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UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

TOMOMI UMEDA, an individual, on behalf of herself and as successor in interest to YOSHIHIRO UMEDA, deceased, and MIYU UMEDA, individually and on behalf of herself and as heir to YOSHIHIRO UMEDA, deceased,

Plaintiffs,

v.

TESLA, INC. dba TESLA MOTORS, INC. and DOES 1-10, inclusive,

Defendant

Case No.: 5:20-cv-2926

COMPLAINT FOR DAMAGES

1. STRICT PRODUCTS LIABILITY: DESIGN DEFECTS
2. STRICT PRODUCTS LIABILITY: FAILURE TO WARN
3. NEGLIGENCE
4. WRONGFUL DEATH
5. LOSS OF CONSORTIUM
6. SURVIVAL ACTION

JURY TRIAL DEMANDED

TABLE OF CONTENTS

1. Plaintiffs Tomomi Umeda and Miyu Umeda, individually and on behalf of the Estate of Yoshihiro Umeda, deceased ("Plaintiffs") by and through their undersigned counsel, hereby bring this Complaint against Defendant Tesla, Inc. ("Tesla") and Does 1-10, inclusive, and allege as follows:

I. INTRODUCTION

2. This case concerns the first Tesla Autopilot-related death involving a pedestrian – Mr. Yoshihiro Umeda, a Japanese citizen and 44-year-old husband and father – and Tesla's accountability for introducing its vehicles and allowing the use of its automated driving technologies that are still in the "beta-testing" stage of development. However noble the pursuit of increasing driver safety for all may ultimately be, such pursuit cannot continue to be left unchecked and without modern regulations that adequately monitor and ensure the overall safety of automated driver assistance systems. This is especially true where the price to be paid for any technological defects and failures of these systems in real-world driving situations comes at the cost of severe harm, danger, and even death. By not holding developers, like Tesla, who are at the helm of developing such cutting-edge technologies such as Tesla's Autopilot system, it is inevitable that without action, the first Tesla Autopilot-related death involving a pedestrian certainly will not be the last.

[1]

[1] Screenshot taken of dash camera video recording from vehicle traveling behind the Tesla Model X, zoomed in.

[2]

3. On April 29, 2018, on an expressway near Tokyo, Japan, Tesla Model X vehicle with Autopilot on suddenly accelerated when the car in front of it switched lanes in a common, textbook "cut-out" situation. The Tesla Model X crashed into a van, motorcycles and pedestrians that had stopped on the side of the expressway, fatally striking and killing Mr. Umeda in the first Tesla Autopilot-related (and second autonomous vehicle-related death) involving a pedestrian. The driver of the Tesla Model X was found to have been dozing shortly before the crash, and Tesla will expectedly lay all of the blame for this tragic accident on this individual. However, Tesla cannot escape from its liabilities, responsibilities, and duties that it owed specifically here, to Plaintiffs and the decedent, Yoshihiro Umeda, and to all those that share the road with its vehicles, for at least three of the following reasons.

[2] Screenshot taken from a dashcam installed on the Tesla Model X vehicle. The Tesla Model X vehicle is not parked behind the group of objects, but rather, is accelerating towards them (as can be seen at the bottom right-hand corner (24km/h)) and thereafter crashing into them. Records from the Tesla Model X's Event Data Recorder (EDR) indicated that the vehicle had accelerated to approximately 38.1 km/h prior to impact.

4. First, the accident highlights the patent defect of Tesla's Autopilot technology and suite of driver assistance features, particularly in regards to Tesla's driver monitoring system, which relies on tracking driver-applied changes to the steering wheel torque to detect whether the driver's hands are on the wheel. Here, according to Tesla's own data log, the driver of the Tesla Model X had both hands on the steering wheel right before and when the incident occurred. Despite the fact that the driver was operating the Tesla Model X as instructed, with both hands on the steering wheel, for nearly thirty minutes before the incident, Tesla's driver monitoring system did not issue any alerts as the driver began to lose focus on driving as he began to doze off. Tesla has been aware of and has long known that driver inattentiveness and drowsiness is a risk keyed to overreliance on autonomous driving technologies such as Tesla's Autopilot system.

5. Despite this knowledge, Tesla has refused to implement superior mechanisms to monitor drivers such as driver-facing cameras and sensors to detect eye and/or head movement to check driver awareness, instead relying on its defective method of tracking driver-applied changes to the steering wheel torque. Still, to this day, Tesla continues to rely upon the same, ineffective method of measuring the levels of driver engagement by determining steering-wheel torque. Tesla's blatant refusal to adopt or incorporate additional safeguards and methods in which driver awareness, alertness, and engagement are effectively monitored serves as testament to the lack of meaningful regulatory oversight of Tesla's development of its Autopilot system and the related suite of technologies that run together with it. Tesla intentionally chose not to implement additional, more effective, methods to detect driver engagement and must be held liable where it has long known of the risks and dangers that are inherent to the development of autonomous vehicle technology.

6. Second, in this case when the vehicle in front of the Tesla Model X switched lanes the Tesla Autopilot suite of technologies failed to recognize the stationary van, motorcycles, and pedestrians ahead and engage the automatic emergency braking system. Instead, the Tesla Model X automatically began to accelerate to the preset cruising speed before crashing into these objects and people and killing Mr. Umeda. Despite knowing that common lane switching scenarios involving "cut-out" and "cut-in"

situations is something that drivers will almost always certainly encounter, Tesla failed to develop reasonable measures and safeguards against the dangers that these types of scenarios present to drivers. Specifically, Tesla failed to develop adequately safe software that would require affirmative action from the driver, such as requiring that the driver confirm by taking some type of action to indicate that the road ahead is indeed clear and free of any objects, cars, or pedestrians. Tesla's failure to implement these software and coding enabled features and requirements to its driver assistance features detracts from the encouragement of driver safety and attention. These failures are especially egregious where Tesla knows the specific limitations and issues with its Autopilot technology and suite of driver assistance features yet continues to widely tout and suggest to world that its cars are essentially autonomous. Punitive and exemplary damages are necessary to deter this conduct and preliminary injunctive relief must be granted here when doing so will prevent any further risks of loss of human life.

7. Third, Tesla's system is fatally flawed and is a half-baked, non-market-ready product that requires the constant collection of data in order to improve upon the existing virtual world that Tesla is trying to create. The inherent problem and issue with Tesla's Autopilot technology and suite of driver assistance features is that this technology will inevitably be unable to predict every potential scenario that lie ahead of its vehicles. In other words, in situations that occur in the real world but are uncommon and have not been "perceived" by Tesla's system, or in "fringe cases" involving specific scenarios that the system cannot or has not processed before and pose a great risk to human safety such as in the instant case, actual deaths will occur. While Tesla is a proponent of this natural, organic method of collecting and processing data by using AI, there are alternative methods such as the use of light detection and radar technologies (LIDAR) that would come closer to the zero margin of error that should be the standard. Tesla was undeniably aware of the problems inherent within the method it has chosen to utilize in its pursuit for autonomous vehicles.

8. Tesla's decision to release a half-baked product to the public that is currently still in a "beta-testing" stage of development continues to put the general public, other motorists, and all of those who share the road with Tesla's vehicles, including pedestrians and the drivers of Tesla's vehicles

themselves, at risk of becoming the next casualty (for Tesla, it would likely be viewed as merely just a small statistic that should be overlooked in comparison to its pursuit of creating a full-self driving vehicle). Tesla should be held culpable for its conduct and acts committed in marketing its vehicles with reckless disregard for motorists and the general public around the world.

9. Prior to and after the fatal crash and death of Mr. Umeda, Tesla knew or should have known that it was selling a dangerously defective product. Despite having such knowledge of the potential for misuse and risks associated with its Autopilot system, Tesla has refused to recall its cars and continues to fail to take any corrective measures. Reasonable and cost-effective measures exist, but Tesla simply chooses not to implement them. The consequences of Tesla's liability therefore go beyond compensation to the family of the deceased here and extend to drivers and the general public wherever Tesla markets its vehicles.

10. Could the first case of a Tesla Autopilot-related pedestrian fatality have been avoided? While it will not change the reality of the loss for Plaintiffs Tomomi and Miyu Umeda, the answer to the question is undeniably yes. If Tesla's past behavior of blaming its vehicles' drivers is any example, Tesla likely will portray this accident as the sole result of a drowsy, inattentive driver in order to distract from the obvious shortcomings of its automated driver assistance technology.[3] Any such effort would be baseless. Mr. Umeda's tragic death would have been avoided but for the substantial defects in Tesla's Autopilot system and suite of technologies, Tesla's knowing and intentional release of a technology that is still in the "beta-testing" stage, Tesla's willful disregard of recommendations by government safety regulators, and Tesla's ongoing failure to take reasonable steps to design and sell a product to consumers that utilizes existing safer alternatives, including Tesla's resistance to employing readily available and easily incorporated superior methods to monitor driver engagement and Tesla's unmerited defiance against adopting the use of LIDAR technology.

[3] Lee, Timothy B. "Tesla Blames Driver in Last Month's Crash with Autopilot Engaged" April 12, 2018, ars Technica. (https://arstechnica.com/cars/2018/04/tesla-says-crash-victim-was-well-aware-that-autopilot-was-not-perfect/) (last visited Apr. 19, 2020).

II. PARTIES

11. Plaintiff Tomomi Umeda, individually and on behalf of the Estate of Yoshihiro Umeda, deceased, is the spouse of Yoshihiro Umeda. Plaintiff Tomomi Umeda is an adult citizen and resident of Japan.

12. Plaintiff Miyu Umeda, individually and on behalf of the Estate of Yoshihiro Umeda, deceased, is the daughter of Yoshihiro Umeda, and was a minor at the time of the incident. Plaintiff Miyu Umeda is currently an adult citizen and resident of Japan.

13. Defendant Tesla, Inc., d/b/a/ Tesla Motors, Inc. is a Delaware corporation with its headquarters and principal place of business in Palo Alto, California.

