 2018; which claims the benefit of U.S. Provisional Patent Application No. 62/232,222 filed Sep. 24, 2015.

60. The ’750 patent expires on February 25, 2038.

61. Ouster owns by assignment the entire right, title, and interest in and to the ’750 patent. *See* Ex. 9. Copies of the recorded assignments for the ’750 patent are attached to this Complaint as Exhibit 9.

D. U.S. Patent Number 11,287,515

62. The ’515 patent, entitled “Rotating Compact Light Ranging System Comprising a Stator Driver Circuit Imparting an Electromagnetic Force on a Rotor Assembly,” was filed on May 18, 2021. The ’515 patent issued on March 29, 2022, naming as inventors Angus Pacala, Mark Frichtl, Marvin Shu, and Eric Younge. Before filing the application that led to the ’515 patent, Ouster filed U.S. Patent Application No. 16/209,875 on December 4, 2018.

63. The ’515 patent expires on December 4, 2038.

64. Ouster owns by assignment the entire right, title, and interest in and to the ’515 patent. *See* Ex. 10. Copies of the recorded assignments for the ’515 patent are attached to this Complaint as Exhibit 10.

E. U.S. Patent Number 11,422,236

65. The ’236 patent, entitled “Optical System for Collecting Distance Information Within a Field,” was filed on December 15, 2021. The ’236 patent issued on August 23, 2022, naming as inventors Angus Pacala, Mark Frichtl, Marvin Shu, and Eric Younge. Before filing the application that led to the ’236 patent, Ouster filed U.S. Patent Application Ser. No. 17/194,068 filed, Mar. 5, 2021, which is a continuation of U.S. Patent Application Ser. No. 15/685,384, filed Aug. 24, 2017, now U.S. Pat. No. 10,948,572, which claims the benefit and priority to U.S. Provisional Application 62/379,130, filed on Aug. 24, 2016.

66. The ’236 patent expires on August 24, 2037.

67. Ouster owns by assignment the entire right, title, and interest in and to the ’236 patent. *See* Ex. 11. Copies of the recorded assignments for the ’236 patent are attached to this Complaint as Exhibit 11.

II. HESAI’S INFRINGEMENT OF THE ASSERTED PATENTS

68. On information and belief, Hesai makes, uses, offers to sell, sells, imports into the United States, and/or sells for importation LiDAR systems and components thereof, that infringe the Asserted Patents either literally or under the doctrine of equivalents

69. In particular, the Accused Products include Hesai’s PandarXT, Pandar QT, AT128, and other LiDAR systems.[2] On information and belief, the Accused Products are manufactured (in whole or in substantial part) by Hesai in China. Ex. 23 at 3 (“Hesai Technology has strategically built its current manufacturing facility, which covers approximately 270,000 square feet and is certified under IATF 16949 and ISO 9001, in Jiading, Shanghai, the hub for automotive

[2] The Accused Products identified in this Complaint are merely illustrative of the infringing products. Discovery may reveal additional Accused Products. In addition, the product names “PandarXT” and “PandarQT” also refer to the newer marketing names of “XT” and “QT”, respectively.

