

In the Matter Of:

TESLA, INC., vs

iQAR INC.

DR. VASSILIOS MORELLAS

December 13, 2024



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,
v.
iQAR INC.,
Patent Owner.

)
)
)
) CASE NO. IPR2024-00630
)
)
)
) PAGES 1 - 42
)
)
)
)

DEPOSITION OF DR. VASSILIOS MORELLAS
CONFIDENTIAL -- ATTORNEYS' EYES ONLY
Friday, December 13, 2024
APPEARING REMOTELY FROM HUNTINGTON BEACH, CALIFORNIA

STENOGRAPHICALLY REPORTED BY:
LINDSAY A. STOKER, RDR, RMR, CRR, CRC
CA CSR No. 14373
Job No.: 2024-967277

2 1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 BEFORE THE PATENT TRIAL AND APPEAL BOARD 3 4 TESLA, INC.,)) 5 Petitioner,)) CASE NO. IPR2024-00630 6 v.)) 7 iQAR INC.,)) PAGES 1 - 42 8 Patent Owner.)) 9 _____) 10 11 12 13 14 Deposition of Dr. Vassilios Morellas, taken on behalf 15 of the Patent Owner Pursuant to Notice via remote 16 teleconference in Huntington Beach, California, 17 commencing at 8:59 a.m., on Friday, December 13, 2024, 18 before Lindsay Anne Stoker, an NCRA Registered Diplomat 19 Reporter, Registered Merit Reporter, Certified Realtime 20 Reporter, Certified Realtime Captioner, and Certified 21 Shorthand Reporter No. 14373 in and for the State of 22 California. 23 24 25	4 1 APPEARANCES CONTINUED: 2 3 4 ALSO PRESENT: 5 Robert Suarez, Document Technician 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
3 1 A P P E A R A N C E S --oOo-- 2 3 APPEARING ON BEHALF OF THE PETITIONER TESLA, INC.: 4 5 FISH & RICHARDSON 6 BY: RYAN CHOWDHURY, ESQ. 7 500 Arguello Street, Suite 400 8 Redwood City, CA 94063 9 Email: Rchowdhury@fr.com 10 11 12 APPEARING ON BEHALF OF THE PATENT OWNER IQAR INC.: 13 14 ORRICK, HERRINGTON & SUTCLIFFE LLP 15 BY: K. PATRICK HERMAN, ESQ. 16 51 West 52nd Street 17 New York, NY 10019 18 Telephone: (212) 506-3596 19 Email: Pherman@orrick.com 20 21 22 23 24 25	5 1 INDEX 2 WITNESS: DR. VASSILIOS MORELLAS 3 PAGE 4 EXAMINATION BY MR. HERMAN 6 5 6 7 PREVIOUSLY MARKED EXHIBITS 8 NUMBER PAGE 9 EXHIBIT 8 1001, 1003, 10 1004 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

