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Transcript of Jianzhong Jiao, Ph.D.

Date: January 9, 2024

Case: Volkswagen Group of America, Inc. -v- Spero (PTAB)

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Transcript of Jianzhong Jiao, Ph.D.
Conducted on January 9, 2024

1 (1 to 4)

1	1	3
1	UNITED STATES PATENT AND TRADEMARK OFFICE	1
2	-----	2
3	BEFORE THE PATENT TRIAL AND APPEAL BOARD	3
4	-----	4
5	VOLKSWAGEN GROUP OF AMERICA, INC.,	5
6	Petitioner,	6
7	v.	7
8	YECHZKAL EVAN SPERO,	8
9	Patent Owner.	9
10	-----	10
11	Case No. IPR2022-00315	11
12	Case No. IPR2023-00318	12
13	U.S. Patent No. 9,955,551	13
14	-----	13
15	DEPOSITION OF JIANZHONG JIAO, PH.D.	14
16	Washington, DC	15
17	Tuesday, January 9, 2024	16
18	9:06 a.m. EST	17
19	Job No.: 519932	18
20	Pages: 1 - 128	19
21	Reported by: Judith E. Bellinger, RPR, CRR, CSR-TX	20
22	CCR-WA, CCR-NM	21
		22
2	2	4
1	Deposition of JIANZHONG JIAO, PH.D., held at	1
2	the offices of:	2
3		3
4		4
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14		14
15		15
16	Pursuant to notice, before Judith E.	16
17	Bellinger, Registered Professional Reporter,	17
18	Certified Realtime Reporter, and Notary Public in	18
19	and for the District of Columbia.	19
20		20
21		21
22		22

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2 (5 to 8)

5	7
1 C O N T E N T S	1 P R O C E E D I N G S
2 EXAMINATION OF JIANZHONG JIAO, PH.D. PAGE	2 JIANZHONG JIAO, PH.D.,
3 By Ms. Shah 7	3 being first duly sworn, was examined
4	4 and testified as follows:
5	5 EXAMINATION BY COUNSEL FOR THE PATENT
6 E X H I B I T S	6 OWNER
7 Previously Marked:	7 BY MS. SHAH:
8 VWGoA Exhibit:	8 Q All right. Nice to see you again,
9 Exhibit 1003 Declaration of Jianzhong Jiao, 9	9 Dr. Jiao.
10 Ph.D., in Support of Petition for	10 A Nice to see you again, Sangeeta.
11 Inter Partes	11 Q I hope you had a nice holiday.
12 Review of U.S. Patent No. 9,955,551	12 A I hope you did, too. I did.
13 Case IPR2022-00315	13 Q Very good.
14 Exhibit 1003 Declaration of Jianzhong Jiao, 100	14 All right. So, I just, again, will
15 Ph.D., in Support of Petition for	15 kind of go through the beginning instructions,
16 Inter Partes Review of U.S.	16 just to make sure.
17 Patent No. 9,955,551 C1, Case	17 If you have any questions, as you know,
18 IPR2023-00318	18 please feel free to let me know in advance. So if
19 Exhibit 1010 International Publication 113	19 you have any questions, you need clarification of
20 Number WO 98/54030	20 the question, please, make a note so that the
21 Exhibit 1013 Japanese Unexamined Patent 120	21 record is clear and you're answering, very
22 Application Publication H7-65603	22 clearly, the questions that are being posed.
6	8
1 E X H I B I T S C O N T I N U E D	1 So you're acknowledging that you will
2 Exhibit 1052 Declaration of Jianzhong Jiao, 102	2 stop me if you have a need for clarification of a
3 Ph.D., in Support of Petitioner's	3 question?
4 Reply, Patent Number 9,955,551,	4 A I will.
5 Case IPR2022-00315	5 Q Okay. And with that, you understand
6 Exhibit 1052 Declaration of Jianzhong Jiao, 102	6 that these questions are going to be about two
7 Ph.D., in Support of Petitioner's	7 different IPR proceedings related to the '551
8 Reply, Patent Number 9,955,551	8 patent.
9 Case IPR2023-00318	9 A Yes.
10	10 Q And that for purposes of truncating,
11	11 just ease of discussion, I will be referring to
12	12 the IPRs in reference to the last four digits of
13	13 the various IPRs, there's two IPRs in this case.
14	14 And so, again, we will be referring to them as the
15	15 318 and 315 IPRs. And for ease of the transcript,
16	16 as much as possible, I will focus on one IPR and
17	17 then proceed to the other IPR.
18	18 A That's good.
19	19 Q All right. Okay. Very good.
20	20 All right. Let's get started.
21	21 Okay. If you could turn to the 315 IPR
22	22 and, specifically, your initial declaration in

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1 that IPR, which I believe is Exhibit 1003. 2 (VWGoA Exhibit 1003 previously marked 3 for identification and retained by counsel.) 4 A I have it in front of me. 5 Q Okay. You have the 315 IPR in front of 6 you, then, your declaration in that 315 IPR? 7 MR. SOULE: Sorry, did you say 1003? 8 Q 315 the last four digits? 9 MR. SOULE: The exhibit number. 10 MS. SHAH: I'm sorry. No, no, I'm 11 sorry, it's Exhibit 1003, and it is associated 12 with the IPR 2022-00315, which, for purposes of 13 this transcript, I'm going to truncate all of the 14 IPR reference numbers and just refer to the last 15 three digits of any given IPR. 16 MR. SOULE: So you're saying the first 17 declaration in that proceeding? 18 MS. SHAH: Correct. 19 A Okay. I have it in front of me. 20 Q Okay. If you could turn to page 14 of 21 that -- of -- do you have a PDF version of that 22 IPR?	11 1 bullet on page 14, bottom of page 14. 2 A "In determining whether a prior art 3 reference would have been combined with another 4 prior art reference or whether information known 5 to a POSA, I have been told that the following 6 principles may be considered." 7 First bullet point, "A combination of 8 familiar elements according to known method is 9 likely to be obvious if it yields predictable 10 results." 11 Q Okay. Is that a principle that you 12 applied when you were doing your declaration? 13 A It is one of the principles that I 14 considered to generate my declaration. 15 Q Okay. Can you explain to me what the 16 meaning -- what your understanding is of "familiar 17 elements" in that -- the bullet that you just 18 read? 19 MR. SOULE: Objection. Form. 20 A I understand the familiar elements is 21 familiar -- is the information known to a POSA 22 according to the known method.
10 1 A Yes, I do. 2 Q I'm sorry. Your declaration. 3 A I have the hard copy. 4 Q Okay. So there may be a little bit of 5 numerical difference between the numbers I give 6 you and the numbers of the hard copy, but we'll 7 make do. 8 So, if you can turn to page, what is 9 for me page 14 of the PDF. But, specifically, if 10 you could turn to paragraph 39. 11 A Yes, that's also page 14 of hard 12 copy -- 13 Q Oh, okay. 14 A -- just for your knowledge. 15 Q Fair. 16 So, if you could take a quick glance at 17 paragraph 39. I'm just going to ask you some 18 questions about that paragraph. 19 A This is -- you want me to read the 20 entire paragraph? 21 Q If you could read, for right now, if 22 you could read the first paragraph and the first	12 1 Q I'm sorry. Give me just one minute. 2 MS. SHAH: So if we could go off record 3 for one minute. I'm not able to get my realtime 4 feed. 5 (Off the record.) 6 MS. SHAH: On the record again, please. 7 BY MS. SHAH: 8 Q So you just indicated that familiar 9 elements are the information "known to a POSA 10 according to the known method." 11 MR. SOULE: Objection to form. 12 Mischaracterizes the witness' testimony. 13 Q What determines whether a POSA knows 14 the method? 15 MR. SOULE: Objection to form. 16 A It's stated in my declaration. "Known 17 to a POSA" includes the knowledge that it is 18 familiar -- that is familiar elements in the art. 19 Q Is the state of the art relevant to 20 determining if the teaching is known to a POSA? 21 MR. SOULE: Objection. Form. 22 A Can you repeat your question, I don't