14. Tesla is an automobile manufacturer of electric vehicles and designs, manufactures, markets, distributes and sells exclusively electric vehicles with Tesla's proprietary Autopilot technology. Tesla ratified every act, omission, or other alleged conduct herein, thereby proximately causing the injuries and damages incurred by Plaintiffs and decedent Yoshihiro Umeda.

15. Upon information and belief, DOES 1-10 are individuals and corporations with their primary place of business or residence in California, or who directed their activities towards the State of California and/or have minimum contacts with the State.

16. Plaintiffs are informed, believe and hereby allege that each defendant named herein as DOES 1-10 are those persons, individuals, corporations, other legal entities, and/or successor-in-interest of any of those entities described above and herein, whose wrongful conduct either caused or contributed to the causing of harm, injury, and damage to Plaintiffs.

III. JURISDICTION AND VENUE

17. Plaintiffs bring this action and the instant complaint under federal diversity jurisdiction pursuant to 28 U.S.C. section 1332 and complete diversity between all parties herein exists. Tesla is a Delaware corporation with its principal place of business in Palo Alto, California. Plaintiffs are Japanese citizens and residents of Japan. The amount in controversy exceeds $75,000.

18. On information and belief, Tesla was, and is at all material times hereto, in the business of manufacturing, designing, testing, assembling, supplying, selling, exporting and distributing its Model S,

X, 3, and Y vehicles, and Tesla's Autopilot technology and suite of driver assistance features. Tesla's headquarters office is located within this judicial district and in the city of Palo Alto, California. On further information and belief, since 2012, Tesla designed, manufactured, distributed, marketed and sold the Tesla Model S and X vehicles in the United States, with the largest concentration of both vehicles being sold in the State of California, as well as in other countries including Japan.

19. On information and belief, through Tesla's publicly filed financial reports and its website, Tesla's design, testing, and manufacturing of its vehicles, including the Class Vehicles at its headquarters in California and throughout the State of California. Tesla's advertising, promotional materials, and website are designed to show the operation of various Tesla vehicles in a manner which emanates that its vehicles are from California. Tesla also utilizes promotional videos which are purporting to show the operation of Model S, X, and other Tesla vehicles being operated and driven in California. On further information and belief, Tesla, develops, designs, tests, assembles, supplies, sells, collects date, and otherwise makes decisions as to the implementation of its use and policies regarding its Autopilot technology and suite of driver assistance features in the State of California, with most, if not all of the key decisions regarding the same having emanated from this judicial district.

20. Venue is proper in this judicial district under 28 U.S.C. § 1391 because a substantial part of the events or omissions giving rise to Plaintiffs' claims occurred in this judicial district. Furthermore, Tesla's principal place of business in in this judicial district, and it is believed, and therefore alleged, that a substantial amount of the conduct of which Plaintiffs' complaint is based upon comes as a result of Tesla's acts that occurred in this judicial district. The claims herein concern defects in Tesla's Autopilot suite of technologies, about which Plaintiffs allege Tesla knew or should have known prior to and since April 29, 2018, and Plaintiffs intend to seek relevant and material evidence in Tesla's possession, custody, or control, including witness evidence, which, on information and belief, is located in Tesla's headquarters. Additionally, the San Jose division of this Court is the proper division for filing given the fact that Tesla's headquarters is in Palo Alto, California.

21. Additionally, venue is proper, and this case is most suited for adjudication within this judicial district, as the public interest factors heavily outweigh any potential inconvenience that litigation of this matter in this forum could involve, if any. The overwhelming majority of Tesla vehicles sold have been sold to California consumers and the subject matter of the instant case involves Autopilot technology that is present in most, if not all, of the vehicles sold by Tesla that are on the road today. Furthermore, the fact that the instant case involves defects and/or other causes of action that would encompass many California consumers and purchasers of Tesla's vehicles supports the fact that venue is proper and necessary for the public interest.

22. Furthermore, while it is true that the instant case arises from a traffic accident that occurred in Japan, this Court should retain jurisdiction over this matter as this Court is best situated to issue and grant a remedy in the form of preliminary and permanent injunctive relief. The problems that have arisen from Tesla's conduct have global implications and it should be within the interest of this Court to retain jurisdiction where Tesla's actions or inactions, and the decisions behind and prior to making the same, all emanated from the district in which the Court is presently situated. By retaining jurisdiction here, the Court would be promoting the principle that the United States of America is a leader in the global effort of achieving safer streets and highways in conjunction with the development of autonomous vehicle technology. The consequences of not having the instant case litigated and decided on its merits in this forum will be to delay adjudication of these same issues after more people have been injured or killed in Tesla Autopilot-related accidents. Plaintiffs' decision to bring the instant case in this forum should serve as testament to the good faith intentions and motivations of seeking justice, relief, and remedies that not only affect the parties involved here, but also the general public in the US and worldwide.

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IV. FACTUAL ALLEGATIONS

A. World's First Tesla Autopilot-Related Pedestrian Fatality: The April 29, 2018 Accident Involving a Tesla Model X Vehicle and Mr. Umeda in Kanagawa, Japan

23. On April 29, 2018, a group of motorcyclists was gathered, along with their motorcycles, and parked behind a small van on the far-right lane of the Tomei Expressway in Kanagawa, Japan nearby Tokyo, Japan. The group had stopped following an accident involving an individual that was riding with the group. The decedent, then 44-year-old Yoshihiro Umeda, was part of this group and was standing alongside several motorcycles which were parked in an effort to redirect traffic away from the scene of the accident in order to provide aid and assistance to a friend that had been involved in a separate, unrelated traffic collision that occurred earlier.

24. At or around 2:11 p.m., the driver of a 2016 Tesla Model X vehicle had entered onto the Tomei Expressway, and the driver turned on the Autopilot function of his Tesla vehicle. The Tesla proceeded along the highway for approximately 30 minutes without incident while Tesla's Autopilot system and related suite of technologies, including Traffic Aware Cruise Control, Autosteer, and Auto Lane Change, kept the vehicle cruising along the far right lane and tracking another vehicle in front of it.

25. At approximately 2:22 p.m., Tesla's Autopilot technology and suite of driver assistance features, specifically the method used by the same in measuring steering-wheel torque to determine driver engagement and awareness, detected the driver's hands on the steering wheel, as measured by the Event Data Recorder (EDR) data that was collected from the Tesla Model X Vehicle.

26. At approximately 2:49 p.m., the vehicle that the Tesla had been tracking in front slowed down considerably and indicated by its traffic blinkers that it was preparing to switch to the immediate left-hand lane, in order to avoid the group of parked motorcycles, pedestrians, and van that were ahead of it. At some point before 2:49 p.m., the drive of the Tesla vehicle began to feel drowsy and had begun to doze off.

27. As the vehicle in front of the Tesla Model X "cut-out" of the lane and successfully changed to the immediate left-hand lane and, the Tesla vehicle, which had been was traveling at a relatively low speed, began to accelerate automatically to the speed that its driver had previously set when Tesla's

Traffic Aware Cruise Control (TACC) feature was engaged. Therefore, the Tesla began rapidly accelerating from about 15 km/h to approximately 38 km/h.

28. The Tesla Model X's sensors and forward-facing cameras did not recognize the parked motorcycles, pedestrians, and van that were directly in its path, and it continued accelerating forward until striking the motorcycles and Mr. Umeda, thereby crushing and killing Mr. Umeda as the Tesla Model X ran over his body.

29. This entire incident occurred without any actual input or action taken by the driver of the Tesla vehicle, except that the driver had his hands on the steering wheel as measured by Tesla's Autosteer system. Indeed, the Tesla Model X was equipped with an Event Data Recorder (EDR) which is intended to enable Tesla to collect data and record information from its vehicles and also provides information on various processes of the vehicle's functioning systems when a crash occurs. The information regarding vehicle speed as extracted from the Tesla Model X provides proof of the foregoing facts.

30. Plaintiffs are informed and believe and thereon allege that the Tesla Model X and Tesla's Autopilot technology and suite of driver assistance features was defective at the time of its manufacture, design, development, production, assembly, building, testing, inspection, installation, equipping, endorsement, exportation, importation, wholesaling, retailing, selling, renting, leasing, modification, and repair and entrustment, and that it failed to meet the reasonable expectations of safety of Plaintiffs' and the general public, and that any benefits derived from the design of the Tesla Model X and Tesla's Autopilot features were substantially outweighed by the risk of harm inherent in said design, in that, and not by way of limitation, despite the availability to Tesla of safer alternative designs, Tesla Model X presented a substantial and unreasonable risk of death or injury to the users of said vehicle and those in the vicinity of its use.

31. Specifically, Plaintiffs are informed and believe and thereon allege that Tesla's vehicles, including the Tesla Model X, was defective in its design, construction, assembly and manufacture and dangerous to users and occupants thereof, in that, among other things and not by way of limitation, the Tesla Model X was prone to the risk of driver overreliance on Tesla's Autopilot technology and its suite

of driver assistance features. Rather than promoting the need for constant driver engagement and awareness while operating the Tesla Model X vehicle and Tesla's Autopilot features, the defective design, construction, assembly and manufacturer of Tesla's Autopilot technology and suite of driver assistance features, including Tesla's system of vision processing failed to detect objects that would otherwise be reasonably expected to appear while driving. As a result of the defects in Tesla's Autopilot technology and driver assistance features, and failure to identify these objects, the Tesla Model X accelerated towards the group of objects and also failed to engage the Automatic Emergency Braking function. Each and all these defects, both specifically and in general, would not be recognized by the ordinary user, and Tesla failed to provide adequate warnings of such dangers.