6 1 STENOGRAPHIC REPORTER APPEARING REMOTELY 2 HUNTINGTON BEACH, CALIFORNIA 3 MR. HERMAN: This is Patrick Herman from 4 Orrick, Harrington & Sutcliffe here on behalf of patent 5 owner. 6 MR. CHOWDHURY: This is Ryan Chowdhury from 7 Fish & Richardson, and I am here on behalf of 8 petitioner, Tesla. 9 THE WITNESS: And I am Vassilios Morellas. I 10 am the expert witness. 11 VASSILIOS MORELLAS, 12 called as a witness, having been first duly 13 sworn, was examined and testified as follows: 14 EXAMINATION 15 BY MR. HERMAN: 16 Q. Good morning, Doctor. And before we begin, 17 just to be clear, we are here today in connection with 18 IPR2024-00630. 19 Now, Doctor, I know we've talked before. But 20 despite that, I am going to very briefly go over the 21 same ground rules that we discussed previously to ensure 22 things once again go smoothly here today. 23 And, first, you heard that there's a court 24 reporter; so I ask that you respond verbally to my 25 questions so that they can record your testimony. Is	8 1 documents into the chat so that you have them. And just 2 give me a moment, please. Let me know when you have 3 those. 4 THE WITNESS: I'm opening them up, as we speak. 5 Okay. I got them. 6 MR. HERMAN: So the three documents should have 7 been previously marked or designated Exhibit 1001, 1003, 8 and 1004. 9 (Exhibit Nos. 1001, 1003, 1004 10 identified.) 11 BY MR. HERMAN: 12 Q. Is that right? 13 A. That's fine -- that's right. 14 Q. And 1001, that's the '616 patent that is at 15 issue in this proceeding; correct? 16 A. Correct. 17 Q. And Exhibit 1004 is a document that you 18 referred to in the declaration in this proceeding as 19 Koebler650 or '650; is that right? 20 A. That's correct. 21 Q. Now, what is Exhibit 1003? 22 A. 1003 is my declaration. 23 Q. And it is your declaration from this proceeding 24 that relates to the '616 patent; correct? 25 A. That's correct.
7 1 that okay? 2 A. That's fine. 3 Q. And it is also important that we not talk over 4 each other. So we should both make an effort to wait 5 until the other is done talking before responding. Is 6 that okay? 7 A. It's okay. 8 Q. And, next, if anything I ask today is unclear, 9 please let me know. Otherwise, I will assume we're on 10 the same page. Is that okay? 11 A. That's fine. 12 Q. Next, that you don't look at any documents 13 during the deposition besides the few documents that I 14 give you. And if you do look at a document, I ask that 15 you tell me. Is that okay? 16 A. That's fine. 17 Q. Next, I ask that you not have any side 18 conversations or use technology like email or chat to 19 communicate with anyone during the deposition. Is that 20 okay? 21 A. That's fine. 22 Q. And, lastly, is there anything that would 23 prevent or interfere with your ability to testify today? 24 A. No, there is not. 25 MR. HERMAN: So I'm going to put three	9 1 Q. Okay. Now, is there anything in that 2 declaration that, sitting here today, that you believe 3 is inaccurate? 4 A. No. 5 Q. Now, if you could get out Exhibit 1001. That's 6 the '616 patent. 7 A. Yes. 8 Q. Now, one of the opinions that you have offered 9 in your declaration in this proceeding is that, in your 10 view, the claims of the '616 patent are not supported by 11 adequate written description in the applications to 12 which the '616 patent claims priority; is that right? 13 A. That's right. 14 Q. And if you could turn to Claim 1 of the '616 15 patent, which I believe is on the second to last page of 16 the PDF that I sent you? 17 A. Yes, I'm here. 18 Q. So Claim 1 is in Column 27 of the patent; 19 right? 20 A. Yes. 21 Q. And it spans basically lines 32 through maybe 22 65? 23 A. Okay. Yep. 24 Q. Okay. And at the end of that claim, there are 25 two paragraphs, both of which start with the

10 1 word "wherein"; is that right? 2 A. Right. 3 Q. And the first of those paragraphs lists 13 4 different sensors that produce what the claim calls 5 sensor data samples; is that right? 6 A. Yes. 7 Q. And the second "wherein" paragraph lists 21 8 current conditions; is that right? 9 A. That is right, yep. 10 Q. Now your opinion regarding written description 11 relates to some but not all of those 21 current 12 conditions in that second "wherein" paragraph; right? 13 A. Yes. 14 Q. So now, if you could turn to Exhibit 1003, 15 that's your declaration in this proceeding. 16 A. Yes. 17 Q. And I'd like to direct your attention to 18 paragraph 57. That's on the numbered page 28. I think 19 it is also page 28 of the PDF. 20 A. Okay. I'm here. 21 Q. So paragraph 57 begins the portion of your 22 declaration discussing written description support for 23 the '616 patent's claims; correct? 24 A. Yeah. 25 Q. Now, if you turn down to paragraph 60, which is	12 1 A. Which line are you reading? I'm sorry. 2 Q. Sorry, paragraph 65? 3 A. Oh, 65. Sorry. Yeah. 4 Q. So in paragraph 65, you say, "As explained 5 below, Koebler650 expressly discloses each of the 6 Enumerated sensors"; correct? 7 A. 65, I'm sorry. I was looking at something 8 different. Yes. 9 Q. And by "enumerated sensors" in paragraph 65, 10 you are referring to the 13 sensors listed in Claim 1; 11 correct? 12 A. Correct. 13 Q. And in the paragraphs that follow paragraph 65, 14 you cite various portions of Koebler650 that are 15 discussing each of those 13 sensors. True? 16 A. True. 17 Q. So in paragraph 66, you note that Koebler650 18 references the use of optical sensors to, quote, "detect 19 external environment" -- "environmental information," 20 end quote; correct? 21 A. Correct. 22 Q. And in paragraph 67, you note that Koebler650 23 references a GPS system, which you include in your 24 position sensor section, to detect the current position 25 of the vehicle; right?
11 1 on the next page? 2 A. Yes, I'm here. 3 Q. You note in this paragraph that it is your 4 opinion that, amongst the 21 enumerated current 5 conditions, Koebler650 fails to provide sufficient 6 written description support for determining 10 of those 7 conditions based on analyzing sensor data samples from 8 at least one of the 13 claimed sensors; right? 9 A. That is right. 10 Q. Now, before moving on to the conditions, those 11 10 conditions that you discuss in this portion of your 12 declaration, I would like to briefly discuss the 13 sensors, the 13 sensors in Claim 1. So Claim 1 does 14 list 13 different sensors; correct? 15 A. Yes. 16 Q. And you do not dispute in your declaration that 17 there is reference to all 13 of those sensors in 18 Koebler650; correct? 19 A. I believe so. 20 Q. And that's actually what you say in paragraph 21 65, which is on page 34 of your declaration; correct? 22 A. Yes. 23 Q. So in that paragraph, you say, "As explained 24 below, Koebler650 expressly discloses each of the 25 enumerated sensors"; correct?	13 1 A. That is correct. 2 Q. And in paragraph 69, you note that Koebler650 3 would be understood to reference what you call a 4 gyroscopic sensor; correct? 5 A. Yes. 6 Q. And in paragraph 70 you reference, among other 7 things, a wheel revolution per minute sensor; correct? 8 A. Yes. 9 Q. And paragraph 71 through 78 go on to discuss 10 the remaining of the 13 claimed sensors; true? 11 A. That is true, yeah. 12 Q. Now, if we go back up to paragraph 61 of your 13 declaration, which starts on page 29? 14 A. Yes. 15 Q. In this paragraph, you have a table that lists 16 all 21 of the current conditions that appear in that 17 final wherein clause of Claim 1; is that right? 18 A. That is right. 19 Q. And that table includes two columns; correct? 20 A. Yes. 21 Q. And the column to the left is entitled 22 "Supported Current Conditions"; right? 23 A. Right. 24 Q. So you do not dispute that Koebler650 not only 25 describes those current conditions but explains that