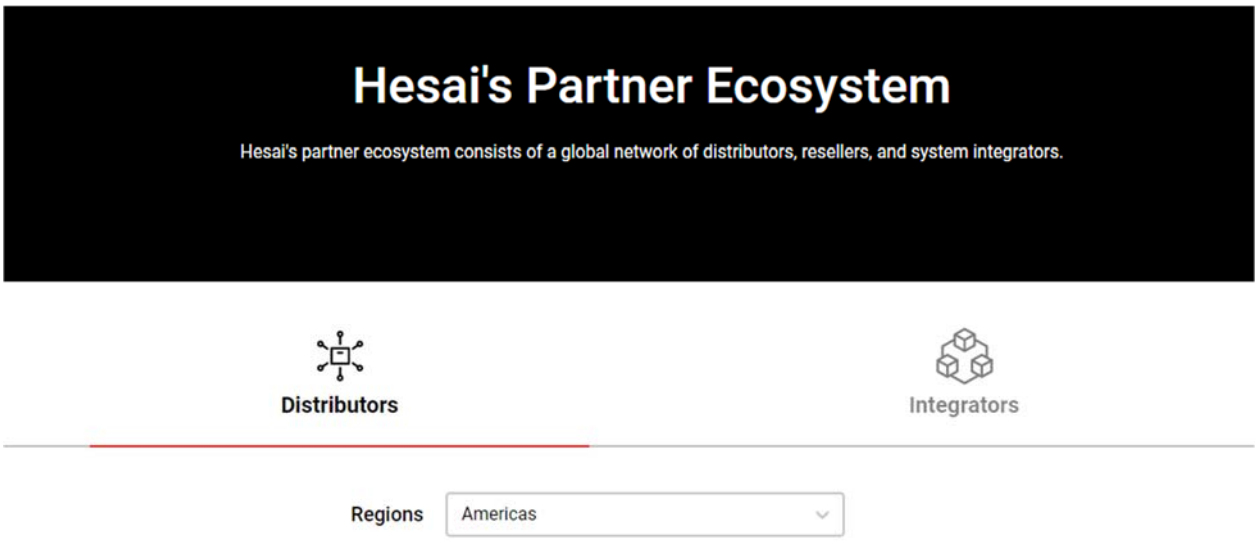
OEMs in China. This manufacturing facility, together with a transitional production line, supports an annual production capacity of 35,000 units for the non-AT series…"); *id.* at 33 ("Although our existing manufacturing capacity is sufficient for our current and near-term demand, we plan to construct a new manufacturing facility in Jiading, Shanghai to prepare for further production rampup of our existing and future LiDAR products. The new facility is expected to commence manufacturing in 2023.")

70. Hesai claims that its top five customers in terms of revenues in 2020 for LiDAR solutions in the Autonomous Mobility industry include, among others, a "leading global OEM headquartered in the United States … and a leading mobility service and technology company headquartered in the United States," that its top five customers in terms of revenues in 2021 included "a leading global OEM headquartered in the United States," and its top five customers in terms of revenues in the nine months ended September 30, 2022 included "a leading global OEM headquartered in the United States … and an autonomous vehicle company headquartered in the United States." Ex. 23 at 3. Hesai further claims:

> "In 2019, 2020, 2021 and the nine months ended September 30, 2021 and 2022, one customer, a leading global OEM headquartered in the United States, accounted for 23.6%, 10.4%, 17.5%, 10.7% and 10.1% of our revenue, respectively. We directly receive purchase orders from this customer. … In addition, a leading autonomous driving company with fleets and operations in both the United States and China accounted for 12.7% and 10.7% of our revenue in 2021 and the nine months ended September 30, 2022, respectively, … ."

Ex. 23 at 39.

71. U.S. customers mentioned by Hesai include companies such as AutoX and TuSimple. Ex. 23 at 113. Hesai also lists several U.S. based distributors and integrators as part of its "partner ecosystem" at https://www.hesaitech.com/ecosystem/:

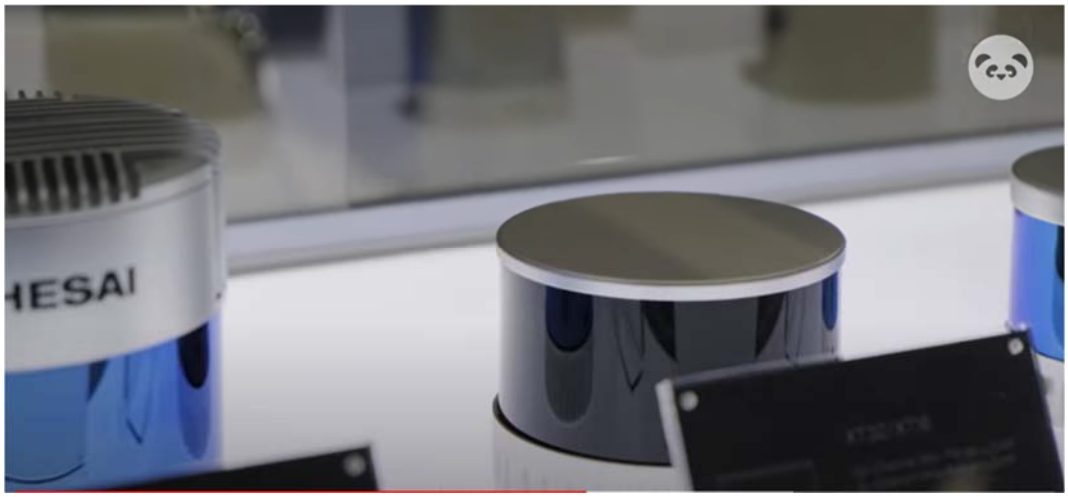


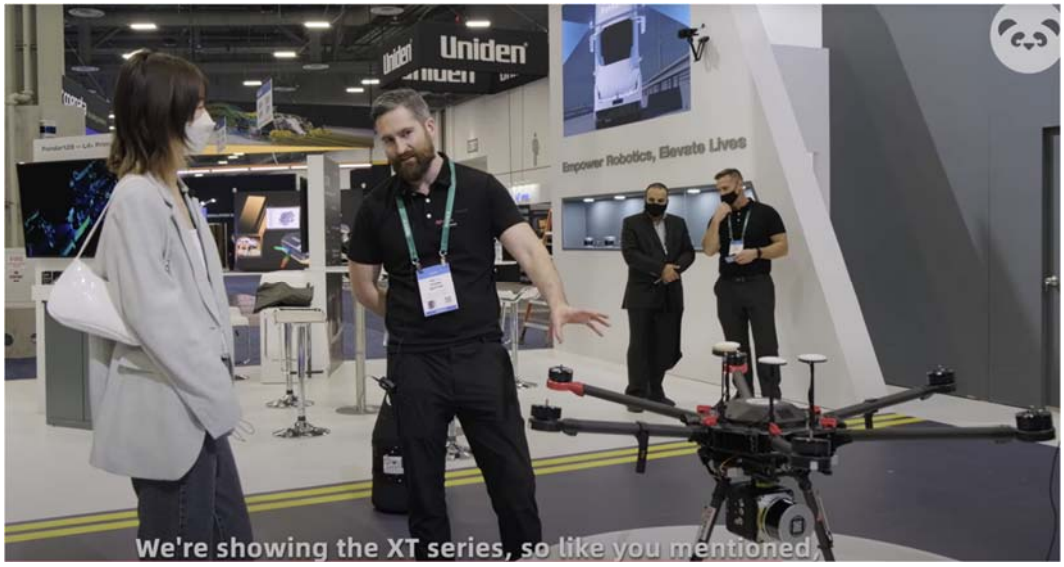
Ex. 1.

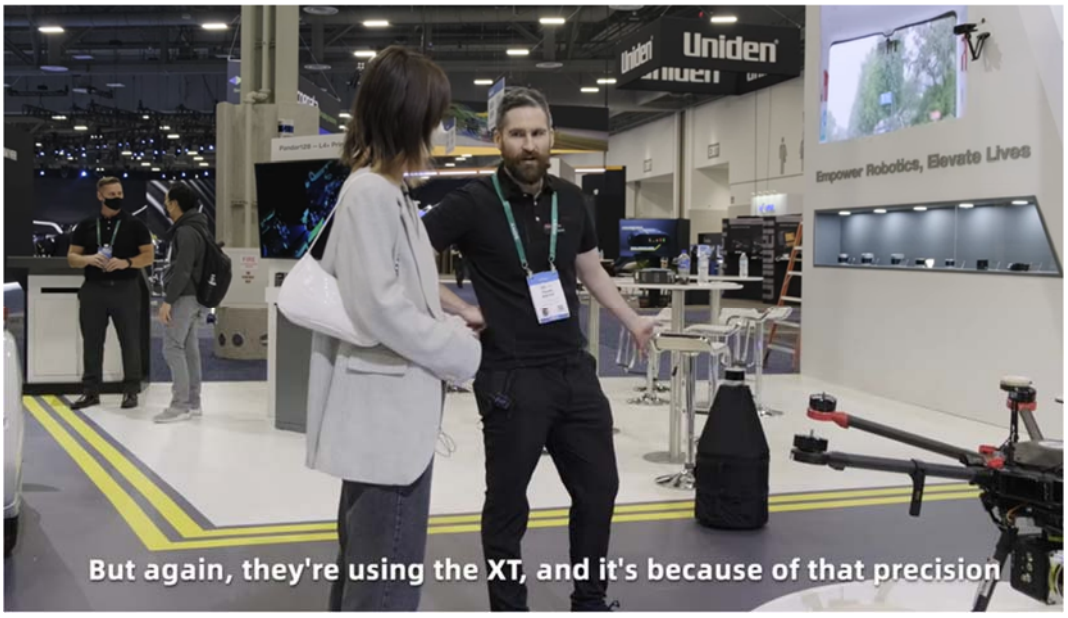
72. In view of Hesai's disclosure of its activities with U.S. customers, these relationships must involve, at a minimum, importation into the U.S. of the accused sensors from its purported manufacturing facility in China and related sales or offers for sale in the U.S.