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13 1 think I quite get it? 2 Q Yes. 3 Is the state of the art relevant to 4 determining whether a teaching is known to a POSA? 5 MR. SOULE: Same objection. 6 A The consideration stated the 7 combination of familiar elements according to 8 known methods. That's what I used, one of the 9 principles. 10 Q I'm sorry, I'm not sure that you 11 answered my question. 12 Would you like me to read it back to 13 you? 14 A I think I heard your question. I do 15 not see the definition for state of the art, 16 neither, in my declaration. I can't provide you 17 with an opinion without looking at my declaration, 18 or you provide me with a definition. 19 Q Oh, you're free to look at your 20 declaration. Feel free to reference your 21 declaration. I'm trying to understand, you know, 22 you're taking a look at the specific pages of your	15 1 Q As part of your analysis, did you 2 factor in what a POSA would understand at a 3 relevant time, specifically, July 2002? 4 MR. SOULE: Objection. Form. Compound 5 question. 6 A I'm thinking the paragraph that I put 7 down in my declarations, the description for a 8 POSA were the knowledge, experience, education, et 9 cetera, et cetera, is related to a time frame. 10 I can read it to you. 11 Q Okay. So, is it, then, the case that 12 as part of your analysis, you factored in the 13 knowledge that a POSA would have as of July 2002, 14 as part of your declaration analysis? 15 MR. SOULE: Objection. Form. 16 A I described what a POSA should be in 17 order to do the analysis, which includes the time 18 frame. And for the POSA that I described, yes, I 19 applied my understanding to write in my 20 declarations. 21 Q Do you consider yourself to have more 22 expertise than the POSA that you described in your
14 1 declaration. And in reference to the bullet that 2 you read, that discussed "familiar elements," I'm 3 trying to understand what you took into 4 consideration? 5 MR. SOULE: Objection. Form. 6 A Well, I consider myself as a POSA. I 7 consider myself, the information in the arts that 8 displayed a combination of familiar elements 9 according to known methods, using my POSA 10 experience, background knowledge. 11 Q Do you consider yourself to be more 12 than a POSA, in terms of your experience base? 13 MR. SOULE: Objection. Form. 14 A I do not know how to define more than a 15 POSA. 16 Q Is there a difference between an expert 17 and a POSA? 18 MR. SOULE: Objection. Form. 19 A I consider myself a POSA. My 20 declaration, I'm pretty sure I just have a 21 description for what I think, what a POSA should 22 be for this particular case.	16 1 declaration? 2 MR. SOULE: Objection. Form. Asked 3 and answered. 4 A I consider myself as a POSA, as I 5 described in my declarations. 6 Q So, you've provided a specific standard 7 for a POSA. And is it your -- is it correct, 8 then, to understand that your expertise is in line 9 with that of a POSA and nothing more? 10 MR. SOULE: Objection. Form. 11 Objection. Foundation. Objection. 12 Mischaracterizes witness' testimony. 13 A I don't think I understand the 14 description, "nothing more." 15 I provided the description for a POSA 16 and I stated I am a POSA that I described what a 17 POSA should be. 18 Q Okay. So, previously, I asked you the 19 question, do you consider yourself to have more 20 expertise than the POSA that you described in your 21 declaration? To which you answered "I consider 22 myself as a POSA."

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17 1 What I'm asking you is, is there any 2 area to which you have expertise beyond the POSA 3 standard that you defined in your declaration? 4 MR. SOULE: Objection. Form. 5 Objection. Scope. Relevance. 6 A I don't know how to answer. There's 7 defined -- I described the skills and the time 8 frame, knowledge, skills, and education. 9 MS. SHAH: I'm sorry. Is it possible, 10 maybe, to put the mic closer to Dr. Jiao because 11 it's a little faint. 12 A Is this better? Can you hear better? 13 Q Yeah, much better. 14 A Oh, I'm sorry. 15 MR. SOULE: Can you still hear me? 16 MS. SHAH: Okay. 17 A I'm sorry, can you still hear Ian? 18 MR. SOULE: Check, check, check. Can 19 you still hear me? Objection. 20 MS. SHAH: Yes. 21 THE WITNESS: Can you repeat your last 22 question, or can you -- what did I need -- I	19 1 A I would like to reply in such: I 2 provided the level of ordinary skill in the art in 3 my declaration in particular, my first declaration 4 in paragraph 44, where I stated "In my opinion, a 5 POSA, in the context of '551 patent, as of 6 July 12th, 2002, would have a bachelor, BS degree 7 in mechanical engineering, electrical engineering, 8 optical engineering, applied physics, or 9 equivalent field." 10 I consider myself fit this description. 11 I do have more than bachelor degree. I have a 12 master's degree, doctor degree following that, as 13 well as two years of industry experience in the 14 area of automotive lighting and lighting control 15 system. 16 Yes, at the time, I had more than 17 two years of lighting experience. 18 To answer that question, I fit into the 19 description of a POSA. I have BS degree, and in 20 addition, when you use the word more than POSA, 21 yes, I have a master's degree and Ph.D. 22 In terms of experience by 2002,
18 1 didn't say anything that you didn't hear. 2 Q It's still a little muffled. I'm not 3 sure why that's the case, but we'll do our best. 4 A I'm very close to the microphone. 5 THE WITNESS: Is this a real microphone 6 we're using? 7 PLANET DEPOS TECHNICIAN: The volume 8 has been raised all the way, so... 9 THE WITNESS: Can you hear me better 10 this time? 11 Q It's sort of the same, but I'll do my 12 best. I have the feed so I can -- I'll just read. 13 I'm sorry. Would you like me to repeat 14 the last question? 15 A Sure. 16 Q So, what I'm asking you is, you 17 provided a standard for what a POSA should be in 18 your declaration. I'm trying to understand, do 19 you consider yourself to have expertise in any 20 area beyond the POSA standard that you defined? 21 MR. SOULE: Objection. Form. Scope. 22 Relevance.	20 1 July 12th, I had more than two years. 2 Q Okay. So, in reference to the question 3 of whether you factored in the relevant state of 4 the art that a POSA would be aware of as of 2002, 5 what steps did you take in determining your 6 opinions to factor in the state of the art as a 7 POSA, which is something different than yourself? 8 MR. SOULE: Objection. Form. Scope. 9 Mischaracterizes the witness' testimony. 10 Q I can ask the question again. 11 A I would especially -- I didn't have an 12 understanding of what you mean "state of the art 13 as a POSA." 14 I didn't define state of the art as a 15 POSA at the time -- 16 Q Okay -- 17 A -- whatever the time frame is. 18 Q All right. So let's start off with the 19 question that you have indicated, that you have 20 more experience and higher level of educational 21 degree than the POSA that you identified in the 22 declaration; is that accurate?

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21 1 MR. SOULE: Objection. Form. 2 Objection. Mischaracterizes witness' testimony. 3 A I was responding to your question 4 whether I -- 5 Q I -- I'm sorry. Could you ask [sic] 6 the question that I just posed to you? 7 A I responded to a question. That was 8 it. 9 Q Okay. So I'll rephrase -- I'll restate 10 it. 11 Do you have more experience and a 12 higher educational set of degrees than the POSA 13 standard that you defined in your declaration? 14 MR. SOULE: Objection. Form. 15 Foundation. Scope. Asked and answered. 16 A I answered. I meet the description of 17 POSA. I did state I -- yes, I have a bachelor 18 degree or more -- and more. I have two years 19 experience and more. I meet the description of 20 POSA. That's what I used as the POSA description 21 and the principle of considering -- the principles 22 for consideration described in that paragraph you	23 1 A Sure. 2 Q Did you consider the difference in 3 knowledge that a person of skill in the art would 4 have in July of 2002 versus the knowledge that you 5 possess today in rendering your declaration? 6 MR. SOULE: Objection. Form. 7 A If I understand correctly, you want me 8 to do a memory check, what is my knowledge in 2002 9 versus 2024. 10 I'm not able to say. I don't know how 11 to make that comparison. 12 Q What is your understanding of the kind 13 of hypothetical person that is a POSA, as compared 14 to yourself and the knowledge that you possess 15 right now? 16 MR. SOULE: Objection. Form. 17 A I consider a POSA as in the description 18 that I provided in my declaration. 19 Q Would you consider a hypothetical 20 teaching to be a "familiar" element? 21 MR. SOULE: Objection. Form. 22 Objection. Calls for speculation.
22 1 referred to. 2 Q So, since you have more than two years 3 of experience and a Ph.D., what steps did you take 4 to try to understand what a POSA, in July of 2002, 5 would "consider to be familiar elements"? 6 MR. SOULE: Objection. Form. 7 Objection. Asked and answered. 8 A I used the POSA skills, knowledge, and 9 experience, as I described in my declaration, and 10 made a consideration of the familiar elements and 11 known methods. 12 Q Did you consider the difference in 13 knowledge that a person of skill in the art would 14 have in July of 2002 versus the knowledge that you 15 possess today? 16 MR. SOULE: Objection. Form. 17 A I considered the principles listed in 18 my declaration based on my description of POSA, 19 which I met the description of POSA. 20 Q I'm sorry. I don't think you answered 21 my question. 22 Would you like me to repeat it?	24 1 A I'm sorry. Can you repeat the 2 question? 3 Q Would you consider a hypothetical 4 teaching to be a "familiar" element? 5 MR. SOULE: Objection. Form. 6 Objection. Calls for speculation. 7 A I don't think I understand that 8 question, what "hypothetical teaching" means. 9 Q Do you understand the word 10 hypothetical? 11 MR. SOULE: Objection. Form. 12 Objection. Scope. 13 A I do. 14 Q What's your understanding of the word 15 hypothetical? 16 MR. SOULE: Objection to form. 17 A Hypothetical. 18 Q I'm sorry. What's your understanding 19 of the word hypothetical? 20 MR. SOULE: Objection. Form. 21 A That's how I understand it. 22 Hypothetical is not necessarily a reality.