32. Additionally, Plaintiffs are informed and believe and thereon allege that prior to the sale of its vehicles, including the Tesla Model X, Tesla knew of such defects and the defective conditions as described herein. Plaintiffs are further informed and believe and thereon allege that Tesla, through its officers, directors, and managing agents, had prior notice and knowledge from several sources, including but not limited to the results of crash testing, internal memoranda and correspondence, industry publications, government regulatory research, actual data collected from similar incidents which caused damages, both to property and to persons, for which Tesla knew that its vehicles were defective and presented a substantial and unreasonable risk of harm to the general public, including pedestrians and decedent Yoshihiro Umeda, in that said defects unreasonably subjected persons to injury as a result of failure in the event of foreseeable situations that could foreseeably result in motor vehicle accidents involving drivers and pedestrians alike.

33. Despite such knowledge, Tesla, acting through its officers, directors, and managing agents, for the purpose of enhancing profits, knowingly and deliberately failed to remedy or otherwise take corrective action to fix the known defects in said vehicles, failed to warn the public, including decedent Yoshihiro Umeda, of the extreme risk of injury that could result and be occasioned by said defects. Tesla intentionally proceeded with the design, manufacture, sale, distribution and marketing of said vehicles, knowing that motorists, pedestrians, and the general public would be exposed to serious potential danger

in an effort to advance Tesla's own pecuniary interest. Tesla's conduct was carried out in a manner by Tesla with a willful, conscious, and reckless disregard for the safety of Plaintiffs, decedent Yoshihiro Umeda, Tesla's drivers, other motorists, pedestrians, and the general public worldwide, entitling Plaintiffs to exemplary damages under California Civil Code Section 3294.

34. As a result of Tesla's negligent and wrongful conduct, decedent Yoshihiro Umeda sustained serious personal injuries, which resulted in his death.

35. As a further result of Tesla's conduct, Plaintiffs incurred property and other pecuniary losses as a result of the actions and inactions of Tesla as described herein.

36. As a further result of Tesla's conduct, Plaintiffs suffered both past and future economic damages as a result of Tesla's actions and inactions described herein.

37. As a further direct and proximate result of the acts and omissions of Tesla, Plaintiffs have incurred general damages in an amount according to proof at trial.

B. Tesla's Method of Measuring Steering Wheel Torque to Determine Driver Engagement is a Fatally Defective Flaw in Tesla's Autopilot Driver Monitoring System

38. In a letter addressed to the Honorable Edward J. Markey, United States Senator, Tesla responded to growing fears and legitimate concerns over its Autopilot technology by saying that "our customers are safer using Autopilot than not using Autopilot."[4] While Tesla manifestly has a duty to its customers to provide a safe and defect-free product, the duty is not limited only to Tesla's customers. Tesla has touted its vehicles as "computers on wheels," and Tesla receives data on their operation from around the world. Yet as this case shows, beneath the veneer of technical sophistication Tesla has failed to adopt reasonably available and safer technological alternatives and continues to disregard recommendations from United States federal safety regulators and others. Consequently, Tesla is endangering the lives not only of its own customers, but the lives of the general public as well.

[4] Veitch, Alexandra N., Tesla. "Re: Responsible Driving with Autopilot" December 20, 2019. (https://www.markey.senate.gov/imo/media/doc/Tesla%20Autopilot%20Response.pdf) (last accessed Apr. 19, 2020).

39. Tesla's Autopilot system navigates roadways by detecting lane markings and predicting the path of the vehicle's travel lane. These predictions are made by the vehicle's imaging system, cameras, and the car's computing software. Tesla's Autopilot technology package is a combination of systems that control the vehicle speed and path by automated control of braking, steering, and torque to the drive motors. All actions of predicting the lane and actuating steering are determined by the vehicle's vision system. Tesla has acknowledged that, its Autosteer technology is subject to circumstances that can impair system operation and is described as particularly unlikely to operate in situations when unable to determine lane markings accurately, or when bright light is interfering with the camera's view, visibility is poor, or the windshield area in the camera's view is obstructed.[5]

40. In terms of how Tesla's Autopilot technology and suite of driver assistance features monitors drivers while the vehicle is in operation, Tesla's system monitors driver-applied changes to the steering wheel torque to detect whether the driver's hands are on the steering wheel. If drivers remove their hands from the steering wheel for a specified amount of time, the system produces a series of "hands-off" warnings, starting with a visual alert and proceeding to chime sounds.[6] According to the U.S. National Transportation Safety Board (NTSB), based on its design, in an SAE-defined (Society of Automotive Engineers) Level 2 partial automation system such as Tesla's, Autopilot drivers in principle have the

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[5] Tesla Model X Owner's Manual, 2017.46. November 13, 2017. (http://dig.abclocal.go.com/kgo/PDF/model_x_owners_manual_north_america_en.pdf) (last accessed Apr. 23, 2020).

[6] *See also* National Highway Traffic Safety Administration (NHTSA), "ODI RESUME PE16-007", January 19, 2017, https://static.nhtsa.gov/odi/inv/2016/INCLA-PE16007-7876.PDF (last accessed Mar. 28, 2020). "Tesla monitors driver engagement through the interactions with the steering wheel, turn signal, and TACC speed setting stalk. If the system does not detect the driver's hands on the steering wheel (assessed using micro torque measurements) or other signs of driver engagement for periods of time that vary depending on road class, vehicle speed, road curvature, and traffic conditions, an escalating series of warnings is presented. The warnings start with a visual alert indicating that hands on the steering wheel are required. If the driver does not respond to the visual warning, an audible chime is sounded after 15 seconds. A more pronounced chime is initiated if the driver does not respond after another 10 seconds. If the driver fails to respond to the third alert stage within five seconds, the system gradually slows the vehicle while maintaining position in the lane. Once the driver's hands are detected on the steering wheel, the warnings are suspended and Autopilot operation resumes."

responsibility "to monitor the automation, maintain situational awareness of traffic conditions, understand the limitations of the automation, and be available to intervene and take over for the driving automation system at all times."[7] However, NTSB explained further, "**In practice … drivers are poor at monitoring automation and do not perform well on tasks requiring passive vigilance. Research shows that drivers often become disengaged from the driving task for both momentary and prolonged periods during automated phases of driving**."[8] (Emphasis added.)

41. The NTSB's assessment was based on investigations of four accidents between 2016 and 2019 involving Tesla vehicles with the Autopilot system engaged. In the first accident, in Williston, Florida on May 7, 2016, a Tesla Model S70D collided with a truck and the driver of the Tesla died in the crash. System performance data downloaded from the car indicated that the driver was operating it using the Traffic-Aware Cruise Control and Autosteer lane-keeping systems, which are automated vehicle control systems within Tesla's Autopilot suite. Being the first known fatal accident and death in the United States involving the use of Tesla's Autopilot system, the NTSB investigation focused on several safety issues including, the operational design domains for SAE International Level 2 vehicle automation, surrogate means of determining the automated vehicle driver's degree of engagement, event data recorders for automated vehicles, safety metrics and exposure data for automated vehicles, and connected vehicle technology and vehicle-to-vehicle requirements.

42. The NTSB determined that the probable cause of the crash was the truck driver's failure to yield the right of way to the car, combined with the Tesla driver's inattention due to overreliance on vehicle automation, which resulted in the Tesla driver's lack of reaction to the presence of the truck. The NTSB specifically found that:

> Contributing to the car driver's overreliance on the vehicle automation **was its operational design, which permitted his prolonged disengagement from the driving task and his use of the automation in ways inconsistent**

[7] *Id.*

[8] *Id.* at 11. (citations omitted)

> **with guidance and warnings from the manufacturer**. [9] (Emphasis added.)

43. Regarding the method that Tesla uses to monitor a driver's degree of engagement, the NTSB stated:

> Manufacturers try to make systems safer by encouraging driver engagement through the incorporation of design solutions that monitor driver behavior and issue warnings when engagement seems lacking. Several vehicle models with Level 2 automated systems use steering wheel torque to monitor driver engagement. **However, driving is a highly visual task, so the driver's touching the steering wheel may not accurately indicate that he or she is fully engaged with the driving task. Simply checking whether the driver has placed a hand on the steering wheel gives little indication of where the driver is focusing his or her attention. The NTSB concludes that because driving is an inherently visual task and a driver may touch the steering wheel without visually assessing the roadway, traffic conditions, or vehicle control system performance, monitoring steering wheel torque provides a poor surrogate means of determining the automated vehicle driver's degree of engagement with the driving task**. [10] (Emphasis added.)

44. The NTSB also cited evidence of several other vehicle manufacturers' efforts to monitor driver engagement, such as the use of eye-tracking cameras, which have long been used in driving simulation research. Companies such as Toyota have deployed eye-tracking systems on its Lexus brand vehicles, and the "Driver Attention System" on the 2018 Cadillac CT6 Super Cruise vehicle uses a small camera located at the top of the steering column which focuses exclusively on the driver and uses infrared light to track the driver's head position. Based on the lack of reaction from the driver of the Williston, Florida Tesla vehicle to the truck's presence, the NTSB concluded:

> **[T]he Tesla Autopilot system monitored and responded to the driver's interaction with the steering [which] was not an effective method of ensuring driver engagement.** Therefore, **the NTSB recommends that**

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[9] NTSB, "Highway Accident Report HAR-17/02 PB2017-102600" adopted September 12, 2017, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1702.pdf (last accessed March 26, 2020).

[10] *Id.*

> **manufacturers of vehicles equipped with Level 2 vehicle automation systems develop applications to more effectively sense the driver's level of engagement and alert the driver when engagement is lacking while automated vehicle control systems are in use.** [11] (Emphasis added.)

45. After concluding its investigation, the NTSB made several safety recommendations to the U.S. Department of Transportation, NHTSA, and manufacturers of vehicles equipped with Level 2 vehicle automation systems, with Tesla included as one of the six such manufacturers. The NTSB issued Safety Recommendation H-17-042:

> **Recommendation**: TO THE MANUFACTURERS OF VEHICLES EQUIPPED WITH LEVEL 2 VEHICLE AUTOMATION SYSTEMS (VOLKSWAGEN GROUP OF AMERICA, BMW OF NORTH AMERICA, NISSAN GROUP OF NORTH AMERICA, MERCEDES-BENZ USA, **TESLA INC.**, AND VOLVO GROUP NORTH AMERICA): **Develop applications to more effectively sense the driver's level of engagement and alert the driver when engagement is lacking while automated vehicle control systems are in use**. [12] (Emphasis added.)