14 1 they can be determined using the claimed sensors; 2 correct? 3 A. That is an express disclosure but -- about 4 those particular conditions, yes. 5 Q. And then the column to the right is entitled 6 "Unsupported Current Conditions"; correct? 7 A. That is correct. 8 Q. And that column includes 10 of the 21 9 conditions identified in Claim 1 and the other 10 independent claims in the '616 patent; true? 11 A. True. 12 Q. And those conditions -- that right-hand 13 column -- are the conditions, in your view, that are not 14 supported by adequate written description in Koebler650; 15 correct? 16 A. That is correct. 17 Q. Okay. Now, can we turn down to paragraph 90 of 18 your declaration? That's on page 45? 19 A. Okay. I'm here. 20 Q. Now, this -- paragraph 90 is in a section that 21 you didn't -- you entitled "Other Unsupported Current 22 Conditions." 23 Do you see that? 24 A. Yes, I do. 25 Q. And this particular section, which spans	16 1 Q. Now, if we turn to Column 3 of Koebler650, 2 which is on page 18 of the PDF? 3 A. Yes. It is -- yeah, yeah. 4 Q. Beginning at about line 41 of Column 3, there's 5 a paragraph that begins, "The power management logic may 6 determine an applied" -- 7 Do you see that? 8 A. Yes. 9 Q. And that sentence goes on to read, "An applied 10 power for the vehicle based on the information about the 11 external environment of the vehicle"; right? 12 A. Yes. 13 Q. And the paragraph then goes on to provide 14 examples of the information about the external 15 environment of the vehicle contemplated by Koebler650. 16 True? 17 A. Yeah. There is enough discussion that 18 describes different things over there in this paragraph. 19 Q. So, if you look down to line 58, there's a 20 reference to temperature; correct? 21 A. 58, yes. 22 Q. And in line 54, there's a reference to weather 23 around the vehicle; correct? 24 A. Yes. I'm there. 25 Q. Line 55 there's a reference to wind direction;
15 1 paragraphs 90 and 91, discusses 7 of the 10 current 2 conditions that you opine are not described by 3 Koebler650; correct? 4 A. That is correct. 5 Q. And those seven conditions include temperature, 6 weather, wind direction, wind velocity, air pressure, 7 location of stoplights, and timing of stoplights; 8 correct? 9 A. That is correct. 10 Q. And in about the middle of paragraph 90, you 11 note that, "There is no teaching or suggestion in 12 Koebler650 that data collected by the Enumerated Sensors 13 are used to determine these current conditions"; is that 14 right? 15 A. That is right. 16 Q. Now, you do not dispute that Koebler650 17 references these seven conditions themselves, do you? 18 A. It does reference those, yes. 19 Q. Now, if you could look at Exhibit 1004, that's 20 Koebler650. 21 A. Yes. 22 Q. So Exhibit 1004 is, in fact, the reference you 23 are referring to when you referred to Koebler650 24 declaration. True? 25 A. That is true.	17 1 correct? 2 A. Yes. 3 Q. And in line 56, there's a reference to wind 4 velocity. True? 5 A. Yes. 6 Q. And in line 59, there's a reference to air 7 pressure; correct? 8 A. Yes. 9 Q. And spanning lines 51 to 52, there's a 10 reference to location of stoplights; correct? 11 A. Yes. 12 Q. And in line 52, there's a reference to timing 13 of stoplights; correct? 14 A. Correct. 15 Q. Now, will you agree that one of the ways that 16 Koebler650 discusses obtaining weather information is 17 from what is called a weather service? 18 A. No, I do not agree with that. There is all 19 these references about all the things, all the 20 stoplights, the timing of stoplights, temperature; but I 21 don't see how these particular conditions, if you will, 22 are determined by the list of the enumerated sensors. 23 And there is no explanation of how these things -- how 24 data from these sensors are processed to find 25 information about the stoplights, the timing of