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25 1 Q Is it your understanding that not all 2 teachings are the same, that some teachings were 3 based on documented proofs and others are more 4 aspirational? 5 MR. SOULE: Objection. Form. Compound 6 question. Calls for speculation. 7 A Are you referring to the teaching in 8 the art that I referenced? 9 Q Right now, I'm referring sort of 10 broadly to the concept of a hypothetical teaching; 11 that it is possible that a teaching can be 12 hypothetical. 13 MR. SOULE: Objection. Form. 14 Objection. Compound question. Calls for 15 speculation. 16 I'm not sure if there's a question 17 there. 18 A I'm sorry. I do not understand that 19 question. 20 Q Okay. So, do you think all teachings 21 are the same, that if -- let me strike that. 22 If a teaching is not rooted in accepted	27 1 was the question about my thinking of that 2 particular teaching? I don't think I get that 3 part. 4 Q I'm asking whether you would consider 5 that type of a teaching to be a "known teaching" 6 or a "hypothetical teaching"? 7 MR. SOULE: Objection. Form. 8 Objection. Calls for speculation. Incomplete 9 hypothetical. Scope. 10 A Powering a lamp using cold fusion to 11 teach -- teaching such depends upon a person of 12 ordinary skill in the art to say is known or not. 13 Q I'm trying to understand if -- do you 14 think if a person of skill in the art read a 15 publication that talked about powering the lamp 16 using cold fusion, whether that person of skill in 17 the art would consider that teaching to be a known 18 teaching or a hypothetical teaching? 19 MR. SOULE: Objection. Form. Scope. 20 Calls for speculation. Incomplete hypothetical. 21 Asked and answered. 22 A I don't think I fully understand the
26 1 proofs from the state of the art and is more 2 aspirational, would that be considered a 3 hypothetical teaching? 4 MR. SOULE: Objection. Form. Compound 5 question. Confusing. Calls for speculation. 6 Incomplete hypothetical. 7 A It may be helpful if you give me an 8 example. 9 Q If a teaching calls for power in a lamp 10 using cold fusion, would you consider that to be a 11 known teaching or a hypothetical teaching? 12 MR. SOULE: Objection. Form. 13 Incomplete hypothetical. Calls for speculation. 14 Compound question. Scope. 15 A The teaching, again, you're referring 16 to hypothetically, whatever materials, documents 17 or literature is teaching, powering the lamp 18 using -- I'm sorry, what kind of source to power 19 the lamp? Can you repeat that part? 20 Q Cold fusion. 21 A If powering the lamp used cold effusion 22 [sic] and your question is whether I think -- what	28 1 question. 2 Again, teaching whatever subject, you 3 said is judged by a POSA is known or not, is based 4 on the description of the POSA. 5 Q Okay. So let's specify the question. 6 So, let's say, hypothetically, as of 7 July 2002, there was a publication that described 8 the potential ability to power a lamp using cold 9 fusion. Based on the POSA standard that you 10 defined in your declaration, would a POSA combine 11 that teaching as a "known teaching" as part of an 12 obviousness combination? 13 MR. SOULE: Objection. Form. Compound 14 question. Scope. Calls for speculation. 15 Incomplete hypothetical. Foundation. 16 A I don't know. 17 Q All right. If you can go back to 18 pages 14 and 15 of the -- of your declaration in 19 the 315 IPR. 20 A Okay. I'm here. 21 Q Can you explain to me what is meant by 22 the term "known method"?

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29 1 MR. SOULE: Objection. Form. 2 A Known method is known to a POSA. 3 Q How does -- in this case, as an expert 4 in this field, how do you determine what is known 5 to a POSA? 6 MR. SOULE: Objection. Form. Scope. 7 A Well, I determine known to POSA based 8 on my description of a POSA. 9 Q Would something be known to a POSA if 10 it was a matter that experts were working on well 11 beyond the relevant time period? 12 MR. SOULE: Objection. Form. Scope. 13 Calls for speculation. Incomplete hypothetical. 14 A Perhaps a more specific example for 15 that question would be helpful to understand that 16 question. 17 Q That was our cold fusion line of 18 questioning. That's fine. We'll move on. 19 Can you explain to me what you mean by 20 the term -- what is your -- strike that. 21 What's your understanding of 22 "predictable result," as stated in your	31 1 determine if a result was predictable, what 2 knowledge and experience did you employ? 3 MR. SOULE: Objection. Form. 4 A I used the knowledge and experience 5 that I described as POSA should have. 6 Q Okay. And since your knowledge base 7 and experience base is more than the POSA standard 8 that you've described, what steps did you take to 9 familiarize yourself with the knowledge that a 10 POSA would have in July 2002? 11 MR. SOULE: Objection. Form. 12 Objection. Asked and answered. 13 A In the description of a POSA, I 14 described the knowledge and experience. That's 15 what I did to conduct an analysis in using these 16 principles of consideration -- to conduct an 17 analysis for the descriptions I provided in 18 paragraph 39. 19 Q As part of your analysis for your 20 declaration, did you go back and review the 21 publications that preceded July 2002 to understand 22 the relevant knowledge base of a POSA during the
30 1 declaration on page 15? 2 MR. SOULE: Objection to form. 3 A The principle that I state is 4 combination of familiar elements according to 5 known methods. It's likely to be obvious if 6 yields predictable results in my POSA's mind, 7 means it will work. Or you will not work, either. 8 Q So something is obvious if it works, is 9 that -- am I understanding your answer properly? 10 MR. SOULE: Objection. Form. 11 Objection. Mischaracterizes witness' testimony. 12 A What I said, if it yields predictable 13 result to a POSA, it's predictable. It would work 14 or not work. 15 Q How would a POSA understand that a 16 result is predictable? 17 MR. SOULE: Objection. Form. Scope. 18 A It is based on the description of a 19 POSA with knowledge, experience. Knowledge and 20 experience will help to determine if it yields 21 predictable result. 22 Q So when you were undertaking to	32 1 relevant time period? 2 MR. SOULE: Objection. Form. 3 Objection. Compound question. 4 A The description for a POSA, in my 5 declaration, described the knowledge and 6 experience of a POSA in that time frame. 7 The references is within the 8 description of the POSA's knowledge and 9 experience, as long as published in that time 10 frame. 11 Q I'm still not clear about whether you 12 answered my question. 13 I'm not asking you to reference the 14 specific art which you relied on. I'm asking 15 whether you studied what was the knowledge base of 16 a POSA back in July 2002 -- 17 MR. SOULE: Objection. Form. 18 Q -- so that you could step into the 19 shoes of this hypothetical POSA? 20 MR. SOULE: Objection. Form. 21 Objection. Compound question. Incomplete 22 hypothetical. Asked and answered.