46. Out of the six auto manufacturers above that were subject to the NTSB's safety recommendation, Tesla is the only automaker that has yet to file an official response, and as of the date of the instant pleading, has continued to fail in providing a response. Tesla champions its case for automated and driver assistance technologies (albeit based upon dubious statistics[13]) and claims that its cars set industry standards for safety. Accordingly, it is difficult to comprehend why Tesla has failed to provide an official response to the NTSB on the topic of driver monitoring features and driver alert systems.

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[11] *Id*. at p. 36.

[12] NTSB Safety Recommendation HAR-17-02, September 28, 2018, https://www.ntsb.gov/investigations/AccidentReports/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-17-042. (last accessed on Mar. 14, 2020).

[13] Eliot, Lance. "Tesla Autopilot Safety Stats Said Imbued With Statistical Fallacies, Interpret Cautiously" June 9, 2019, https://www.forbes.com/sites/lanceeliot/2019/06/09/tesla-autopilot-safety-stats-said-imbued-with-statistical-fallacies-interpret-cautiously/ (last visited Mar. 27, 2020).

47. In a second accident investigated by the NTSB, on January 22, 2018, a 2014 Tesla Model S P85 car was traveling behind another vehicle in the high-occupancy vehicle (HOV) lane of an interstate in Culver City, California. Because of a collision that happened about 25 minutes earlier, a California Highway Patrol (CHP) vehicle was parked on the left shoulder of the Interstate and a Culver City Fire Department truck was parked diagonally across the southbound HOV lane. The emergency lights were active on both the CHP vehicle and the fire truck. Nonetheless, the Tesla remained in the HOV lane, accelerated, and struck the rear of the fire truck at a recorded speed of about 31 mph. The Tesla was equipped with advanced driver assistance systems, including Autopilot. Based on the driver's statements and on performance data downloaded from the car after the crash, it was determined that Autopilot was engaged at the time of the collision.

Rear-End Collision Between a Car Operating with Advanced Driver Assistance Systems and a Stationary Fire Truck, Culver City, California, January 22, 2018

Figure 1. View of crash scene showing striking vehicle in HOV lane behind fire truck, southbound I-405, Culver City, California. (Source: CHP)

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48. The NTSB determined that the probable cause of this accident was the Tesla driver's lack of response to the stationary fire truck in his travel lane, due to inattention and overreliance on the vehicle's advanced driver assistance system; the Tesla's Autopilot design, which permitted the driver to disengage from the driving task; and the driver's use of the system in ways inconsistent with guidance and warnings from the manufacturer.[15]

49. In the third accident investigated by the NTSB, in Mountain View, California, on March 23, 2018, another Tesla vehicle with the Autopilot system suite was approached the gore area on a highway (a gore is a triangular area located in between the lanes of a highway on either an entrance or an exit ramp). The Tesla vehicle, with Autopilot enabled and on at the time of the accident, drove straight through the gore area and struck a highway crash attenuator at a speed of approximately 71 mph, killing the driver. [16]

50. The NTSB a identified a number of factors that contributed to the accident, including driver distraction and highway infrastructure issues.[17] In particular, based on the Mountain View, California and earlier accidents, the NTSB identified safety issues with risk mitigation pertaining to monitoring driver engagement:

> **The Tesla Autopilot system did not provide an effective means of monitoring the driver's level of engagement with the driving task, and the timing of alerts and warnings was insufficient to elicit the driver's**

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[14] National Transportation Safety Board. "Highway Accident Brief HWY18FH004" August 22, 2019.

[15] NTSB News Release, September 4, 2019. "Driver Errors, Advanced Driver Assistance System Design, Led to Highway Crash" (https://www.ntsb.gov/news/press-releases/Pages/NR20190904.aspx) (last visited Apr. 23, 2020).

[16] NTSB, "Highway Accident Report NTSB/HAR-20/01", adopt. February 25, 2020, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR2001.pdf (last accessed Mar. 27, 2020).

[17] *Id.*

> **response to prevent the crash or mitigate its severity**. [18] (Emphasis added.

51. As a result, the NTSB determined that the monitoring of driver-applied steering wheel torque is an ineffective surrogate measure of driver engagement and recommended that:

> **[r]equirements are needed for driver monitoring systems for advanced driver assistance systems that provide partial driving automation (SAE Level 2 systems), and Tesla needs to develop applications that more effectively sense the driver's level of engagement and that alert drivers who are not engaged.**19 (Emphasis added.)

Figure 7. Northbound view of the crash scene before the Tesla was engulfed in flames. (Source: witness S. Engleman)

52. In addition, the NTSB found that other issues for the Mountain View, California crash were to blame, such as limitations of Tesla's collision avoidance systems:

[18] *Id.*

[19] *Id.*

> **The Tesla's collision avoidance systems were not designed to, and did not detect the crash attenuator. Because this object was not detected, (a) Autopilot accelerated the SUV to a higher speed, which the driver had previously set by using adaptive cruise control, (b) the forward collision warning did not provide an alert, and (c) the automatic emergency braking did not activate**.[20] (Emphasis added.)

53. Accordingly, the NTSB concluded that Tesla's collision avoidance system was ineffective in this incident as it failed to detect the potential hazard and warn the driver. The NTSB also found that the Tesla's collision avoidance systems were not designed to, and did not, detect the crash attenuator at the end of the gore, and that consequently the forward collision warning system did not provide an alert and the automatic emergency breaking did not activate.

54. The fourth accident the NTSB investigated occurred on March 1, 2019, when a 2018 Tesla Model 3 with Autopilot enabled struck into the side of a semitrailer truck-tractor in Delray Beach, Florida. The NTSB determined that the probable cause was the truck driver's failure to yield the right of way to the Tesla car, combined with the Tesla driver's inattention due to overreliance on automation, which resulted in his failure to react to the presence of the truck-tractor.[21]

55. The NTSB also found that one of the contributing factors to the crash was the "**operational design of Tesla's partial automation system, which permitted disengagement by the driver" in a manner similar to the situation in the Williston, Florida accident**."[22] The NTSB stated: "**The way the Tesla Autopilot system monitored and responded to the driver's interaction with the steering wheel was not an effective method of ensuring driver engagement**."[23]

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[20] *Id.*

[21] NTSB, "Highway Accident Brief: Collision Between Car Operating with Partial Driving Automation and Truck-Tractor Semitrailer – Delray Beach, Florida, March 1, 2019 Accident No. HWY19FH008", January 20, 2020, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAB2001.pdf (last accessed Mar. 28, 2020).

[22] *Id.* (*emph. add).*

[23] *Id.* (*emph. add).*

56. Reviewing the four accidents involving Tesla vehicles with the Autopilot suite of technologies enabled which it had investigated, the NTSB provided the following general evaluation of Tesla's system to monitor driver engagement:

> Driver disengagement from supervising Autopilot's partial automation was a critical factor in the four Tesla crashes the NTSB investigated. In the Mountain View and Culver City crashes, the drivers were found to be distracted and not supervising Autopilot's performance or monitoring the driving environment (detecting and recognizing roadway hazards) leading up to the crash. Likewise, in the Williston and Delray Beach crashes, the drivers were inattentive and did not take any evasive action in response to the semitrailer vehicles crossing the paths of their cars. **Autopilot assesses a driver's level of engagement by monitoring his or her interaction with the steering wheel through changes in steering wheel torque. However, because driving is an inherently visual task, a driver's touch or torque on the steering wheel is an ineffective method to determine whether he or she is fully engaged with the driving task. Simply checking whether the driver has placed a hand on the steering wheel gives little indication of where the driver is focusing his or her attention.**[24] (Emphasis added.)

57. In the accident involving Mr. Umeda, Tesla's Autopilot system merely detected that the driver had his hands on the steering wheel and failed to detect the true level of engagement of the vehicle's driver. By using the "hands-on steering wheel" method of determining and measuring driver engagement, the driver of the Tesla vehicle was able to operate the car, including in a drowsy and dozing-off state, for approximately 30 minutes prior to and up until the crash had occurred.

58. Tesla should have implemented more effective driver-engagement monitoring systems, including using such systems as a back-up to serve as a secondary line of safety where Tesla's current method of measuring steering-wheel torque is not effective or in the event of malfunction. Tesla was and is aware of the limitations regarding its use of steering-wheel torque to measure driver-engagement, but Tesla has continued to employ this method alone. Alternative methods of driver-engagement monitoring, such as the use of a camera and/or other device to track a driver's eye movements and/or head position, are leading examples of systems that other carmakers have introduced and currently use. More

[24] NTSB, "Highway Accident Report NTSB/HAR-20/01" (Mountain View, CA Crash), *supra.*

specifically, automakers such as Toyota Motor Corporation and Ford Motor Company have implemented different methods to monitor driver-engagement that are described in a 2014 report by NHTSA and distributed by the U.S. Department of Transportation, Research and Innovative Technology Administration Intelligent Transportation System Joint Program Office, which provides some key examples of driver monitoring techniques employed by other automakers:

> **Driver Monitoring**
>
> Toyota Motor Corporation (2013a, 2013b) described their driver-monitoring system, **which constantly monitors the movement of the driver's head when looking from side to side.** If the driver's head is turned away from the road when the system detects a probable collision, the system will automatically sound a pre-crash warning alarm. If the situation persists, it will briefly apply the brakes. If the driver does not then respond immediately, all automated emergency braking functions will engage…"
>
> Ford Motor Company (2012b) described the company's activities to use sensor data from driver assistance systems, plus biometric data, to develop new methods to estimate driver workload based on traffic and road conditions. The driver workload estimator uses data from active safety sensors plus information on the driver's use of the throttle, brakes, and steering wheel. Side-looking radar sensors used for blind spot monitoring and the forward-looking camera for the LDWS are continuously active, such that the intensity of the traffic situation around the subject vehicle can be estimated. Biometric data sources include several sensors added to the steering wheel rim and spokes to get more detailed driver information, such as the driver's heart rate. **Infrared sensors on the steering wheel monitor the palms of a driver's hands as well as his or her face, looking for changes in temperature (a downward looking infrared sensor under the steering column measures the cabin temperature to provide a baseline for comparing changes in the driver's temperature). Additionally, a sensor is embedded in the seat belt to assess the driver's breathing rate. Ford noted that, with a more complete picture of the driver's health and wellness along with knowledge of what is happening outside the vehicle, the car will have the intelligence to dynamically adjust the alerts provided to the driver and filter interruptions** (Ford Motor Company, 2012b). For instance, in heavy traffic, the vehicle control system could increase the warning times for forward collision alerts and automatically filter out phone calls and messages, allowing the driver more time to respond. When the vehicle is on the open road and the driver is assessed as alert, incoming calls could be presented.