73. Hesai has also displayed its sensors at trade shows in the United States. *See* Exs. 19, 21. For example, at CES 2022 in Las Vegas in January 2022, Hesai displayed several of its products, including the QT64 and XT, as well as an operational robot with the XT:[3]

[3] https://www.youtube.com/watch?v=leUFmc_GxoQ at 5:15, 6:48 ("The Beginning of Mass-Producible LiDAR: An Interview with Hesai Technology CEO at CES 2022")


HESAI


Uniden
Empower Robotics, Elevate Lives
We're showing the XT series, so like you mentioned


Uniden
Empower Robotics, Elevate Lives
But again, they're using the XT, and it's because of that precision

74. At CES 2023 in Las Vegas in January 2023, Hesai again displayed its products, including the AT128, along with a live demonstration, and QT128, as shown in these snapshots from a video published by Hesai from CES 2023.[4] On information and belief, and as shown in Exs. 12, 13a, 14, 15a, and 16, the QT128 and QT64 operate in the same manner for all relevant purposes:

[4] https://www.youtube.com/watch?v=zChsvjMIZTk ("Tour with Hesai to Explore CES 2023").

Here is a live demonstration of AT128, Hesai's latest long-range lidar sensor

HESAI
WeRide
and at the rear of this car is the QT128

HESAI
Empower Robotics, Elevate Lives

75. Hesai also highlighted certain of its partners at CES in Las Vegas, including San Francisco-based ZOOX which Hesai describes as one of its leading autonomous vehicle companies. As shown in this screenshot from the video published by Hesai, ZOOX showcased Hesai's sensor suite at CES:[5]

76. To the extent the Accused Products are not manufactured in the U.S., based on Hesai's U.S. customer activities, for past and future delivery, above, as well as its participation in U.S. trade shows, it is highly likely that one or more of the sensors displayed at CES 2023 in Las Vegas was imported to the United States from Hesai's Chinese facility.

[5] *See also* Ex. 18 (https://www.hesaitech.com/announcing-our-partnership-with-zoox/).

FIRST CAUSE OF ACTION
(Infringement of Patent No. 11,175,405)

77. Ouster hereby re-alleges and incorporates by reference the foregoing paragraphs of the Complaint as if fully set forth herein.

78. Ouster owns all right, title, and interest in and to the ’405 patent.

79. Hesai has knowledge of the ’405 patent no later than the date of service of this complaint, and likely earlier, as alleged below.

80. On information and belief, the Accused Products directly infringe, either literally or under the doctrine of equivalents, at least independent claim 21 and dependent claims 23-24 of the ’405 patent. A chart that applies independent claim 26 of the ’405 patent to an exemplary Accused Product is attached to the Complaint as Confidential Exhibit 12.

81. Hesai infringes the ‘405 patent both directly and indirectly, literally or under the doctrine of equivalents. Hesai directly infringes the ‘405 patent 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).