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33 1 A I used the description of POSA to 2 review the references, just like I was – I was 3 the POSA at the time frame. 4 Q So, back in July 2002, you were a POSA? 5 MR. SOULE: Objection. Form. 6 Objection. Mischaracterizes witness' testimony. 7 Objection. Asked and answered. 8 A What I said is, my description for POSA 9 in my declaration includes a time frame. I can 10 read it to you. And I also -- 11 Q I don't need you to read it. I'm just 12 asking you a specific question. 13 A Yeah, specifically, I met a POSA 14 description. 15 Q Yes, I understand there's a POSA 16 standard in your declaration. And I'm trying to 17 understand that -- whether you took steps to 18 understand what a hypothetical POSA would 19 understand back in July 2002, since, as you've 20 already testified, today, you're more than a POSA? 21 MR. SOULE: Objection. Form. Compound 22 question. Confusing. Incomplete hypothetical and	35 1 I'm asking you, today, is it the case 2 that you have great more educational training, by 3 way of degrees, than the POSA standard that you 4 articulated in your declaration, yes or no? 5 MR. SOULE: Objection to form. 6 A The statement I made is that I 7 described the POSA and I used every category that 8 I described, I add a couple of statements as I met 9 the education requirements, I met experience 10 requirement. That's my description. 11 I don't have to describe what my 12 knowledge is today, isn't it? 13 Q Okay. So, Dr. Jiao, do you have a 14 Ph.D.? 15 A I do. 16 Q Does a Ph.D. require more educational 17 training than the POSA you articulated in your 18 declaration? 19 MR. SOULE: Objection. Form. 20 A I described what is BS degree, in terms 21 of the engineering-related fields. Whether you 22 have additional education may not be necessarily
34 1 mischaracterizes witness' testimony. 2 A I have difficulty to understand the 3 description of "more than a POSA," so... 4 Q Okay. Let's take it step-wise, then. 5 As of today, do you agree that you have 6 more knowledge, by way of educational degrees, 7 than the POSA standard you articulated in your 8 declaration? 9 MR. SOULE: Objection. Form. 10 Objection. Compound question. Scope. Asked and 11 answered. 12 A That's not relevant to my declaration, 13 is it? 14 Q Are you refusing to answer the 15 question? 16 MR. SOULE: Objection. Form. 17 Objection. Mischaracterizes witness' testimony. 18 Asked and answered. 19 A I respond -- I will respond to this. I 20 described what a POSA should be in my declaration. 21 Yes, I am a POSA. 22 Q No, I understand that.	36 1 related to POSA. I may have a Ph.D. in English 2 literature, whatever that is. But as long as you 3 have a bachelor of science degree in these fields 4 I listed as a POSA. 5 Q I'm simply asking you if you have 6 educational training, by way of procuring a Ph.D., 7 in the engineering-related fields you identified 8 than the POSA standard that you articulated? 9 It's a really simple yes-or-no 10 question. 11 MR. SOULE: Objection. Form. Asked 12 and answered. 13 A I think my simple answer is, I 14 described what a POSA should possess. 15 Q I'm not asking you about the POSA. I'm 16 asking you about your expertise. 17 Sitting here today, do you have more -- 18 additional degrees than the POSA standard that you 19 articulated in your declaration, yes or no? 20 MR. SOULE: Objection. Form. Asked 21 and answered. 22 A Sitting here today, I have more

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37 1 education. 2 Sitting here today, I have more 3 experience than I described. 4 Q Than you described for the POSA 5 standard; is that correct? 6 A But today is 2024, and the POSA 7 standard was 2002. 8 Q Yes. So sitting here in January 2024, 9 you have a Ph.D., which is substantially more 10 educational training than the POSA standard you 11 articulate; is that correct? 12 MR. SOULE: Objection. Form. 13 Objection. Relevance. 14 A The correct part is I had a bachelor 15 degree at the time that I described the POSA in 16 the fields related to that specific field that I 17 listed, in 2002. 18 2024, as of today, I have more 19 education. That's why I answered yes. 20 Q In July 2002, did you have your Ph.D.? 21 A Yes. 22 Q So as of July 2002, you had already had	39 1 Q Correct? 2 A Correct. 3 Q Since you, in July 2002, have both 4 greater educational training and industry 5 experience than the POSA standard that you 6 articulated in your declaration, what steps did 7 you take to factor in the difference of knowledge 8 base of a POSA as compared to your own knowledge 9 base as of July 2002? 10 MR. SOULE: Objection. Form. Asked 11 and answered. 12 A I used the steps of the knowledge and 13 experience that are described in my declaration to 14 determine the familiar elements and use methods. 15 Q Can you point to me what, specifically, 16 you described in your declaration to allow 17 yourself to step into the shoes of a POSA when, as 18 you just testified, you had greater educational 19 experience and industry experience than a POSA? 20 MR. SOULE: Objection. Compound 21 question. Objection. Form. Vague. Objection. 22 Mischaracterizes witness' testimony.
38 1 more educational training than the POSA standard 2 that you articulated in your declaration, yes or 3 no? 4 MR. SOULE: Objection. Form. 5 Objection. Relevance. 6 A The additional training is not relevant 7 to what I described for the POSA's experience, 8 knowledge, in the time frame 2002. 9 Again, the additional training may not 10 even be related to the field that I described as a 11 POSA. So that's not relevant. 12 Q As of July 2002, did you only have 13 two years of industry experience? 14 MR. SOULE: Objection. Form. 15 A As of July 2002, I have more than 16 two years of industry experience in automotive 17 lighting. 18 Q So as of July 2002, you both had -- you 19 had both a Ph.D. and more than two years of 20 industry experience? 21 MR. SOULE: Objection. Form. Asked 22 and answered.	40 1 A I can point out my declaration, I 2 described what a POSA is. And I also responded, I 3 met the description of a POSA. 4 Q So, did you, then, base your opinions 5 off of your understanding, circa July 2002, in 6 making the declaration -- in making your 7 declaration? 8 MR. SOULE: Objection. Form. Asked 9 and answered. 10 A I used the description of a POSA to 11 conduct an analysis and develop my -- generated my 12 declarations. 13 Q Did you factor in the difference -- the 14 knowledge difference that a person of skill in the 15 art would have, both in educational training and 16 industry experience, in formulating your opinions 17 for your declaration? 18 MR. SOULE: Objection. Form. Asked 19 and answered. 20 A I do not know how to answer that 21 question. 22 Q What part of that question don't you

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1 understand? 2 A When you say "factor in," I described 3 what a POSA should be. And that's the POSA's 4 experience, knowledge, and skills that are used to 5 conduct analysis. And I can't add anything more 6 affecting than what I described what a POSA should 7 be doing. 8 Q Dr. Jiao, do you know what an optical 9 control is? 10 MR. SOULE: Objection. Form. 11 A Yes. 12 Q Does a POSA know what an optical 13 control is? 14 MR. SOULE: Objection. Form. 15 A Yes. 16 Q If there was a reference that only 17 included a statement regarding optical control 18 without any additional details, how would a POSA 19 understand that reference? 20 MR. SOULE: Objection. Form. Compound 21 question. Incomplete hypothetical. 22 A You may have to be more specific than	1 MR. SOULE: Objection. Form. 2 Objection. Compound question. Objection. 3 Incomplete hypothetical. Calls for speculation. 4 A Again, the term "optical control" is 5 commonly used as the control elements – the 6 control elements is optical elements that is known 7 by any POSA before 2002. 8 Q Would there be a difference in your 9 understanding of optical control versus a POSA's 10 understanding of optical control -- 11 MR. SOULE: Objection. Form. 12 Q -- as of July 2002? 13 MR. SOULE: Objection. Form. 14 Objection. Compound question. Calls for 15 speculation. Incomplete hypothetical. 16 A I couldn't tell there's any difference. 17 It is a commonly used term for optical – for 18 elements or device to perform optical control as 19 common knowledge before 2002, or even from a 20 textbook, you can find optical control. 21 Q If you could turn to page 15 of your 22 declaration.
1 "optical control." Is referring to what 2 configuration? If you presented that, the POSA 3 would know. 4 Q So if there was a reference that merely 5 mentioned an optical control without any 6 additional details, would a POSA -- what would a 7 POSA understand about the optical control? Would 8 it understand that it was a known teaching -- 9 MR. SOULE: Objection. Form. 10 Q -- as of July 2002? 11 MR. SOULE: Objection. Form. Compound 12 question. Calls for speculation. Incomplete 13 hypothetical. 14 A In July 2022 [sic], a POSA would know 15 optical control means optically controlled – I'm 16 sorry, I should say this: Is a control to the 17 optics, or control to the optical elements, 18 controlled by the optical elements, I should say. 19 Q As of July 2002, would there be a 20 difference in your understanding of optical 21 control versus a POSA's understanding of optical 22 control?	1 A I'm here. 2 Q Do you see the term "simple 3 substitution"? 4 A Yes, I do. 5 Q In your opinion, what is meant by 6 "simple substitution"? 7 MR. SOULE: Objection to form. 8 A That is not a complicated substitution. 9 Q In what situations would a person of 10 skill in the art understand the combination of 11 something other than a simple substitution? 12 MR. SOULE: Objection. Form. 13 Objection. Calls for speculation. 14 A I don't see that consideration for the 15 prior art combination that uses non-simple 16 substitution. I didn't state it as consideration, 17 principles of consideration. 18 Q Can you describe for me a situation 19 under which a person of skill in the art would 20 find a combination to be something that is not a 21 simple substitution? 22 MR. SOULE: Objection. Form.