> **In addition, Mattern (2013) noted that awareness of the driver can be facilitated by monitoring eyes, head, pulse, and potentially an "Alive Switch" (i.e., a switch that needs to be triggered by a driver in defined regularity).**[25] (Emphasis added.)

59. These alternative methods to monitor driver engagement and awareness are available and can be installed at reasonable cost, yet Tesla has continued to refuse implementing similar types of driver-engagement monitoring systems and incorporating them into its own technology. Had Tesla implemented more effective driver-engagement monitoring technologies like those used by other automakers, for example driver-facing cameras and devices to measure the eyes of a driver, it is very likely that the tragic accident which lead to Mr. Umeda's death would not have occurred.

60. On March 12, 2020, the Insurance Institute for Highway Safety (IIHS) published the results of research and issued a set of guidelines to automakers and suggestions for monitoring whether drivers are paying attention to the road while using automated driver assistance technologies.[26] The IIHS found, in part, that:

> The systems that are currently available either assume the driver is paying attention when his or her hands are on the wheel or use a driver-facing camera to determine if the driver's head is oriented toward the road, but neither is foolproof. The researchers recommend employing multiple monitoring methods, including using a driver-facing camera and measuring things like manual adjustments to the steering wheel and how quickly the driver responds to attention reminders. [27]

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[25] Trimble, T. E., Bishop, R., Morgan, J. F., & Blanco, M. (2014, July). *Human factors evaluation of level 2 and level 3 automated driving concepts: Past research, state of automation technology, and emerging system concepts*. (Report No. DOT HS 812 043). Washington, DC: National Highway Traffic Safety Administration. (https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/812043_hfevaluationlevel2andlevel3automateddrivingconceptsv2.pdf) (last accessed Apr. 23, 2020).

[26] IIHS, "Automated systems need stronger safeguards to keep drivers focused on the road" March 12, 2020 (https://www.iihs.org/news/detail/automated-systems-need-stronger-safeguards-to-keep-drivers-focused-on-the-road) (last accessed Apr. 19, 2020).

[27] *Id.*

61. In sum, Tesla's sole method of measuring steering-wheel torque as a means of determining driver awareness and engagement with the driving task was fatally ineffective in the instant case. Here, Tesla's Autopilot system and suite of technology determined that the driver of the Tesla Model X vehicle at issue was engaged and otherwise alert, due to the driver having had his hands on the steering wheel. Clearly this determination was erroneous – Tesla's steering-wheel torque method of measuring driver awareness failed to detect that the driver had started to become drowsy and was dozing off in the moments just prior to the crash.

62. Tesla's Autopilot technology and suite of driver assistance features was defective, and continues to be defective unless and until the dangerous problems identified by federal government regulators including the NHTSA, NTSB, and automotive safety groups like the IIHS have been addressed, that is, unless and until Tesla has complied with numerous recommendations for the adoption and use of driver-facing cameras and sensors to detect eye and/or head movement as an additional or primary method to detect driver awareness and engagement. Tesla's current and sole method of determining driver awareness by measuring steering-wheel torque falls fatally short of the standard of care and duty that it has to provide a reasonably safe and defect-free car. Tesla must be held to a greater standard of care if Tesla remains insistent on developing and producing cars that are highly autonomous and one day, self-driving. That Tesla has been well aware of the issues plaguing its Autopilot technology suite yet has failed to implement some basic and generally accepted mechanisms that would be an effective solution to inherently dangerous nature of automated vehicle technology completely justifies the imposition of punitive and exemplary damages against Tesla in this case.

C. Driver Inattentiveness and Drowsiness in Overreliance on Autonomous Driving Technologies such as Tesla's Autopilot System is Common

63. Tesla has long known that driver inattentiveness and drowsiness is a risk that is keyed to overreliance on autonomous driving technologies such as Tesla's Autopilot system. According to the Centers for Disease Control and Prevention (CDC), an estimated 1 in 25 adult drivers (aged 18 or older) report having fallen asleep while driving in the previous 30 days. Additionally, the CDC and NHSTA estimate that drowsy driving was responsible for 72,000 crashes, 44,000 injuries, and 800 deaths in 2013

alone. However, these numbers are very likely to be underestimated, and it is thought that up to 6,000 fatal crashes each year are caused by drowsy drivers. [28]

64. Tesla's cars are not immune to the sleeping-driver problem, and reports of Tesla drivers having been caught on film while falling asleep behind the wheel have recently been the subject of attention by various news and media outlets. In fact, On November 17, 2019, the *New York Times Magazine* published an article entitled "I Think This Guy Is, Like, Passed Out in His Tesla" in which it reported about cellphone-captured footage showing a man snoozing in the driver's seat of a Tesla as it sped along a road outside Las Vegas. The author of the article described the ominous sensation of watching a "human lulled to sleep inside a hunk of metal and glass, hurtling down a highway under control of proprietary algorithms beamed on board from Palo Alto." [29]

65. This was not the first case of a person caught dozing while driving with Tesla's Autopilot system engaged.[30] On August 21, 2019, a Tesla driver was captured on film while appearing completely asleep on a freeway in Los Angeles, California.[31]

66. Again, on September 8, 2019, another driver was caught who seemed to be sleeping at the wheel of a Tesla along the vehicle's passenger that was sleeping as well.[32]

67. This issue became so prominent that an article in Business Insider summed up the growing phenomenon of these events and listed of all the times Tesla drivers were caught apparently sleeping at

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[28] Centers for Disease Control and Prevention, "The Drowsy Driving Problem." https://www.cdc.gov/features/dsdrowsydriving/index.html (last accessed Apr. 19, 2020).

[29] Baker, Peter C., The New York Times Magazine, "I Think This Guy Is, Like, Passed Out In His Tesla" November 27, 2019. https://www.nytimes.com/2019/11/27/magazine/tesla-autopilot-sleeping.html (last visited Mar. 14, 2020).

[30] https://twitter.com/ClintOlivier/status/1164210028842065920?ref_src=twsrc%5Etfw

[31] https://twitter.com/SethWageWar/status/1102712751313498112.

[32] https://twitter.com/DakRandall/status/1170777292768985089?ref_src=twsrc%5Etfw

the wheel throughout 2019.[33] Tesla was doubtlessly aware of the potential for the misuse of its Autopilot system, in particular that there has been a high risk that drivers who use Tesla's Autopilot system while driving may do so in overreliance, becoming inattentive, drowsy, and event falling asleep at the wheel. Indeed, Tesla has brushed off occurrences such as those described above as nothing more than dangerous pranks or hoaxes and disclaimed any fault and liability for these actions.[34] Despite knowing that sleep-distracted driving is a dangerous but not uncommon risk, and that such occurrences could jeopardize lives, Tesla has failed to take necessary corrective action or implement readily available technologies to help address and curb this risk, in particular technologies such as driver-facing cameras and sensors to detect eye and/or head movement to detect driver awareness and engagement.

D. Tesla's Autopilot Technology and Driver Assistance Features are Defective and Incapable of Handling Common Driving Scenarios

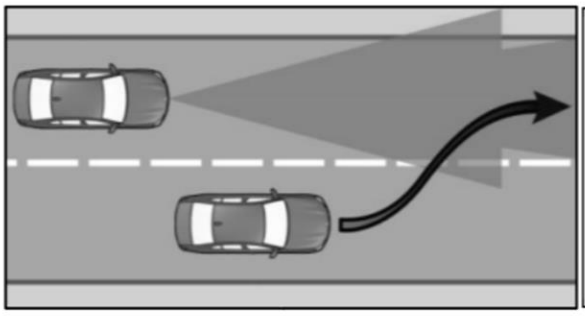
68. Adding to the issues described above, Tesla's Autopilot technology is defective and the software was programmed in a defective and/or negligent manner, specifically in regards to the way in which Tesla's Autopilot technology responds to reasonably foreseeable circumstances such as when a car in front of another car switches lanes in a "cut-in" or "cut-out' situation. In a cut-out situation (such as occurred in the accident involving Mr. Umeda), once the lead vehicle in front of a Tesla has successfully maneuvered into another lane, and assuming that there is a clear path ahead, the driver Tesla with activated Autopilot and Traffic Aware Cruise Control (TACC) that had been preset a cruising speed prior to the cut-out would not need to take any action or otherwise use the accelerator pedal in order for the vehicle to accelerate. In other words, after the Autopilot vision system has completed processing the lead car's lane

[33] Holmes, Aaron, Business Insider, "Watch these unsettling videos of all the times Tesla autopilot drivers were caught asleep at the wheel in 2019." December 2, 2019 (https://www.businessinsider.com/drivers-sleeping-in-tesla-cars-autopilot-asleep-while-driving-videos-2019-12) (last visited March 14, 2020).