18 1 stoplights, the temperature, and so on and so forth. 2 Q. So if you could turn to Column 8 for me? 3 A. Yes. 4 Q. There's a paragraph that begins at line 12 that 5 reads, "The power management device may include or may 6 be connected to sensors or other inputs to directly 7 determine some of the information inputs." 8 Do you see that? 9 A. I'm sorry. We're in Column 8; right? What 10 line? 11 Q. 12. Starting at line 12. 12 A. Yeah. So yeah. It says, "The power management 13 device may include or may be connected to sensors or 14 other inputs to directly determine some of the 15 information inputs. 16 Q. Now, in 19 there's a sentence that reads, "In 17 some variations, the power management system receives 18 some information by telemetry with off-board information 19 sources such as database and the like." 20 Do you see that? 21 A. Yeah, I see that. 22 Q. And then the next sentence reads, "For example, 23 the power management system may communicate with a 24 weather service, a map service, a traffic service, et 25 cetera."	20 1 location that has nothing to do with where the vehicle 2 is? 3 A. I don't agree with that. There is no specific 4 written description about that. 5 Q. So, in your view, Koebler650 teaches a system 6 where the vehicle could be driving around at one 7 location and receive weather information from some 8 completely random different location. That's how you 9 understand Koebler650? 10 MR. CHOWDHURY: Objection. Misstates 11 testimony. 12 THE WITNESS: Can you repeat your question 13 again. 14 BY MR. HERMAN: 15 Q. Yes. So in paragraph 8, in the sentence 16 spanning lines 22 to 24, Koebler650 says, "The power 17 management system may communicate with a weather 18 service, a map service, a traffic service, et cetera"; 19 right? 20 A. Yes. 21 Q. So that's referring to receipt of information 22 from a weather service, a map service, a traffic 23 service, et cetera, at the power management system 24 that's on the vehicle; correct? 25 A. Yes. Go ahead.
19 1 Do you see that? 2 A. I see that, yeah. 3 Q. So assume for me that a vehicle is driving 4 around in New York City. Does Koebler650, in this 5 particular paragraph, when there's communication with a 6 weather service, contemplate getting weather information 7 relating to New York City or weather information 8 relating to some completely different place like San 9 Francisco? 10 MR. CHOWDHURY: Objection. Calls for 11 speculation. Incomplete hypothetical. 12 You can go ahead and answer, Dr. Morellas. 13 THE WITNESS: There may be a wealth of 14 hypothesized scenarios that are here. So -- but there 15 is no reference -- the reference is to particular 16 sensors that are part of the enumerated list and how the 17 sensor data are being processed to get any one of the 18 conditions that are listed in the claims. 19 BY MR. HERMAN: 20 Q. So the sentence in the end of that paragraph in 21 Column 8 that spans lines 12 to 24 references receipt of 22 information from a weather service; correct? 23 A. It states that, yes. 24 Q. Now, would the information from that weather 25 service relate to the vehicle's current location or some	21 1 Q. Now, would that information -- the weather 2 information received at the power management system from 3 the weather service -- would that information have any 4 connection whatsoever to the vehicle's current location? 5 MR. CHOWDHURY: Objection. Calls for 6 speculation. 7 THE WITNESS: Again, your question, in light of 8 the claims, the weather service is not part of the list 9 of sensors that are being used in order to reach 10 determination of the conditions. 11 BY MR. HERMAN: 12 Q. So I understand that. But my question is 13 different. My question is whether the weather 14 information that's received at the power management 15 system from the weather service -- whether that 16 information relates to the vehicle's location or not? 17 That's my question. 18 A. It may be. It may be. 19 Q. So it may be. The weather information may be 20 related to the vehicle's location as opposed to some 21 random location. True? 22 A. It depends on the input that you have into 23 the -- into how you -- there is no way -- I mean, there 24 is not enough information of how the vehicle is 25 communicating to the weather service.