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45 1 Objection. Calls for speculation. Objection. 2 Incomplete hypothetical. 3 A Again, in my declaration, I didn't 4 really describe what you have "non-simple 5 substitution" of known elements, what to do. I 6 don't -- I didn't have a description for 7 "non-simple substitution." 8 Q In your opinion, if a person of skill 9 in the art was reading a reference, would that 10 POSA understand the reference and the context of 11 the current state of the art at a given relevant 12 time? 13 MR. SOULE: Objection. Form. Compound 14 question. Calls for speculation. Incomplete 15 hypothetical. 16 A When a POSA is reading a reference, 17 POSA would have understood that reference based on 18 the POSA's knowledge and experience. And when you 19 use the word "state of the art," then you also use 20 the word "current." 21 And I think, if I understand it 22 correctly, you meant the state of the art at the	47 1 Objection. Calls for speculation. Objection. 2 Scope. 3 A Did I understand your question 4 correctly, that when you, again, used the word 5 "state of the art," it was referring to at the 6 time of 2002? 7 Q That particular question didn't have a 8 time period. I was asking you more generally. 9 When you were completing your analysis 10 for this declaration, was it your -- did you 11 factor in the potential impact of the state of the 12 art, in this case, as of July 2002 and how that 13 would impact a POSA's understanding of a given 14 reference? 15 MR. SOULE: Objection. Form. Compound 16 question. Asked and answered. 17 A I hope I understand this time 18 correctly. 19 For the state of art of 2002, a POSA 20 read reference or review the reference, would 21 understand the reference. And when you use the 22 word "impact," you're referring to if the
46 1 time of 2002 or current, as of today? That was 2 not clear to me. 3 Q Yes. Let me clarify. 4 I'm talking about, in this instance, 5 the relevant time period is July 2002. So that 6 would be the case that a POSA, reading your 7 reference, would factor in the relevant state of 8 the art, in this case, as of July 2002? 9 MR. SOULE: Objection. 10 Q So would that reference be read in view 11 of that knowledge base? 12 MR. SOULE: Objection. Form. Compound 13 question. Calls for speculation. Incomplete 14 hypothetical. 15 A A POSA would reference and would 16 understand the reference if the POSA meets the 17 description that I provided in that time frame, 18 18 July 2002. 19 Q Does the state of the art of a given 20 time period impact the POSA's understanding of the 21 reference? 22 MR. SOULE: Objection. Form.	48 1 person -- if anybody, today, read reference as 2 what I described in POSA, I can't answer. I don't 3 know how to answer that question. 4 Q I'm going to ask you the question again 5 because you didn't answer my question. 6 In formulating your declaration, did 7 you assess the potential impact of the state of 8 the art as of July 2002 and how that would impact 9 a person of ordinary skill in the art's 10 understanding of a given reference? 11 MR. SOULE: Objection. Asked and 12 answered. Objection. Form. 13 Q Yes or no? 14 MR. SOULE: Objection. 15 Mischaracterizes witness' testimony. 16 A I don't know how to answer that 17 question. I said it -- 18 Q Why is that? 19 A Well, because I said, again, that my 20 analysis is based on POSA at the description I 21 described it, a POSA's experience and knowledge to 22 read, review, and provide the arts or reference in

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49 1 the provided declaration. That's what I did. 2 Q So other than what is specifically in 3 your declaration, you didn't take any other steps 4 to understand the limitations of a POSA's 5 experience or knowledge? 6 MR. SOULE: Objection. Form. 7 Objection. Mischaracterizes witness' testimony. 8 A I used the POSA's description that I 9 put down for POSA's knowledge and experience to 10 review the references to understand the 11 limitations. 12 MR. SOULE: Sangeeta, we've been going 13 about an hour and a half now. Do you have a sense 14 of when you'd like to take a break? 15 MS. SHAH: Yeah, maybe in another 15 or 16 so minutes. 17 MR. SOULE: Is that -- 18 THE WITNESS: I'm okay. I'm okay, 19 Sangeeta. 20 Q When you read the references cited in 21 your declaration, did you consider the full 22 context of those references?	51 1 are taken out of context? 2 MR. SOULE: Objection. Form. 3 Objection. Incomplete hypothetical. Calls for 4 speculation. 5 A I think I need it to be more specific 6 to answer that question. 7 Q If there's a single sentence that is 8 identified, and in a separate paragraph, there's 9 another sentence that further explains the "single 10 sentence," is it possible if one only considers 11 the single sentence to take the reference out of 12 context? 13 MR. SOULE: Objection. Form. Compound 14 question. Confusing. Calls for speculation. 15 Incomplete hypothetical. 16 A First of all, is it a general question 17 or this is related to my declarations? 18 Q It is related to your declaration, but 19 the question is more general. 20 A Is there anywhere you can point to me 21 what I stated in my declaration regarding that one 22 sentence and following sentence being
50 1 MR. SOULE: Objection. Form. 2 A When I read the references of -- I 3 considered the context of the reference. 4 Q What's your understanding of 5 considering the context of a reference? 6 MR. SOULE: Objection. Form. 7 A My understanding is what the reference 8 teaches as the subject and sometimes as the 9 details. 10 Q When you say "sometimes as the 11 details," in what instances do you not consider 12 the details? 13 MR. SOULE: Objection. Form. 14 Objection. Mischaracterizes witness' testimony. 15 A Well, we have to really be specific. I 16 have so many references that I reviewed and list 17 in my declarations. 18 If you want, I can go back to my 19 reference list, it'll tell you which one I didn't 20 look for too much of details, if you wanted to. 21 Q Do you agree that it's possible to 22 misunderstand the teachings of a reference if they	52 1 misunderstood. 2 Q No. This is a hypothetical that 3 relates to your declaration. 4 MR. SOULE: I'll reiterate my 5 objection. Form. Compound question. Confusing. 6 Calls for speculation. Incomplete hypothetical. 7 A I would like to get more specific 8 examples; I can answer you more precisely. 9 Q I'm asking you, in general, for any of 10 the references that you considered where there's 11 multiple sentences related to a specific teaching, 12 if you take a single sentence and don't factor in 13 the impact of the other related sentences 14 associated with that one teaching, is it possible 15 to misunderstand the teachings of that reference? 16 MR. SOULE: Objection. Again, form. 17 Compound question. Confusing. Calls for 18 speculation. Incomplete hypothetical. And, now, 19 asked and answered. 20 A I would answer in such that the 21 particular reference or teaching that you're 22 asking me to respond, in general, I need it to be

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53 1 a little more understanding what that teaching or 2 teaching material is. If you specifically talk 3 about the patent, I find one patent, I think you 4 can't do that, you can't use every sentence that a 5 patent teaches. 6 If I review the art that is prior art, 7 that I challenge the patent, no, I don't miss any 8 sentences that describe in the arts. 9 So, again, that depends upon the 10 context. 11 Q If you could turn to paragraph 46 of 12 your declaration. 13 A Okay. I'm here. 14 Q Did you have a particular technology in 15 mind when you state "I'm very familiar with the 16 technology in the '551 patent"? 17 MR. SOULE: Objection. Form. 18 A The specificity of the knowledge and 19 understanding is the POSA's experience and 20 knowledge of that I listed in my declaration. 21 Q So does the technology in the '551 22 patent include LED technology?	55 1 Q Do the claims of the '551 patent 2 involve controlling LEDs based on sensor inputs? 3 MR. SOULE: Objection. Form. 4 A It's based on the sensing and other 5 data or control mechanism to control the light. 6 The light source is LED. 7 Q Do the claims of the '551 patent 8 involve use of sensor data? 9 MR. SOULE: Objection. Form. Vague. 10 A Can you repeat the question? 11 MS. SHAH: Could you read it back for 12 Dr. Jiao, please. 13 A Can you repeat the question. Oh, you 14 mean... 15 MS. SHAH: Sorry, I'll go ahead and 16 read it back. 17 Q Do the claims of '551 patent involve 18 sensor data. 19 MR. SOULE: Objection. Form. Vague. 20 A Can you point out to me the claims or 21 you want me to read every single claims? 22 Q You can glance at the claims, if you
54 1 MR. SOULE: Objection. Form. 2 A It does. 3 Q Does the technology in the '551 patent 4 include sensors for headlamp controls? 5 MR. SOULE: Objection. Form. 6 A It does. 7 Q Does the technology in the '551 patent 8 includes image sensing? 9 MR. SOULE: Objection to form. 10 A Can we go see the patent language? I 11 think the word is "image data," isn't it? 12 Q Okay. We can use your terminology. 13 Does the technology of the '551 patent 14 include the use of image data? 15 MR. SOULE: Objection. Form. 16 Mischaracterizes witness' testimony. 17 A '551 patent, it disclosed the image 18 data terminology. 19 Q In the '551 patent, is the image data 20 obtained through sensors? 21 MR. SOULE: Objection. Form. 22 A Yes.	56 1 need, for purposes of answering the question. 2 A Oh, there's many claims here. 3 Wait a minute. What am I doing? 4 There's something wrong with my 5 reference. Give me a second because this is '551 6 patent, but for whatever reason, something's -- 7 MR. SOULE: Can we go off the record? 8 (Discussion held off the record.) 9 (Recess taken from 10:44 a.m. to 10 11:02 a.m.) 11 BY MS. SHAH: 12 Q So before we took our break, you were 13 taking a look at the claims, Dr. Jiao, to assess 14 whether the claims included the steps of obtaining 15 data from a sensed imaged to control the light 16 sources? 17 MR. SOULE: Objection. Form. 18 A I didn't take a look during the break. 19 I can take a look now. 20 MR. SOULE: Sangeeta, just so the 21 record is clear, when you're saying to look at the 22 claims, so, as you know, the '551 patent has