82. On information and belief, Hesai also has been and/or will be actively, knowingly, and intentionally inducing infringement of the ‘405 patent 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. On information and belief, Hesai had actual knowledge of the ‘405 patent long before the filing of this Complaint, and at least as early as Hesai’s initial product release. For example, Ouster’s patent U.S. Patent No. 10,222,475—which belongs to the same family as the ‘405 patent —is cited on the face of U.S. Patent No. 11,346,952, which is a Hesai patent filed on February 28, 2020. And Hesai actively promotes the sale, use, and importation of Hesai’s infringing 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.*, Exs. 1, 18, 19-22, 24-29. By these actions, Hesai has had and/or will have the specific intent to induce, or was willfully blind to inducing infringement of the '405 patent.

83. On information and belief, Hesai also has been and/or will be contributing to infringement of the '405 patent by others, including purchasers who deploy the Accused Products with their products, 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 non-infringing use. As discussed above, Hesai has had actual knowledge of the Asserted Patents.

84. Ouster has suffered damages including lost sales, lost profits, lost market share, and/or lost goodwill as a result of Hesai's infringement of the '405 patent and will suffer additional damages as a result of Hesai's continuing infringement. Ouster is entitled to recover damages adequate to compensate for Hesai's infringing activities in an amount to be determined at trial, but in no event less than a reasonable royalty, together with interest and costs.

85. For ongoing and future infringement, Ouster will continue to suffer irreparable harm unless this Court enjoins Hesai, its agents, employees, representatives, and all others acting in concert with Hesai from infringing the '405 patent.

SECOND CAUSE OF ACTION
(Infringement of Patent No. 11,178,381)

86. Ouster hereby re-alleges and incorporates by reference the foregoing paragraphs of the Complaint as if fully set forth herein.

87. Ouster owns all right, title, and interest in and to the '381 patent.

88. Hesai has knowledge of the ’381 patent no later than the date of service of this complaint, and likely earlier, as alleged below.

89. On information and belief, the Accused Products directly infringe, either literally or under the doctrine of equivalents, at least independent claims 1 and 14 and dependent claims 2-3, 5-8, 10-13, 15-17 of the ’381 patent. Charts that apply independent claim 14 of the ’381 patent to three exemplary Accused Products are attached to the Complaint as Confidential Exhibits 13a-13c.

90. Hesai infringes the ‘381 patent both directly and indirectly, literally or under the doctrine of equivalents. Hesai directly infringes the ‘381 patent 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).

91. On information and belief, Hesai also has been and/or will be actively, knowingly, and intentionally inducing infringement of the ‘381 patent 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. On information and belief, Hesai had actual knowledge of the ‘381 patent long before the filing of this Complaint, and at least as early as Hesai’s initial product release. For example, Ouster’s patent U.S. Patent No. 10,222,475—which belongs to the same family as the ‘405 patent asserted in this complaint —is cited on the face of U.S. Patent No. 11,346,952, which is a Hesai patent filed on February 28, 2020. And Hesai actively promotes the sale, use, and importation of Hesai’s infringing 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.*, Exs. 1, 18, 19-22, 24-29. By these actions, Hesai

has had and/or will have the specific intent to induce, or was willfully blind to inducing infringement of the '381 patent.

92. On information and belief, Hesai also has been and/or will be contributing to infringement of the '381 patent by others, including purchasers who deploy the Accused Products with their products, 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 non-infringing use. As discussed above, Hesai has had actual knowledge of the Asserted Patents.

93. Ouster has suffered damages including lost sales, lost profits, lost market share, and/or lost goodwill as a result of Hesai's infringement of the '381 patent and will suffer additional damages as a result of Hesai's continuing infringement. Ouster is entitled to recover damages adequate to compensate for Hesai's infringing activities in an amount to be determined at trial, but in no event less than a reasonable royalty, together with interest and costs.

94. For ongoing and future infringement, Ouster will continue to suffer irreparable harm unless this Court enjoins Hesai, its agents, employees, representatives, and all others acting in concert with Hesai from infringing the '381 patent.

THIRD CAUSE OF ACTION
(Infringement of Patent No. 11,190,750)

95. Ouster hereby re-alleges and incorporates by reference the foregoing paragraphs of the Complaint as if fully set forth herein.