22 1 Q. Now -- oh, sorry. 2 A. There is not enough specificity as to what kind 3 of information does the vehicle get from the weather 4 service. 5 Q. But it does disclose receipt of weather 6 information from a weather service; correct? 7 A. It says that it may communicate with the 8 weather service. Now, what type of information does it 9 get? I don't know. 10 Q. Weather information presumably. True? 11 A. Presumably, yes. 12 Q. And weather information about the general area 13 around the vehicle as opposed to a thousand miles away 14 from the vehicle; correct? 15 A. No. I cannot say that. That's not correct. 16 Q. So your reading -- and you believe one of 17 ordinary skill in the art, reading Koebler650, would 18 consider Koebler650 to teach the receipt of weather 19 information from a random location that has nothing to 20 do with the vehicle's location. That's how you 21 interpret Koebler650? 22 MR. CHOWDHURY: Objection. Misstates 23 testimony. 24 THE WITNESS: This might be the case, but there 25 is not enough information. There is not enough	24 1 A. Yes. 2 Q. So the vehicles in New York City, Koebler650 3 concerns itself with the weather in New York City, not 4 the weather in San Francisco. True? 5 A. True. 6 Q. Now, how does Koebler650 know that this vehicle 7 is in New York City and not in San Francisco? 8 A. There is not a description about that. 9 Q. So there's no description of the use of GPS in 10 Koebler. Is that your understanding? 11 A. This might be the case; but, again, this 12 description in this paragraph is very vague. 13 Q. Does Koebler describe the use of GPS to 14 determine the vehicle's location? 15 A. Maybe, yeah. 16 Q. It does; correct? 17 A. Yes. 18 Q. Now, if you could go back to your declaration, 19 that's Exhibit 1003. 20 A. Yes. 21 Q. If we turn to paragraph 79? 22 A. Yes, I'm here. 23 Q. This paragraph discusses the moisture condition 24 that is referenced in the '616 patent's claims; is that 25 right?
23 1 description that tells me what kind of information and 2 what relevant information will the vehicle get from the 3 weather service. 4 BY MR. HERMAN: 5 Q. So that understanding of Koebler650 is part 6 of -- it is one of the things that underlies your 7 opinion in this proceeding; correct? 8 A. It is one of them. 9 Q. And it is one of the reasons why you arrived at 10 the conclusion that Koebler650 does not provide written 11 description support for the claims. True? 12 A. No. It isn't that I am saying that it is 13 because there is no information coming from the least of 14 enumerated sensor that are listed and there's no 15 description of how the use of the sensor integration 16 gets to the conditions that are described in the claims. 17 Q. Now, if we look back at Column 3 that is 18 Koebler650, we were talking about the paragraph that 19 starts at line 41; correct? 20 A. 41, yes. 21 Q. And if you turn down to line 54, there's a 22 reference to weather; correct? 23 A. The weather around the vehicle, yep. 24 Q. And this portion of Koebler650 actually refers 25 to the weather around the vehicle. True?	25 1 A. Right. 2 Q. And in paragraph 79, you note that the word 3 "moisture" is absent from Koebler650. True? 4 A. True. 5 Q. And that discussion of the moisture condition 6 continues down through about paragraph 82; correct? 7 A. Yes. 8 Q. Now, as we were just talking about, Koebler650 9 does discuss the determination of weather in general 10 around the vehicle; correct? 11 A. It makes this reference in the previous 12 paragraph that we discussed. 13 Q. Now, if you could look at Koebler650, that is 14 Exhibit 1004 for me. 15 A. Yeah. 16 Q. If we turn all the way back to Column 21, which 17 I believe is on page 27? 18 A. Yes, I'm here. 19 Q. And in Column 21, there's a paragraph that 20 begins at line 29 -- or about line 29? 21 A. Yep. 22 Q. And that paragraph begins by stating, "Any 23 appropriate sensors, detectors, or data inputs may be 24 used with the power management devices and systems 25 described herein."