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57 1 original claims that were issued, it has 2 reexamined certificate, reexamined claims that 3 were issued, it also has a certificate of 4 correction. 5 And, so, to the extent you can make 6 clear which you're referring to, that would be 7 helpful for the record. 8 MS. SHAH: Sure. Let's go ahead and 9 specify. We'll take it one at a time, then. 10 Q Dr. Jiao, does claim 24 use a sensed 11 image to determine how to control light? 12 MR. SOULE: Objection. Form. 13 A I'm going to take a look at. 14 The original '551 claim 1, claim 1C 15 stated one or more detectors for sensing leads 16 to one of the object's surfaces and being within 17 the area of lit, including specific subarea, et 18 cetera. 19 Then processing. The process or 20 processing, the sensed information, meaning data, 21 I guess -- meaning data, and determining 22 illumination required of, at least in one of the	59 1 Objection. Mischaracterizes witness' testimony. 2 A What I responded is claim 24 included 3 elements stating one or more sensors, including 4 one or more cameras, which I addressed in my 5 declaration. 6 Q If we can turn to claim -- I'm sorry; 7 strike that. 8 Please read the phrase starting with 9 "determined coordinates." 10 A It's still claim 24? 11 Q With respect to claim 24. 12 A "For detecting coordinate-specific 13 information about illuminated area, at least one 14 of said camera in communication with the power and 15 in communication with at least one of the one or 16 more processors." 17 Q I'm sorry, could you read, with respect 18 to claim 24, the phrase beginning with determined 19 coordinates -- "determining coordinates 20 corresponding to." 21 A "Determining coordinates corresponding 22 to another vehicle based on the
58 1 objects. 2 That's in claim 1 of the original one. 3 Is that the same? 4 Your question is for the '551 patent, 5 right, original patent? And I picked up one -- 6 Q My question was with respect to 7 claim 24. And specifically whether claim 24 uses 8 a sensor to determine how to control light? 9 A That is not in the original '551 10 patent. '551 patent doesn't have a claim 24. 11 Q No, it'll be in the reexamination. 12 A Okay. 24, element 5, which I think I 13 put a -- claim elements, just scrolled down the 14 paragraph, stating one or more sensors, including 15 one or more cameras placed on the structure for 16 detecting corner-specific information about 17 illuminated area, at least one of said cameras in 18 communication with power and in communication with 19 at least one of the -- one or more processors. 20 Q Okay. So, it's your testimony that 21 claim 25 includes sensors. 22 MR. SOULE: Objection. Form.	60 1 coordinate-specific information." 2 Q Okay. What was used to gather the 3 coordinate-specific information? 4 MR. SOULE: Objection. Form. 5 A It is the claim 24 stated one or more 6 sensors, including one or more cameras, that is 7 detecting coordinate-specific information. 8 Q Okay. Next, if we can turn to 9 claim 32. 10 A Okay. 11 Q Can you, please, tell me whether that 12 claim includes one or more sensors? 13 MR. SOULE: Objection. Form. 14 A Claim 32 stating "One or more sensors, 15 including one or more cameras placed on the 16 structure for determining coordinate-specific 17 information about illuminated areas, at least one 18 of the said camera in communication with power and 19 in communication with at least one of the one or 20 more processors." 21 Q So in claim 32, is the 22 coordinate-specific information gathered by

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61 1 sensors? 2 MR. SOULE: Objection. Form. 3 A I'm sorry, claim 32 described these 4 sensors, including one or more cameras, detecting 5 the coordinate-specific information. 6 Q Please read the phrase beginning with 7 "follow, based at least in part on data from one 8 or more" -- from one or more of the cameras. 9 A "Follow, based at least in part on data 10 from one or more of the cameras, at, at least, one 11 target with the diminished illumination, at least 12 one target changes locations relative to the motor 13 vehicle." 14 Q In the limitation that you just read, 15 was data from one or more of the cameras used? 16 MR. SOULE: Objection. Form. 17 A Claim 32 stated one or more sensors, 18 including one or more cameras, was placed on the 19 structure for detecting the coordinate-specific 20 information. 21 Q So data from one or more of the cameras 22 was used in the limitation that you just read?	63 1 communication with power, in communication with at 2 least one of the one or more processors." 3 Q With respect to claim 40, can you read 4 the phrase that begins "Determine a first cluster 5 of the LEDs"? 6 A "Determine a list of cluster," is this 7 the word -- claim elements, you want to start it, 8 "Determine a list of" -- 9 Q Yes. 10 A "Determine a list of cluster of the LED 11 illuminating, at least, a first portion of a first 12 other vehicle based on, at least in part, data 13 from one or more of the sensors, indicating a 14 first position associated with the first other 15 vehicle." 16 Q So do you agree, then, that data from 17 one or more of the sensors is used in claim 40? 18 A Yes. 19 Q Can you turn to claim 48? 20 A Yes. 21 Q Can you tell me if claim 48 includes 22 sensors?
62 1 MR. SOULE: Objection. Form. 2 A The claim 32 describes the 3 coordinate-specific information detected by 4 camera. 5 Claim 32 also described, and based on 6 part -- at least a part of the data from one or 7 more cameras, and at least one target would 8 diminish illumination as at least one target 9 changes location relative to the motor vehicle. 10 Q So, do you agree, then, that data from 11 one or more of the cameras is used in claim 32? 12 A Yes. 13 Q Can you turn to claim 40. 14 A Yes. 15 Q Can you tell me if claim 40 includes 16 sensors? 17 A Claim 40, stating "one or more sensors, 18 including one or more cameras, placed on a 19 structure for detecting coordinate-specific 20 information about the illuminated area and the 21 position to capture an image of at least two other 22 vehicles, at least one of the said cameras in	64 1 A Claim 48 states "one or more sensors, 2 including one or more cameras placed on the 3 structure for detecting coordinate-specific 4 information about the illuminated area, at least 5 one of said cameras in communication with power 6 and in communication with at least one of the one 7 or more processors." 8 Q Can you read the portion of claim 48 9 that begins "illuminate a portion of at least one 10 object indicated by data from at least one or more 11 sensors." 12 A "Illuminate a portion of at least one 13 object indicated by data from at least one or more 14 sensors by selecting a first cluster of the LED to 15 meet the first light directed towards the first 16 area, including at least the portion of the" first 17 -- "of at least one object. The first area 18 determined based, at least in part, on the data. 19 The first cluster selected based, at least in 20 part, on known aimings of light associated with 21 the first cluster determined to correspond to the 22 first area and to the first light determined."