96. Ouster owns all right, title, and interest in and to the '750 patent.

97. Hesai has knowledge of the '750 patent no later than the date of service of this complaint, and likely earlier, as alleged below.

98. On information and belief, the Accused Products directly infringe, either literally or under the doctrine of equivalents, at least independent claim 44 and dependent claims 45-48 and 50 of the ’750 patent. A chart that applies independent claim 44 of the ’750 patent to an exemplary Accused Product is attached to the Complaint as Confidential Exhibit 14.

99. Hesai infringes the ‘750 patent both directly and indirectly, literally or under the doctrine of equivalents. Hesai directly infringes the ‘750 patent 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).

100. On information and belief, Hesai also has been and/or will be actively, knowingly, and intentionally inducing infringement of the ‘750 patent 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. On information and belief, Hesai had actual knowledge of the ‘750 patent long before the filing of this Complaint, and at least as early as Hesai’s initial product release. For example, Ouster’s patent U.S. Patent No. 10,222,475—which belongs to the same family as the ‘405 patent asserted in this complaint —is cited on the face of U.S. Patent No. 11,346,952, which is a Hesai patent filed on February 28, 2020. And Hesai actively promotes the sale, use, and importation of Hesai’s infringing 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.*, Exs. 1, 18, 19-22, 24-29. By these actions, Hesai has had and/or will have the specific intent to induce, or was willfully blind to inducing infringement of the ‘750 patent.

101. On information and belief, Hesai also has been and/or will be contributing to infringement of the '750 patent by others, including purchasers who deploy the Accused Products with their products, 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 non-infringing use. As discussed above, Hesai has had actual knowledge of the Asserted Patents.

102. Ouster has suffered damages including lost sales, lost profits, lost market share, and/or lost goodwill as a result of Hesai's infringement of the '750 patent and will suffer additional damages as a result of Hesai's continuing infringement. Ouster is entitled to recover damages adequate to compensate for Hesai's infringing activities in an amount to be determined at trial, but in no event less than a reasonable royalty, together with interest and costs.

103. For ongoing and future infringement, Ouster will continue to suffer irreparable harm unless this Court enjoins Hesai, its agents, employees, representatives, and all others acting in concert with Hesai from infringing the '750 patent.

FOURTH CAUSE OF ACTION
(Infringement of Patent No. 11,287,515)

104. Ouster hereby re-alleges and incorporates by reference the foregoing paragraphs of the Complaint as if fully set forth herein.

105. Ouster owns all right, title, and interest in and to the '515 patent.

106. Hesai has knowledge of the '515 patent no later than the date of service of this complaint, and likely earlier, as alleged below.

107. On information and belief, the Accused Products directly infringe, either literally or under the doctrine of equivalents, at least independent claims 1, 14, 22 and dependent claims 2, 4-6, 8, 9, 12-13, 17, 19-21, 23, 25 of the '515 patent. Charts that apply independent claim 14 of

the ’515 patent to two exemplary Accused Products are attached to the Complaint as Confidential Exhibits 15a-15b.

108. Hesai infringes the ‘515 patent both directly and indirectly, literally or under the doctrine of equivalents. Hesai directly infringes the ‘515 patent 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).

109. On information and belief, Hesai also has been and/or will be actively, knowingly, and intentionally inducing infringement of the ‘515 patent 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. On information and belief, Hesai had actual knowledge of the ‘515 patent long before the filing of this Complaint, and at least as early as Hesai’s initial product release. For example, Ouster’s patent U.S. Patent No. 10,222,475—which belongs to the same family as the ‘405 patent asserted in this complaint —is cited on the face of U.S. Patent No. 11,346,952, which is a Hesai patent filed on February 28, 2020. And Hesai actively promotes the sale, use, and importation of Hesai’s infringing 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.*, Exs. 1, 18, 19-22, 24-29. By these actions, Hesai has had and/or will have the specific intent to induce, or was willfully blind to inducing infringement of the ‘515 patent.

110. On information and belief, Hesai also has been and/or will be contributing to infringement of the ‘515 patent by others, including purchasers who deploy the Accused Products with their products, 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 non-infringing use. As discussed above, Hesai has had actual knowledge of the Asserted Patents.