26 1 Do you see that? 2 A. Yes, I do. 3 Q. And then it states that, "Sensors were 4 detecting external environment information may be used," 5 and there's a parenthetical "(e.g. optical, mechanical, 6 electrical, or magnetic sensors)." 7 Do you see that? 8 A. Yes, I do. 9 Q. And the rest of the paragraph goes on to 10 describe various types of information that may be 11 gathered; correct? 12 A. Yes. Yep. 13 Q. And if we go all the way down to line 47? 14 A. Yes. 15 Q. There's a reference to weather. Do you see 16 that? 17 A. Uh-huh. Yes. 18 Q. And then following weather, there's another 19 parenthetical; right? 20 A. Yeah. 21 Q. And in that parenthetical, Koebler650 22 references wind direction and velocity, rain, sun, snow, 23 et cetera; correct? 24 A. Correct. 25 Q. So in the passage that I just read, one of the	28 1 particular proceeding, did you assume that the moisture 2 that is referenced in Claim 1 is limited to just the 3 moisture in the air? 4 A. Yeah. I mean, moisture -- that is how moisture 5 is defined -- is the percentage of water vapor in the 6 air as opposed to rain. Rain is the water that comes 7 down. 8 Q. So your -- 9 A. The water vapor. 10 Q. Sorry, I don't mean to interrupt. Keep going. 11 A. Yeah. I mean, moisture at least to the water 12 vapor that exists in the air as opposed to the rain, 13 which is the water that has already come down. 14 Q. So, in your opinion, moisture in Claim 1 is 15 limited to just the moisture in the air; correct? 16 A. Correct. 17 MR. CHOWDHURY: Objection. Misstates 18 testimony. 19 BY MR. HERMAN: 20 Q. And that understanding of the word "moisture" 21 underlies your opinions regarding written description 22 support; correct? 23 A. One of them, yes. 24 Q. Now, in paragraph 79 through 83 of your 25 declaration, you don't express any opinions regarding
27 1 types of information that Koebler650 contemplates 2 gathering is weather information; correct? 3 A. Yes. 4 Q. And an example of the weather information that 5 Koebler650 gathers is whether or not it is raining. 6 True? 7 A. It contemplates about that, yes. 8 Q. Now, is there a relationship between the 9 moisture in the environment around the vehicle and 10 whether or not it is raining? 11 A. Rain is different than moisture. 12 Q. Will there be more moisture on the roadway when 13 it is raining than when it's not? 14 A. I am not sure of that. 15 Q. So that's not something that you've already -- 16 oh, sorry. 17 A. That may be moisture in the air and still not 18 raining. 19 Q. But if it is raining, will there be more 20 moisture on the roadway than when it is not raining? 21 A. The roadway surface might be wet. 22 Q. So there could be -- 23 A. But this is different than the moisture in the 24 air. 25 Q. So in arriving at your opinions in this	29 1 the types of sensors that are used to determine if it is 2 raining around the vehicle's current position, do you? 3 A. In paragraph 79 of my declaration, I am listing 4 the fact that, by using any one of these enumerated 5 sensors, you cannot reach the determination of the 6 moisture. 7 Q. But you are not affirmatively identifying any 8 types of sensors that could be used to identify whether 9 it is raining; correct? 10 A. In this particular portion of the declaration, 11 I am not saying that. 12 Q. Now, when Koebler650 was filed, were there 13 automotive systems that were able to automatically 14 activate a vehicle's windshield wipers? 15 MR. CHOWDHURY: Objection. Calls for 16 speculation. 17 THE WITNESS: This may be the case, yeah. 18 BY MR. HERMAN: 19 Q. Do you know what kinds of sensors those systems 20 used? 21 A. I have to get back and look for this type of 22 information. 23 Q. Do you know if any of those systems used 24 optical sensors to determine if it was raining? 25 MR. CHOWDHURY: Same objection.

30 1 THE WITNESS: I'm not sure, but if it was -- 2 that was the case, there is no definitive description of 3 how this can happen. 4 BY MR. HERMAN: 5 Q. Now, in paragraph 84 of your declaration? 6 A. Yeah. 7 Q. You're discussing the amount of vibration 8 condition; correct? 9 A. That is correct. 10 Q. And in paragraph 84, you note that the word 11 "vibration" does not appear in Koebler650. True? 12 A. True. 13 Q. And this section continues through about 14 paragraph 86; correct? 15 A. Yes. 16 Q. And in paragraphs 84, 85, and 86, you don't 17 cite or point to any prior art references or any 18 references at all besides Koebler650; correct? 19 A. In paragraphs 84, 85, and 86, is that your 20 question? 21 Q. Yes. 22 A. Yeah. Yeah. That is true. 23 Q. Now, in paragraph 86, you note that, "A POSITA 24 would have amount of vibration could have been 25 determined, for example, by analyzing sensor data	32 1 Do you see that? 2 A. Yes. 3 Q. And then there's a reference to speedometer 4 information; correct? 5 A. Yes. 6 Q. And date and time information; right? 7 A. Yep. 8 Q. And then at line 42, there's a reference to 9 gyroscope information; right? 10 A. Yes. 11 Q. And then there's a parenthetical following 12 that; right? 13 A. Yes. 14 Q. And the parenthetical references vehicle's 15 current orientation, current slope grade of road; right? 16 A. Yes. 17 Q. Do you know what types of gyroscopes were used 18 in automobiles when Koebler650 was filed? 19 MR. CHOWDHURY: Objection. Calls for 20 speculation and scope. 21 THE WITNESS: Yeah. I'm not sure what kind 22 of -- what is your question. 23 BY MR. HERMAN: 24 Q. Did you consider the types of gyroscopes that 25 were routinely used in vehicles as of Koblar650's filing
31 1 samples received from a vibration sensor and/or 2 accelerometer." 3 So I think the word "understood" may be missing 4 from that sentence; is that right? 5 A. Yes. 6 Q. Now, the sentence references vibration sensors 7 and accelerometers; is that right? 8 A. Yeah. 9 Q. Now, when Koebler650 was filed, are there any 10 other types of sensors used in the vehicle that detect 11 vibration? 12 MR. CHOWDHURY: Objection. Calls for 13 speculation. 14 THE WITNESS: It could have been, but as I am 15 sitting here right now, I cannot give a definitive 16 answer. 17 BY MR. HERMAN: 18 Q. Now, if you look at Koebler650 and if we could 19 go back to Column 21? 20 A. Yes. 21 Q. At about line 37? 22 A. Yes. 23 Q. There's a reference to information on the 24 vehicle's current location, current elevation, upcoming 25 elevations, upcoming terrain, and vehicle destination.	33 1 in arriving at your opinions? 2 A. Yeah. I know that gyroscopes gives you 3 information about the orientation of the vehicle. 4 Q. Do you know how those gyroscopes operate? 5 A. There are different principles that can drive 6 exactly that type of information from moving objects. 7 Q. Can you give examples of those different 8 principles? 9 A. There may be electromechanical, Piezoelectric 10 types of gyroscopes. 11 (Reporter Clarification.) 12 BY MR. HERMAN: 13 Q. It is P-i-e-z-o and then electric; is that 14 right? 15 A. Yes. 16 Q. Do you know what a vibratory gyroscope is? 17 A. I am not really familiar with that. 18 Q. So you have not heard that term before? 19 A. I have heard, but I am not very familiar with 20 it. 21 Q. Does the term "Coriolis effect" mean anything 22 to you? 23 A. Yes. 24 Q. And what does that term mean? 25 A. It is an acceleration term.