[34] Lee, Timothy B. ARS Technica. Sept. 10, 2019. "Another Tesla driver apparently fell asleep—here's what Tesla could do"(https://arstechnica.com/tech-policy/2019/09/how-tesla-could-fix-its-sleeping-driver-problem/) (last visited March 14, 2020).

change, and where the system has not identified any objects or cars ahead, a Tesla would automatically accelerate towards the maximum preset cruising speed set by the driver.

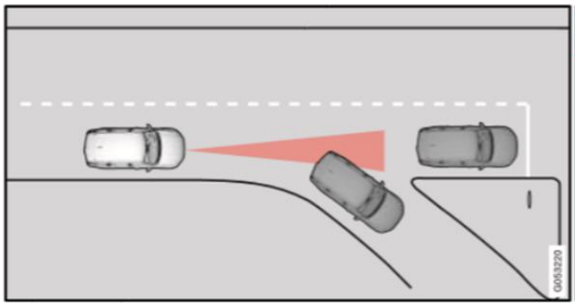
69. All SAE Level 2 automated driving systems have difficulties when dealing with common "cut-in" or 'cut-out" situations. As part of its January 19, 2017 report regarding Tesla's Autopilot system, NHTSA collected data from crashes of Tesla Model S and X vehicles involving airbag deployments that occurred while operating in, or within 15 seconds of transitioning from Tesla's Autopilot mode. Some of these crashes involved impacts from other vehicles striking the Tesla vehicles from various directions with little to no warning to the Tesla driver, and others involved scenarios known to be "outside of the state-of-technology" for current-generation Level 1 or Level 2 systems, such as cut-ins, cut-outs, and crossing path collisions.[35] As illustrated below, NHTSA's report included various diagrams consisting of warnings made by other vehicle manufacturers that detail various scenarios for which the current level of technology of systems, such as Autopilot, are unfit for.



If a vehicle driving ahead of you suddenly swerves into your lane, the system may not be able to automatically restore the selected distance. This also applies to major speed differences to vehicles driving ahead of you, e.g., when rapidly approaching a truck.

2016 BMW 7-Series Owner's Manual, page 174

Figure 8. ACC Cut-In Scenario Warning. 2016 BMW 7-Series Owner's Manual.



WARNING

If ACC changes targets from a moving vehicle to a stationary one at speeds **above** 20 mph (30 km/h), the system will **not** react to the stationary vehicle and will accelerate to the previously set speed.

The driver must actively apply the brakes to slow/stop the vehicle.

Figure 9. ACC Cut-Out Scenario Warning, 2016 Volvo XC90 Owner's Manual.

[35] NHTSA Office of Defects Investigation PE16-007, ODI Resume (https://static.nhtsa.gov/odi/inv/2016/INCLA-PE16007-7876.PDF) (last accessed Apr. 23, 2020).

70. As noted, in the accident involving Mr. Umeda, the Tesla Model X vehicle was involved in a textbook cut-out situation, where the lead car in front of the Tesla had switched over to the immediate left-hand lane. However, as described above, the Tesla was unable to recognize the objects and people that were in its path and Tesla's Autopilot and TACC system automatically engaged in acceleration in order to reach the cruising speed that the driver of the Tesla had already set.

71. Tesla's was expressly aware of the challenges that Level 2 automated driving systems face when dealing with these types of reasonably foreseeable and common driving scenarios.[36] While Tesla's Autopilot system is not the only automated driver assistance technology that faces difficulties in dealing with some common driving scenarios, such as the cut-out or cut-in situation, Tesla failed to implement reasonable safeguards in its Autopilot software as to how a Tesla vehicle should react in certain driving scenarios. More specifically, Tesla knew or should reasonably have known that certain scenarios were more difficult to handle and in the current instance of a cut-out situation, should have implemented a code in its software that would require the driver to confirm that indeed, there are no obstacles ahead, and affirmatively take action to confirm this fact by requiring the driver to engage the accelerator pedal. By implementing a code that requires driver action in response to certain driving scenarios, as opposed to allowing the car to accelerate to a preset speed without driver confirmation, Tesla could likely have prevented Mr. Umeda's death. Tesla's failure to introduce safe and effective automated vehicle driving technology and the current iterations of its Autopilot system and suite of technologies continues to pose a significant threat to Tesla drivers and those that share the road with Tesla's vehicle.

[36] Tesla has known that cut-out scenarios, in which a lead vehicle rapidly changes a lane to reveal a stationary vehicle, presents risks for drivers. In one variation of Tesla's owner's manual, the following warning is provided: "Traffic-Aware Cruise Control cannot detect all objects and may not brake/decelerate for stationary vehicles, especially in situations when you are driving over 50 mph … and a vehicle you are following moves out of your driving path and a stationary vehicle or object is in front of you instead." National Transportation Safety Board. "Highway Accident Brief HWY18FH004" August 22, 2019. Even this warning, however, does not directly address the circumstances of the accident involving Mr. Umeda, in which the speeds were well below 50 mph.

72. Perhaps even more egregious, the NHTSA found in 2017 that Tesla chose not to warn its drivers of these specific limitations or scenarios for which its Autopilot system was incapable of handling, and instead, leaving it up to the driver to imagine such situations and putting all of the burden and responsibility in this regard solely on the driver:

> **Tesla's Model S Owner's Manual is not as specific as the examples cited here; opting instead to identify a handful of scenarios under which a vehicle may not be detected,** followed by a broad warning: The limitations described above do not represent an exhaustive list of situations that may interfere with proper operation of Collision Avoidance Assist features. These features may fail to provide their intended function for many other reasons. **It is that driver's responsibility to avoid collisions by staying alert and paying attention to the area beside Model S so you can anticipate the need to take corrective action as early as possible**. [37] (Emphasis added.)

73. In short, Tesla failed to incorporate simple changes in its Autopilot technology and suite of driver assistance features, including its software, that would increase driver engagement and attentiveness with the driving task. Despite knowing that certain scenarios present more of a challenge to its Autopilot system and suite of technology, Tesla failed to implement reasonable safeguards to address such difficult situations. Tesla cannot escape liability here, where it had express knowledge of the problems and deficiencies in its Autopilot technology in the face of certain driving scenarios, and where Tesla failed to include reasonable methods that would improve driver awareness and engagement with the driving task. Tesla should be required to confront the known failures of its technology rather than be permitted to shift all responsibility to the drivers of its vehicles. Accordingly, and again, punitive and exemplary damages are warranted here.

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[37] *Id.* at 9, fn. 15.

E. Tesla's Defective Forward-Facing Cameras and Sensors and its Failure to Adopt More Effective Means of Detecting Physical Objects

74. As noted above, Tesla's Autopilot technology and suite of driver assistance features was defective in that it failed to detect the van, group of parked motorcycles and pedestrians that were in the vehicle's path.

75. Tesla's Autopilot system relies on "computer vision" that is created from the data captured by cameras and sensors which is then analyzed by using convolutional neural networks. This system can be compared with the way in which a human brain and human senses work in concert to perceive things. By collecting images and data from its vehicles, globally, Tesla is attempting to build what is essentially a computer-generated, virtual reality-like world, or as Tesla calls it, its 'Neural Network," which requires the use of artificial intelligence (AI) and computer processing in order to maneuver. While the end result that Tesla envisions may someday eventually be attained and operable with zero risk and absolutely no margin for error, getting to that point technically is immensely difficult and time consuming And while Tesla's ideas may sound or look good on paper, the goal and is pursuing that Tesla envisions comes undeniably with the cost of human lives.

76. For Tesla's Autopilot technology and suite of driver assistance features to work, Tesla relies upon the use of cameras and computer processing of the images taken in the real world and attempts to create this "Neural Network." Tesla relies heavily upon millions of miles of real-world driving data that it collects from its current fleet of vehicles worldwide. One of Tesla's patents describes the hardware and tools used to capture this data and photo information from these cars:

> In some embodiments, a vehicle is affixed with multiple sensors for capturing data. For example, in some embodiments, eight surround cameras are affixed to a vehicle and provide 360 degrees of visibility around the vehicle with a range of up to 250 meters. In some embodiments, camera sensors include a wide forward camera, a narrow forward camera, a rear

> view camera, forward looking side cameras, and/or rearward looking side camera.[38]

77. After collecting the photographs taken from the various array of cameras installed as part of Tesla's vehicles, the patent further explains that the gathered data is combined, used, and/or otherwise processed by computers and describes the potential applications for such data, including Tesla's Autopilot technology and suite of driver assistance features as follows:

> Using data captured from sensors and analyzed using the disclosed deep learning system, a machine learning result is determined for autonomous driving. In various embodiments, the machine learning result is provided to a vehicle control module for implementing autonomous driving features.[39]

78. In contrast to Tesla's camera-based system, as of the date of the instant pleading, every company engaged in the development of autonomous vehicles other than Tesla uses Light Detection and Ranging (LIDAR) technology to detect objects ahead. LIDAR is defined as a remote sensing method that uses light in the form of pulsed lasers to measure ranges and variable distances. In other words, LIDAR technology uses lasers that beam out at objects and uses the time that it takes for the lasers to reflect back

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[38] US16013817 / W02019245618. December 26, 2019 "Data Pipeline and Deep Learning System for Autonomous Driving" (https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019245618) (last accessed Apr. 27, 2020).

[39] *Id*. The patent goes on to describe processes that are similar, if not identical, to the way in which Tesla's Autopilot technology and suite of driver assistance features operates: "For example, a vehicle control module can be used to control the steering, braking, warning systems, and/or lighting of the vehicle. In some embodiments, the vehicle is controlled to navigate roads, match the speed of the vehicle to traffic conditions, keep the vehicle within a lane, automatically change lanes without requiring driver input, transition the vehicle from one freeway to another, exit the freeway when approaching a destination, self-park the vehicle, and summon the vehicle to and from a parking spot, among other autonomous driving applications." *Id.*. Further, the patent describes additional potential processes, such as "identifying opportunities to move the vehicle into a faster lane when behind slower traffic …. when autonomous driving without driver interaction is appropriate and when it should be disabled… [and] [i]n various embodiments, the machine learning result is used to assist a driver in driving the vehicle." *Id.*

as a way of determining distance. By using LIDAR technology, developers of autonomous vehicles can obtain near 100% accuracy in terms of the distance of objects that are between 100 and 300 meters away.[40]

79. While LIDAR technology has been widely embraced by developers of self-driving vehicles for the past decade, Tesla does not use LIDAR technology but, as discussed, instead relies upon the use of cameras and sensors coupled with real-world data that its entire fleet of vehicles collects worldwide. As explained above, Tesla's Autopilot system relies upon this "computer vision" which is created from the data captured by cameras and sensors that are then analyzed by using convolutional neural networks.