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65 1 Q That's good. That's good. 2 So, do you agree, then, that claim 48 3 include -- I'm sorry. Strike that. 4 Do you agree, then, that the data from 5 one or more of the sensors is used in claim 48? 6 A Yes. 7 Q Can you turn to claim 56. 8 A You said 56? 9 Q Yes. 10 A Okay. I'm here now. 11 Q Can you tell me if claim 56 includes 12 sensors? 13 A Claim 56 states "one or more sensors, 14 including one or more cameras placed on the 15 structure for detecting coordinate-specific 16 information about the illuminated area and the 17 position to capture an image of at least one -- at 18 least one other vehicle ahead of the motor 19 vehicle, at least one of said camera is 20 communication -- in communication with the power 21 and in communication with at least one of the one 22 or more processors."	67 1 including one or more cameras placed on the 2 structure for detecting coordinate-specific 3 information about the illuminated area and the 4 position to capture the image of another vehicle, 5 at least one of the said cameras in communication 6 with power and in communication with at least one 7 of the one or more processors." 8 Q So would you agree that claim 64 uses 9 sensors? 10 MR. SOULE: Objection. Form. 11 A Yes. 12 Q Can you read the phrase "select a first 13 cluster of the LEDs having"? 14 A "Select a first cluster of LEDs having 15 light associated there that is directed towards 16 the other vehicle, based, at least in part, on 17 first data from one or more of the sensors, 18 including, first, a position associated with 19 another vehicle." 20 Q Do you agree, then, that the data from 21 one or more of the sensors is used in claim 64? 22 MR. SOULE: Objection to form.
66 1 Q So, you agree that claim 56 includes 2 sensors? 3 A Yes. 4 Q Do you agree that claim 56 uses data 5 from the one or more sensors? 6 MR. SOULE: Objection. Form. 7 A Can you repeat your question? 8 Q Now please read the phrase beginning 9 with "Determined based on data from." 10 A "Determined based on data from one or 11 more of the sensors, a vertical and horizontal 12 position associated with at least one other 13 vehicle." 14 Q So, do you agree that claim 56 uses 15 data from one or more of the sensors? 16 A Yes. 17 MR. SOULE: Objection to form. 18 A Yes. 19 Q Please turn to claim 64. 20 A Yes. 21 Q Does claim 64 include sensors? 22 A Claim 64 states "one or more sensors,	68 1 A Yes. 2 Q If you can turn to claim 72. 3 A Yes. I'm here. 4 Q Do you agree that claim 60 -- I'm 5 sorry, 72, includes sensors? 6 A Claim 72 says "one or more sensors, 7 including one or more cameras placed in a 8 structure." 9 Yes, it includes sensors. 10 Q Can you read the phrase that begins 11 "Determine a target based on," on claim 60 -- I'm 12 sorry, claim 72? 13 A "Determine a target based on first data 14 from one or more sensors." 15 Continue? 16 Q No, you can start -- you can stop 17 there. 18 Do you agree that in claim 72 data from 19 the first sensors is used? 20 MR. SOULE: Objection. Form. 21 A Yes. 22 Q And if you can turn to claim 80.

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69 1 A Yes. 2 Q Does claim 80 include sensors? 3 A Claim 80 states "one or more sensors 4 including one or more cameras placed in the 5 structure," yes, includes – it includes sensors. 6 Q And can you read the section of 7 claim 80 that begins with "Identified, based on 8 data received"? 9 A "Identified, based on data received 10 from one or more of the 30 sensors," is that 11 more – what does it say in the original? 12 "More of the sensors in the positions 13 associated with the target as the target move 14 relative to the motor vehicle." 15 Q I'm sorry, could you go back and 16 read -- I think you may have mistakenly included a 17 line number. So if you could read the claims and 18 the section that begins "Identified, based on data 19 received."? 20 A "Identified, based on data received 21 from one or more of the sensors' plurality of 22 positions associated with the target as the target	71 1 Q 44. 2 A I'm here. 3 Q Do you see the last sentence of 4 paragraph 44? Can you please read that? 5 A "A POSA may work as part of a team, for 6 example, with computer engineers, to integrate, 7 program, et cetera, controllers, and various of 8 control input to effect control of given light 9 source." 10 Q Is it relevant, then, for a POSA to 11 have knowledge of sensing, sensors, and sensor 12 controls for purposes of the '551 patent? 13 MR. SOULE: Objection. Form. 14 A What I stated here is the computer 15 engineering experience with the various of control 16 inputs to effect a control of given light source. 17 Q Does the second paragraph of your -- of 18 paragraph 44 -- I'm sorry, strike that. 19 Does the second sentence of paragraph 20 44 require a POSA to have knowledge of sensing? 21 MR. SOULE: Objection to form. 22 A Paragraph 44, in my declaration,
70 1 moves relative to the motor vehicles -- motor 2 vehicle." 3 Q Okay. And do you agree that claim 80 4 uses data from the sensors, period? 5 MR. SOULE: Objection. Form. 6 A Yes. 7 Q Do you agree that claim 80 uses data 8 from the sensors to control the light source? 9 MR. SOULE: Objection. Form. 10 A The claim 80 language is "In 11 communication with LED controlling power at 12 electrical circuit apparatus. Said controller ran 13 through the processing information communicated 14 with the camera to the -- to automatically control 15 the light provided to the illuminated area." 16 Q Can you turn back to 44 of your 17 declaration, Exhibit 1003. 18 A That would be the section 318, right? 19 Q No, I'm sorry, 315. 20 A 315. 21 Can you tell me the paragraph number 22 again?	72 1 stated, in the last part -- the last sentence is 2 "may work as a part of a team with a computer 3 engineer with the various control inputs to effect 4 the control of a given light source." 5 Q So, based on the review that we just 6 had of the various claims of the '551 patent, is 7 it relevant for a POSA to have knowledge of 8 sensors and sensor controls as part of their 9 understanding of the technology of the '551 10 patent? 11 MR. SOULE: Objection. Form. Vague. 12 A I stated in my declaration, as 13 specifically mentioned, lighting control system, 14 various control input to effect the control for 15 the given light sources. These are the POSA 16 experience and knowledge that I put in my 17 declaration. 18 Q So, a POSA doesn't need to have 19 knowledge of lighting control systems sensors to 20 understand the technology of the '551 patent? 21 MR. SOULE: Objection. Form. 22 Objection. Mischaracterizes witness testimony.

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73 1 Not sure if there's a question there. 2 A Did you say does or does not, your 3 question? 4 Q My question was, actually, does. 5 A My response would be -- 6 MR. SOULE: Sorry. Objection. Form. 7 Q Why don't I give you a clean question 8 because the record is a little sort of convoluted 9 right now. 10 So the question before you is, would 11 the relevant POSA have, according to your standard 12 stated in paragraph 44, have direct knowledge of 13 lighting control systems and sensors to be able to 14 understand the knowledge of the '551 patent? 15 MR. SOULE: Objection. Form. Compound 16 question. 17 A The POSA should have automotive 18 lighting, lighting control, including -- may 19 include various of control input to effect the 20 light control of given light source, that kind of 21 knowledge and experience. 22 Q So it's optional, then, if they have	75 1 used the word "control input." 2 Q What does control input mean to you? 3 MR. SOULE: Objection. Form. 4 A It's input to effect the 5 controlled-given light source. 6 Q And can that -- can sensor input 7 satisfy the inputs to effect the control-given 8 light source? 9 MR. SOULE: Objection to form. 10 A I stated that there is control input. 11 Q I understand. 12 Is input from sensor the control inputs 13 that you refer to in your declaration, paragraph 14 44? 15 MR. SOULE: Objection to form. 16 Compound question. Incomplete hypothetical. 17 A The POSA should have a lighting control 18 experience. POSA may have experience working with 19 computer engineer for programming, et cetera, and 20 controllers, and the various control input. 21 Q Why do you -- why does the POSA rely on 22 a team to provide information about the inputs to
74 1 experience related to sensors and sensor control? 2 MR. SOULE: Objection. Form. 3 Mischaracterizes witness' testimony. 4 A I said the POSA may work as part of a 5 team with, for example, with computer engineer. I 6 also said, for the various control inputs to 7 effect the control of given light source. 8 Q I'm asking you if the POSA, themselves, 9 would need to have knowledge of sensors and how 10 sensors are controlled to be able to control light 11 source, in reference to the '551 patent? 12 MR. SOULE: Objection. Form. Asked 13 and answered. 14 A I'll answer it again. The POSA should 15 have automotive lighting, lighting control 16 experience and knowledge. And the POSA may have 17 work experience in the areas of control input to 18 effect the control of given light sources. 19 Q In reference to your last response, 20 does the control input include sensors? 21 MR. SOULE: Objection. Form. 22 A I stated in the POSA description, I	76 1 effect the controls from other light source? Why 2 is that not relevant knowledge for the POSA to 3 have directly? 4 MR. SOULE: Objection. Form. Compound 5 question. Confusing. Incomplete hypothetical. 6 And mischaracterizes witness' testimony. 7 A I did not use the word "rely." I 8 stated POSA may work as part of the team. And 9 also stated the team work with a team of computer 10 engineer. I also stated to integrate, program, et 11 cetera, controllers and various control inputs. 12 Q Is it relevant for a POSA to have 13 knowledge of the impact of -- strike that. 14 Did you write the standard that is set 15 forth in paragraph 44? 16 MR. SOULE: Objection. Form. 17 A I wrote the declarations with the -- a 18 team of the counsel, and we established the 19 underlying strategy and first draft and came from 20 the -- my counsel, the legal team, I put as some 21 part of my introductory information, other parts, 22 we worked together to come up with these,