34 1 Q. Are there gyroscopes that consider or take into 2 account the Coriolis effect? 3 A. It could. It could be the case. But, again, a 4 gyroscope sensor gives you information about angular 5 orientation and rates of this as opposed to the 6 accelerometers that gives you the rate of change of 7 velocities for angular velocities. 8 Q. Now, in arriving at your opinions relating to 9 the '616 patent's claims, did you take into account the 10 types of gyroscopes that were typically used in 11 automobiles as of Koblar650's filing? 12 A. My analysis was based on the claims that were 13 appearing in the patent that talked about the use of the 14 particular sets -- set of enumerated sensors to reach 15 the determination of the particular conditions. 16 Q. But sitting here today, there's no particular 17 gyroscope that you considered Kobler650 to contemplate. 18 Is that true? 19 MR. CHOWDHURY: Objection. Misstates 20 testimony. 21 THE WITNESS: As I said earlier, I used the 22 functionality of gyroscope sensors that gives you 23 information about the orientation of an object and the 24 rate of change of that orientation. 25 ///	36 1 A. Yes. 2 Q. And you reference Kobler650 in this section; 3 correct? 4 A. Yeah. 5 Q. But you don't discuss any other prior art 6 references; correct? 7 A. Correct. 8 Q. What would a person having ordinary skill in 9 the art understand the word "traction" to mean? 10 A. It would mean the grip that the -- that the 11 tire has with the road. 12 Q. So when the tire is gripping the road, the 13 vehicle will have traction; correct? 14 A. Correct. 15 Q. But if the wheels are spinning freely and not 16 gripping the road, the vehicle has no traction; correct? 17 A. Correct. 18 Q. Now, in paragraph 89, you reference what you 19 call a friction sensor; correct? 20 A. Yes. 21 Q. Is use of a friction sensor the only possible 22 way one can determine whether or not a vehicle has 23 traction? 24 A. Probably not. 25 Q. What are the other ways you could do that?
35 1 BY MR. HERMAN: 2 Q. So, in your view, Kobler650 is referencing the 3 use of the standard types of gyroscopes available in the 4 art as of its filing; correct? 5 MR. CHOWDHURY: Objection. Misstates 6 testimony. 7 THE WITNESS: As I said, I used the term -- the 8 functionality of the gyroscopic sensors as a whole and 9 not the particular model of a gyroscopic sensor. 10 BY MR. HERMAN: 11 Q. So Kobler650 would not be limited to any 12 particular type of gyroscopic sensor; correct? 13 A. Again, I cannot say -- what I am saying is, 14 basically, in my analysis, I used the general 15 functionality of a gyroscopic sensor that, as I said 16 earlier, gives information about the orientation and 17 rate of changes of this orientation. 18 Q. If you could turn to paragraph 87 of your 19 declaration? 20 A. Yes. 21 Q. This begins your discussion of the traction 22 condition; is that correct? 23 A. That is correct. 24 Q. And this section spans paragraphs 87 through 25 89; correct?	37 1 A. Other ways might be to compare the velocity of 2 the vehicle with the amount of torque that the engine 3 outputs to the vehicle and compare the two speeds. 4 Q. Could you use wheel speed sensors to determine 5 whether the vehicle has traction? 6 A. This might be a possibility. 7 Q. So, for instance, you could compare the wheel 8 speeds of the driven wheels to the wheel speeds of the 9 undriven wheels; correct? 10 A. I mean, if you compare, yeah. This might be 11 the case. 12 Q. And that's -- 13 A. It is one of -- I am sorry. It is one of the 14 possibilities. 15 Q. So what is a traction control system? 16 A. A traction control system tries to basically 17 deduce the slippage of the wheels. 18 Q. But can you use the acronym TCS to refer to a 19 traction control system? 20 A. Yeah. 21 Q. Do you agree with this statement of "Rotational 22 speed sensor, e.g., wheel speed sensor in a traction 23 control system, TCS, of a vehicle measures the 24 rotational speed of the wheel and revolutions per minute 25 providing precise data on wheel speed"?