80. Tesla CEO Elon Musk has made his dislike and disapproval of LIDAR publicly clear. On April 22, 2019, at Tesla event named "Autonomy Investor Day," Musk made clear that LIDAR technology would be unnecessary to Tesla's goal of having full self-driving cars in the near future. Mr. Musk stated to investors: "LIDAR is a fool's errand. Anyone who relies on LIDAR is doomed. Expensive sensors that are unnecessary." [41]

81. Mr. Musk's statements regarding the purported uselessness of LIDAR technology and Tesla's unwillingness to incorporate or adopt its usage are at odds with the consensus of the automated driving developer community. The consensus amongst developers and those that work in or are familiar with automated driver technology is that the use of vision processing and LIDAR processing together is much more likely to prevent serious accidents involving death or severe injury than a system based upon the use of vision processing alone, as Tesla does.

82. For Plaintiffs and Mr. Umeda, the use of LIDAR would certainly not have been a "fool's errand" as Mr. Musk so adamantly suggests, although its implementation would entail additional expense

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[40] *See generally*, Deloitte. "Autonomous Driving – Moonshot Project With Quantum Leap from Hardware to Software & AI Focus" (https://www2.deloitte.com/content/dam/Deloitte/de/Documents/consumer-industrial-products/POV_Autonomous-Driving_Deloitte.pdf) (last accessed Apr. 26, 2020).

[41] Tesla Autonomy Investor Day. April 22, 2019. Palo Alto, CA (https://ir.tesla.com/events/event-details/tesla-autonomy-investor-day) (webcast presentation last accessed Apr. 19, 2020). *See also* Templeton, Brad. "Elon Musk's War On LIDAR: Who is right and why do they think that?" Fortune. May 6, 2019 (https://www.forbes.com/sites/bradtempleton/2019/05/06/elon-musks-war-on-lidar-who-is-right-and-why-do-they-think-that/#76cba902a3bd) (last visited Apr. 2, 2020).

for Tesla. Instead, it was Mr. Umeda who was doomed by Tesla's failure, among other things, to implement LIDAR technology in its vehicles, or at the very least, refrain from equipping its cars with defective cameras and sensors that are unable to detect such objects as a van, motorcycles, or a group of pedestrians that can reasonably be expected to appear on roads in front of a Tesla's vehicle's path.

83. Assuming, *arguendo*, that LIDAR technology proves to be outdated or not as effective as different technologies that may later be developed by the automated driving development community, this does not detract, in any way, from Tesla's duty to provide a reasonably safe and defect-free product. While it may be commonly accepted to introduce beta-tested technology and products that improve and become better after continued use, the same principles do not carry over to the realm of products, such as Tesla's Autopilot technology, where allowing such products to be introduced without sufficient testing comes at the price of human life. While Tesla will undoubtedly maintain its position that automated driving technology has the potential prevent a large number of traffic accidents and subsequently save countless number of lives, such position should be critically viewed here and Tesla should not be allowed to avoid liability or hide behind the prospect that its products ultimately may be for the good. This is especially true where, as here, Tesla has completely written off existing technology that has already proven to be much more effective and provide much less risk than the method that Tesla has chosen to use in its cars.

84. Despite knowing the limitations and defects inherent in the technologies used in its Autopilot system and driver assistance features here and in the other respects discussed above, Tesla acted recklessly and without regard for the safety of human life. The mere fact that reasonable, alternative, and safer methods exist should have been a deterrent against Tesla's decision to introduce its Autopilot technology for public use. Therefore, punitive and exemplary damages are warranted and would serve as a true deterrent to Tesla and prevent any further loss of life as a result of Tesla's defective Autopilot system and driver assistance technologies.

V. CAUSES OF ACTION

COUNT I
STRICT PRODUCTS LIABILITY (DESIGN DEFECTS)

85. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

86. At all times mentioned herein, Tesla was engaged in the business of manufacturing, fabricating, designing, assembling, distributing, selling, inspecting, warranting, leasing, renting, retailing, and advertising vehicles, including the Tesla Model X vehicle with Tesla's autopilot systems suite.

87. On April 29, 2018, a driver of a Tesla Model X vehicle, with Tesla's autopilot systems suite engaged and was driving the Tesla Model X vehicle in a reasonably foreseeable and intended manner, with both hands on the steering wheel, when the Tesla Model X vehicle struck and killed Decedent Yoshihiro Umeda.

88. Tesla knew that consumers would use and drive their vehicles as the driver did on April 29, 2018.

89. Tesla manufactured, designed, assembled, tested, inspected, marketed, distributed, and sold their vehicles, including the Tesla Model X vehicle, and their component parts including Tesla's autopilot system and suite of driver assistance features technology with defects in design which made them dangerous, hazardous, and unsafe for their intended and reasonably foreseeable use.

90. The design defects in Tesla's Model X vehicle and Tesla's autopilot system suite of technology included defective and unsafe characteristics such as the failure to adequately monitor and determine driver-engagement, which resulted in the death of Decedent Yoshihiro Umeda. The Tesla Model X's performance in this incident revealed a fatal defect and flaw in Tesla's Autopilot design, specifically regarding the method in which the system monitors driver engagement.

91. The design defects in Tesla's Model X vehicle also includes additional defective and unsafe characteristics, such as the failure to adequately determine stationary objects in front of the vehicle, which resulted in the death of Decedent Yoshihiro Umeda when the Tesla Model X vehicle was unable to recognize him as a pedestrian standing amongst a group of pedestrians and parked motorcycles. Tesla's

Autopilot suite of driver assistance features, specifically its forward obstacle detection and computer processing and camera visioning system failed to detect a group of pedestrians and motorcycles that were standing in front of the Tesla Model X's path.

92. The design defects in Tesla's Model X vehicle and Tesla's autopilot system suite of technology included defective and unsafe characteristics, such as the failure of the technology to require the driver of a Tesla vehicle with autopilot engaged to take over control and apply speed by pressing down on the accelerator pedal after circumstances that specifically involve a cut-out or cut-in scenario.

93. The design defects in Tesla's Model X vehicle and Tesla's autopilot system suite of technology included defective and unsafe characteristics, such as the failure to adequately monitor or determine the level of driver-engagement, and especially so where the National Traffic Safety Board and National Traffic Highway Safety Administration have both determined that measuring steering wheel torque is, on it's own, an ineffective method of measuring driver engagement and awareness.

94. Tesla's vehicles, including the Tesla Model X vehicle, contained design defects when the vehicles were introduced into the stream of commerce by Tesla.

95. Tesla's vehicles, including the Tesla Model X vehicle, were defective and unsafe for their intended use. Due to the design defects, the Tesla Model X vehicle failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner.

96. The risk of danger in the design of Tesla's Model X vehicle outweighed any benefits of the design, and especially where safer alternative designs were available at the time of manufacture. Such reasonably safer alternative designs include, but are not limited to, the following:

a. Driver-facing cameras that would monitor the driver's eyes and/or head position as a way to determine driver engagement and awareness;

b. LIDAR, or any other reasonable alternative system that may or may not include the use of radar technology for the detection of obstacles and surroundings of a Tesla vehicle; and

c. Recoding of Tesla's proprietary software for its Autopilot technology and suite of driver assistance features, specifically, the Traffic Aware Cruise Control feature, and require that

drivers must take affirmative steps to confirm acceleration of a Tesla vehicle when the vehicle encounters a "cut-out" driving scenario.

97. Therefore, the Tesla Model X vehicle, and all of Tesla's vehicles that are equipped with Tesla's Autopilot system suite of technology presented and continue to present a substantial and unreasonable risk of serious injuries to drivers of Tesla vehicles and the public.

98. The defects in the design of all Tesla vehicles equipped with Tesla's Autopilot system was a substantial factor in causes Decedent Yoshihiro Umeda's severe injuries and death, as well as Plaintiff's damages as alleged herein.

99. As a result of the defective products, Decedent Yoshihiro Umeda sustained severe personal injuries and died, and Plaintiffs suffered damages, as alleged herein:

a. Decedent Yoshihiro Umeda, before he died, suffered great mental, physical and emotional pain, in sums according to proof at the time of trial;

b. Plaintiffs incurred medical, funeral, burial, property damage, and other damages, in sums according to proof at the time of trial;

c. Plaintiffs incurred economic losses including past and future loss of earnings and diminished earning capacity, in an amount according to proof at the time of trial;

d. Plaintiff Tomomi Umeda suffered the loss of her husband and resulting non-economic damages; and

e. Plaintiff Miyu Umeda suffered the loss of her father and resulting non-economic damages.

100. Tesla is strictly liable to Plaintiffs for the injuries complained of herein by reason of having sold and placed into the stream of commerce defective automotive vehicles equipped with Tesla's defective autopilot system technology, which were unreasonably dangerous to drivers, pedestrians, and the public.

101. Wherefore, Plaintiffs demand judgment for damages generally against Tesla, individually, jointly, severally, or in the alternative, in excess of the jurisdictional limitations of this Court, together with interest and costs of suit.

COUNT II
STRICT PRODUCTS LIABILITY (FAILURE TO WARN)

102. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

103. At all times mentioned herein, Tesla was engaged in the business of manufacturing, fabricating, designing, assembling, distributing, selling, inspecting, warranting, leasing, renting, retailing, and advertising their vehicles, including the Tesla Model X vehicle, with Tesla's autopilot system technology suite.