111. Ouster has suffered damages including lost sales, lost profits, lost market share, and/or lost goodwill as a result of Hesai's infringement of the '515 patent and will suffer additional damages as a result of Hesai's continuing infringement. Ouster is entitled to recover damages adequate to compensate for Hesai's infringing activities in an amount to be determined at trial, but in no event less than a reasonable royalty, together with interest and costs.

112. For ongoing and future infringement, Ouster will continue to suffer irreparable harm unless this Court enjoins Hesai, its agents, employees, representatives, and all others acting in concert with Hesai from infringing the '515 patent.

FIFTH CAUSE OF ACTION
(Infringement of Patent No. 11,422,236)

113. Ouster hereby re-alleges and incorporates by reference the foregoing paragraphs of the Complaint as if fully set forth herein.

114. Ouster owns all right, title, and interest in and to the '236 patent.

115. Hesai has knowledge of the '236 patent no later than the date of service of this complaint, and likely earlier, as alleged below.

116. On information and belief, the Accused Products directly infringe, either literally or under the doctrine of equivalents, at least independent claims 1, 10, 16, 23 and dependent claims 2, 7-9, 11-15, 17-22, 24-27 of the '236 patent. A chart that applies independent claim 1 of the '236 patent to an exemplary Accused Product is attached to the Complaint as Confidential Exhibit 16.

117. Hesai infringes the '236 patent both directly and indirectly, literally or under the doctrine of equivalents. Hesai directly infringes the '236 patent 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).

118. On information and belief, Hesai also has been and/or will be actively, knowingly, and intentionally inducing infringement of the '236 patent 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. On information and belief, Hesai had actual knowledge of the '236 patent long before the filing of this Complaint, and at least as early as Hesai's initial product release. For example, Ouster's patent U.S. Patent No. 10,222,475—which belongs to the same family as the '405 patent asserted in this complaint —is cited on the face of U.S. Patent No. 11,346,952, which is a Hesai patent filed on February 28, 2020. And Hesai actively promotes the sale, use, and importation of Hesai's infringing 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.*, Exs. 1, 18, 19-22, 24-29. By these actions, Hesai has had and/or will have the specific intent to induce, or was willfully blind to inducing infringement of the '236 patent.

119. On information and belief, Hesai also has been and/or will be contributing to infringement of the '236 patent by others, including purchasers who deploy the Accused Products with their products, 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 non-infringing use. As discussed above, Hesai has had actual knowledge of the Asserted Patents.

120. Ouster has suffered damages including lost sales, lost profits, lost market share, and/or lost goodwill as a result of Hesai's infringement of the '236 patent and will suffer additional damages as a result of Hesai's continuing infringement. Ouster is entitled to recover damages adequate to compensate for Hesai's infringing activities in an amount to be determined at trial, but in no event less than a reasonable royalty, together with interest and costs.

121. For ongoing and future infringement, Ouster will continue to suffer irreparable harm unless this Court enjoins Hesai, its agents, employees, representatives, and all others acting in concert with Hesai from infringing the '236 patent.

REQUEST FOR RELIEF

WHEREFORE, Ouster respectfully requests the following relief:

A. A permanent injunction against Hesai, its officers, agents, servants, employees, attorneys, parent and subsidiary corporations, assigns and successors in interest, and those persons in active concert or participation with them, enjoining them from continued acts of infringement of the Asserted Patents;

B. A judgment holding Hesai liable for infringement of the Asserted Patents;

C. An accounting for damages resulting from Hesai's infringement of the Asserted Patents, and an award of damages adequate to compensate Ouster for Hesai's past infringement, together with pre-judgment and post-judgment interest;

D. A judgment holding this Action an exceptional case, and an award to Ouster of its attorneys' fees and costs pursuant to Title 35 United States Code § 285; and

E. Such other relief as the Court deems just and equitable.

DEMAND FOR JURY TRIAL

Plaintiff Ouster, Inc. respectfully requests a trial by jury on all issues triable thereby.

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

/s/ Karen Jacobs

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