38 1 A. Yes. 2 Q. When Koebler650 was filed, would a POSITA have 3 known what I just said? 4 MR. CHOWDHURY: Objection. Calls for 5 speculation. 6 THE WITNESS: There is no reference of any of 7 these techniques in the specification; so there is no 8 clear description of that. 9 BY MR. HERMAN: 10 Q. So my question is separate and apart from the 11 specification. Is that something a person having 12 ordinary skill in the art would have known? 13 A. Well, the TCS systems were available at the 14 time of the filing of the application. 15 Q. So do you agree with this statement, "Wheel 16 speed data is crucial for the TCS to detect and correct 17 wheel slip, ensuring optimal traction and vehicle 18 stability"? 19 A. I do not disagree. 20 Q. So would a person having ordinary skill in the 21 art have known that a wheel RPM sensor is crucial to a 22 traction control system when Koebler650 was filed? 23 MR. CHOWDHURY: Objection. Calls for 24 speculation. 25 THE WITNESS: Again, there is no -- this may be	40 1 BY MR. HERMAN: 2 Q. I am sorry? 3 A. I suppose so. 4 MR. HERMAN: I don't have any further 5 questions. 6 MR. CHOWDHURY: Thank you. No further 7 questions for me as well. 8 (The deposition was concluded 9 at 9:51 p.m.) 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
39 1 the possibility, but there is no description of that in 2 the document. 3 BY MR. HERMAN: 4 Q. Separate and apart from what Koebler650 says, a 5 person having ordinary skill in the art would have 6 recognized that a wheel RPM sensor and the data produces 7 is crucial to traction control systems. True? 8 A. As I said, there may be different ways to use 9 this information to reach the determination of traction 10 and -- but, like I said, there is nor clear description 11 of how this is achieved. 12 Q. Are you talking about the prior art in general? 13 There is no clear description anywhere in the prior art 14 about the correlation or the use of wheel speed sensors 15 in traction control systems? 16 A. No. I am talking about the particular patent 17 application, the '650. 18 Q. So I am talking about the prior art. So my 19 question is, in the prior art to Koebler650, is it true 20 that wheel RPM sensors are crucial to traction control 21 systems? 22 A. I suppose so. 23 MR. CHOWDHURY: Objection. Calls for 24 speculation. 25 ///	41 1 I certify or declare under declaration 2 under penalty of perjury that the foregoing testimony is 3 true and correct. 4 5 Executed this ____ day of _____, 6 2024, at _____, California. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 DR. VASSILIOS MORELLAS

1 STATE OF CALIFORNIA)
2) ss.
3 COUNTY OF ORANGE)
4 I, LINDSAY ANNE STOKER, RDR, RMR, CRR, CRC,
5 and Certified Shorthand Reporter of the State of
6 California, does hereby certify:
7 That the foregoing deposition was taken
8 before me at the time and place therein set forth, at
9 which time the witness was duly sworn by me;
10 That the statements made on the record were
11 recorded stenographically by me and were thereafter
12 transcribed; said transcript being a true and correct
13 copy of the proceedings thereof;
14 I further certify that I am neither counsel for
15 nor related to any party to said action, nor in any way
16 interested in the outcome thereof;
17 Further, that if the foregoing pertains to the
18 original transcript of a deposition in a federal case,
19 before completion of the proceedings, review of the
20 transcript was not requested/offered on the record.
21 In witness whereof, I have subscribed my name,
22 this 16th day of December, 2024.
23 
24 _____
25 Lindsay A. Stoker, RDR, RMR, CRR, CRC
CA CSR No. 14373