104. On April 29, 2018, the driver of a Tesla Model X vehicle was driving the vehicle in a reasonably foreseeable and intended manner, with both hands on the steering wheel, when the Tesla Model X vehicle struck and killed Decedent Yoshihiro Umeda.

105. Tesla knew that consumers would drive their vehicles as the driver of the Tesla Model X vehicle did on April 29, 2018.

106. An ordinary consumer would not have recognized the potential risks and dangers inherent in the operation and use of a Tesla vehicle with autopilot engaged, including the fact that a Tesla vehicle would be unable to recognize a group of pedestrians and motorcycles in front of its path when traveling at lower speeds.

107. Tesla failed to warn of the dangers in the reasonably foreseeable use of its vehicles.

108. As a result of Tesla's failure to warn of the defects and dangers of its Autopilot technology and suite of driver assistance features, Plaintiffs have suffered from damages, and decedent Yoshihiro Umeda was seriously injured and killed, in an amount according to proof at trial.

COUNT III
NEGLIGENCE

109. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

110. At all times mentioned herein, Tesla had a duty to Plaintiffs, decedent Yoshihiro Umeda, the general public, and other drivers and pedestrians that share the roads with Tesla's vehicles, not to

unreasonably manufacture, develop, design, process, produce, assemble, build, test, inspect, install, equip, endorse, export, import, wholesale, retail, sell, lease, rent, modify, provide warnings, repair or entrust its vehicles, including the Tesla Model X vehicle and in regards to Tesla's Autopilot technology and suite of driver assistance features.

111. Tesla breached its duty to Plaintiffs, and decedent Yoshihiro Umeda, thereby causing the injury and damages as described herein. More specifically, Tesla acted unreasonably in designing, manufacturing, marketing, and releasing products including the Tesla Model X and Tesla's Autopilot technology and suite of driver assistance features, which it knew would present a substantial and unreasonable risk of injury to vehicle occupants, as well as other drivers and pedestrians that surround it during operation, including decedent Yoshihiro Umeda.

112. Tesla's breach was a substantial factor in causing the injuries, harm and damages to Plaintiffs and decedent Yoshihiro Umeda, as alleged herein.

COUNT IV
WRONGFUL DEATH

113. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

114. Plaintiffs bring this cause of action as a wrongful death action against Tesla in a representative capacity as Successors-in-Interest of the Estate of Yoshihiro Umeda, Deceased. If Plaintiffs are not appointed by the Court as the Successors-in-Interest of the estate of the deceased, Plaintiffs bring this cause of action in their individual capacities.

115. On April 29, 2018, a group of motorcycles were parked behind a small van on the furthest right-hand lane and side-median area of the Tomei Expressway in Kanagawa Japan, following a motor accident that had occurred. Decedent Yoshihiro Umeda was standing in the lane and was rendering aid to a friend that had bene involved in a motorcycle versus car accident.

116. From approximately 2:37 p.m. to around 2:48 p.m., the driver of the Tesla Model X vehicle was driving on the third traffic lane of the Tomei Expressway, with autopilot engaged, when the driver began to feel sleepy. The driver continued to drive and operate the vehicle despite feeling sleepy and kept

both hands on the steering wheel. During this time, the Tesla Model X vehicle continued to be in operation with autopilot engaged, and was following a vehicle in front of it at approximately 10-15 km/h.

117. At approximately 2:49 p.m., the car that was in front of the Tesla Model X vehicle switched lanes in order to avoid the group of clearly visible motorcycles and group of pedestrians that were parked ahead. After the car in front of the Tesla Model X vehicle had safely switched lanes, the Tesla Model X accelerated from approximately 20 km/h to more than 30 km/h, and drove directly into the group of parked motorcycles and pedestrians, including Decedent Yoshihiro Umeda, who was struck and killed as the Tesla Model X vehicle crashed into him and killed him as it ran over him and crushed him with a motorcycle.

118. Despite having Tesla's Autopilot technology and suite of driver assistance features engaged and in operation at the time of the accident, the Tesla Model X vehicle was unable to recognize the obstacles in front of it.

119. As a direct, proximate, and legal result of Tesla's negligent and intentional acts and omissions, Decedent Yoshihiro Umeda was struck and killed by a Tesla Model X vehicle.

120. At all times mentioned herein, Plaintiff Tomomi Umeda and decedent Yoshihiro Umeda were lawfully married and residing together as wife and husband and were the natural parents of their only child and daughter, Miyu Umeda, who was a minor at the time of the incident, prior to and specifically during and at the time of the crash that took decedent Yoshihiro Umeda's life.

121. At all times mentioned herein, decedent Yoshihiro Umeda was the principal earner of income and provider of said income to Plaintiffs, both of whom relied upon decedent's income for financial support. As a result of Tesla's negligent and intentional acts and omissions, Plaintiffs Tomomi Umeda and Miyu Umeda have incurred special damages as a result of injuries that were caused to decedent Yoshihiro Umeda and his death, including the loss of his income and financial support that would have otherwise occurred through the rest of his natural life, all to their damage, in an amount according to proof.

122. As a direct, legal, and proximate result of Tesla's negligent and intentional acts and omissions, Plaintiffs have suffered a loss of love, companionship, comfort, affection, society, solace,

training and/or moral support, and are entitled to damages pursuant to Code of Civil Procedure § 377.60, *et seq.*

COUNT V
LOSS OF CONSORTIUM

123. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

124. At all times mentioned herein, Plaintiff Tomomi Umeda and decedent Yoshihiro Umeda were at the time of the crash that took his life, lawfully married and residing together as husband and wife.

125. Plaintiff Tomomi Umeda has suffered loss of consortium with her husband, the decedent, as a result of injuries that were caused to him as a result of Tesla's negligent and intentional acts and omissions, which include the loss of love, care, companionship, comfort, services, marital relations, society, solace, affection, instruction, advice, training, guidance, protection, counsel, support, and care, comfort, attention, and guidance, society, sexual relations, the moral support that spouses provide to each other through the triumphs and despairs of life, and the deprivation of his physical assistance in operating and maintaining the family home, including the loss of his income where decedent was the sole income earner and support of the family financially, all to an amount of damages according to proof at trial.

126. At all times mentioned herein, Plaintiff Tomomi Umeda and decedent Yoshihiro Umeda were the natural parents of their only child and daughter, Plaintiff Miyu Umeda, a minor at the time of the incident, specifically at the time of the crash that took decedent's life.

127. Plaintiff Miyu Umeda has incurred general damages as a result of injuries to decedent and decedent's death, including the loss of decedent's love, care, companionship, comfort, services, society, solace, affection, instruction, advice, training, protection, counsel, support, attention, and guidance, all to an amount of damages according to proof at trial.

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COUNT VI
SURVIVAL ACTION

128. Plaintiffs reallege and incorporate by reference all paragraphs above as though fully set forth herein.

129. Plaintiff Tomomi Umeda brings this cause of action as a survival action against Tesla in her representative capacity as Successor-in-Interest for the Estate of Yoshihiro Umeda, deceased.

130. Plaintiff Miyu Umeda brings this cause of action as a survival action against Tesla in her representative capacity as an heir of Decedent Yoshihiro Umeda.

131. As alleged herein, Decedent Yoshihiro Umeda suffered damage to himself and his personal property. Additionally, Decedent Yoshihiro Umeda lived for a period of time after being initially struck by the Tesla Model X vehicle and thereby suffered injury and damages prior to his death and in an amount according to proof at trial. Prior to his death, Decedent Yoshihiro Umeda would have been entitled to recover such damages against Tesla.

132. Tesla's conduct was in willful, conscious, and reckless disregard for the safety of Plaintiffs and others, entitling Plaintiffs to exemplary damages under California Civil Code section 3294.

VI. REQUEST FOR RELIEF

133. As alleged herein, Plaintiff Tomomi Umeda, as the surviving spouse of Decedent Yoshihiro Umeda, has in the past suffered and will continue to suffer from the following which include:

a. The value of lost support and services from the date of the decedent's injury to his death, with interest, and future loss of support and services to the date of death, and for the expected remainder of his life;

b. The loss of the decedent's companionship and protection and mental pain and suffering and any other recoverable noneconomic harm;

c. Funeral expenses paid by Plaintiff and which were incurred as a result of decedent's death; and

d. Any and all other damages and remedies available to Plaintiff in an amount according to proof at trial.

134. As alleged herein, Plaintiff Miyu Umeda, a minor at the time of the incident, and now as the only surviving child of Decedent Yoshihiro Umeda, has in the past suffered and will continue to suffer from the following, which include:

a. Permanent loss of parental companionship, instruction, guidance and mental pain and suffering and any other recoverable noneconomic harm; and

b. The value of lost support and services from the date of decedent's death, with interest, and future loss of support and services from the date of death, and reduced to present value, for the expected remainder of his life.

135. WHEREFORE, Plaintiffs demand judgment against Tesla for all damages recoverable under the laws of the State of California and the United States of America, including California's Wrongful Death Act, and seek general damages, special damages, and punitive and exemplary damages, attorneys' fees and costs, and any other further relief as deemed appropriate, according to proof at trial.

136. WHEREFORE, Plaintiffs respectfully request that the Court enter judgment in their favor against Defendant Tesla, Inc., and issue an order temporarily and permanently enjoining Tesla from continuing to conduct the acts committed by Tesla as alleged herein, including the recall and/or restriction of use of Tesla's Autopilot technology and suite of driver assistance features, and grant any and all injunctive relief to Plaintiffs as are available to them as remedies as a result of Tesla's conduct as alleged herein, and any and all equitable relief that are available to Plaintiffs.

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VII. JURY TRIAL DEMANDED

137. WHEREFORE, Plaintiffs demand a trial by jury on all issues so triable.

Dated: April 28, 2020

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