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77 1 including 44, as I worked with the legal team to 2 provide this written description of POSA. 3 Q Do you recall when you reviewed the 4 independent claims of the '551 patent that you 5 testified that each of those claims uses data from 6 the sensors to control the light source? 7 MR. SOULE: Objection. Form. 8 Objection. Mischaracterizes his testimony. 9 A Was your question do I recall? Can you 10 say the first part again? 11 Q Do you recall going through the 12 independent claims of the '551 patent just now? 13 A Yes. We just went through a few. 14 Q Do you recall you reading each of the 15 independent claims and testifying that each of the 16 individual claims include both sensors and the use 17 of data from the sensors? 18 MR. SOULE: Objection. Form. 19 Objection. Mischaracterizes the witness' 20 testimony. 21 A I read these independent claims, and 22 these claims include sensors, these claims include	79 1 in claim 80 says "Identify, based on data received 2 from one or more of the sensors, and a plurality 3 of positions associated with the target as the 4 target move relative to the moved vehicle." 5 I was quoting the claim element from 6 claim 80. 7 Q I understand. Sorry, hold on one 8 second. 9 Could a POSA, without knowledge of 10 sensing, and sensor technology, understand the 11 claims of the '551 patent? 12 MR. SOULE: Objection. Form. 13 Objection. Calls for speculation. Incomplete 14 hypothetical. 15 A I'm sorry. You are reading my 16 statement or you're asking me a question? 17 Q I'm asking a question. 18 A Would you mind asking that question 19 again? 20 Q Could a POSA, without knowledge of 21 sensing and sensor technology, understand the 22 claims of the '551 patent?
78 1 the use of sensor to control light sources. 2 Q Do you recall testifying that each of 3 the independent claims uses data from the sensors 4 as part of its control inputs? 5 MR. SOULE: Objection. Form. 6 Objection. Mischaracterizes witness' testimony. 7 A I recall that I read these independent 8 claims, that claim element describes the data 9 input. I can read it back again. I can recall. 10 I read it, and if you want it to be read again, I 11 can do so. That's precisely what I provided is 12 the claim elements. 13 Q So, let me refresh your recollection 14 with respect to claim 80, which was the last one 15 that we reviewed. 16 You stated, when I asked the question, 17 do you agree that claim 80 uses data from the 18 sensors? Your answer to that question was, "yes." 19 Is that still your answer? 20 MR. SOULE: Objection to form. 21 Objection. Mischaracterizes witness' testimony. 22 A What I responded is the claim elements	80 MR. SOULE: Objection. Form. Calls 2 for speculation. Incomplete hypothetical. 3 Compound question. 4 And, sorry, I'm reading the realtime. 5 That last objection, previous to this series, says 6 calls for a legal conclusion. I believe it's 7 calls for speculation. 8 A My response to that question is that a 9 POSA, described in my declarations, should have 10 knowledge and experience in lighting control. 11 Q So, based on the second sentence of 12 your paragraph 44 -- strike that. 13 Based on paragraph 44 of your 14 declaration, as you've testified, the POSA must 15 have lighting control knowledge and experience -- 16 MR. SOULE: Objection. 17 Q -- is that correct? 18 MR. SOULE: Objection. Form. Compound 19 question. Mischaracterizes witness' testimony. 20 A What I said in my declaration is a POSA 21 would have the education and the experience and 22 that experience is -- including is an area --

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81 1 industry experience in an area of automotive and 2 lighting control systems. 3 Q And would that knowledge and experience 4 include understanding camera sensing? 5 MR. SOULE: Objection. Form. 6 Objection. Asked and answered. 7 A That experience may include working 8 with a team of computer engineers for the 9 integration – integrating, providing controllers 10 with the various control input to effect the 11 control of given light source. 12 Q So, why's the team necessary -- why is 13 the team experience necessary, in paragraph 44? 14 MR. SOULE: Objection. Form. 15 Objection. Vague. Mischaracterizes witness' 16 testimony. 17 A I said in paragraph 44, a POSA would 18 have a list of education and experience. I also 19 said in my paragraph 44, a POSA may work with a 20 team of computer engineers. 21 Q So, because you chose to use the word 22 "may" include working with a team of computer	83 1 "lighting control systems"? 2 MR. SOULE: Objection. Form. Asked 3 and answered. 4 A I stated in my declaration, this is 5 POSA's experience, industry experience in 6 automotive lighting and lighting control systems. 7 Q Didn't you state that you are a POSA? 8 MR. SOULE: Objection. Form. 9 Objection. Vague. Objection. Mischaracterizes 10 witness' testimony. 11 A I stated in my declaration, I am a 12 POSA. 13 Q So, as a POSA, and in reference to 14 paragraph 44, does the industry experience, 15 referenced by "lighting control systems," include 16 sensor, experience with sensors? 17 MR. SOULE: Objection. Form. 18 A My POSA experience is listed in 19 paragraph 44. A POSA's experience is industry 20 experience in the area of automotive lighting and 21 lighting control systems. 22 Q Do you know what the term "lighting
82 1 engineers, the POSA doesn't need to have 2 experience associated with control inputs? 3 MR. SOULE: Objection. Form. 4 Objection. Mischaracterizes witness' testimony. 5 A What I said is, the POSA would have an 6 experience in automotive and lighting control 7 systems. 8 Q Does the experience of lighting control 9 systems include experience with cameras? 10 MR. SOULE: Objection. Form. 11 Objection. Scope. 12 A I state the POSA possessed – would 13 have had experience and education, in my 14 declarations. 15 Q What did you mean by the term "lighting 16 control systems"? 17 MR. SOULE: Objection. Form. 18 Objection. Asked and answered. 19 A It's a lighting control system that 20 POSA would know. 21 Q Can you describe for me the level of 22 knowledge associated with someone who understands	84 1 control systems" means? 2 MR. SOULE: Objection. Form. 3 A A POSA, myself, understands the 4 experience of automotive lighting and lighting 5 control system. 6 Q And is a camera an example of a 7 lighting control system? 8 MR. SOULE: Objection. Form. 9 A The lighting control system in 10 automotive lighting and (indiscernible) lighting 11 is industry experience. The experience, I don't 12 need to give an example, as a POSA, these 13 experience, as listed in my declaration. 14 Q So, you can't answer for me whether a 15 camera is an example of a lighting control system? 16 MR. SOULE: Objection. Form. 17 Objection. Mischaracterizes witness' testimony. 18 Asked and answered. 19 A I'll say it again. In my description 20 of a POSA, is in 44, paragraph 44, is working 21 experience in automotive lighting and lighting 22 control systems.

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85 1 Q And I'm asking you whether, based on 2 both your understanding of a POSA, coupled with 3 what's written in paragraph 44, whether a camera 4 is an example of a lighting control system? 5 MR. SOULE: Objection. Asked and 6 answered. Objection. Form. 7 A My answer is, the lighting control 8 system is described awhile in my declaration, and 9 a POSA would know. 10 Q Please point to me where you describe 11 what a lighting control system is in your 12 declaration? 13 MR. SOULE: Objection. Form. 14 A I stated the lighting control system 15 and, also, stated industry experience in my 16 declaration. 17 Q I understand. 18 I'm asking you, what does that mean to 19 you? You signed this declaration. I'm asking you 20 to articulate whether a camera is an example of a 21 lighting control system? 22 MR. SOULE: Objection. Form --	87 1 opinion that a POSA listed -- information listed, 2 description listed in my paragraph 44. And it 3 should be able to review and assess and come up 4 with an opinion for '551 patent claims. 5 Q Does a camera provide input? 6 MR. SOULE: Objection. Form. Vague. 7 A That is a generic question. I can't -- 8 my declaration -- 9 Q The last question, the last answer you 10 provided on this topic, you stated, "Again, 11 lighting control system is known for a POSA, is on 12 to providing control using input, control the 13 light, or light sources." 14 And I'm asking you, in reference to 15 that answer, does the camera provide inputs? 16 MR. SOULE: Objection. Form. Vague. 17 A This example is so -- it can -- or may 18 or may not. I mean, a camera is a camera. 19 Q In reference to the fact that on 20 claims, is the camera connected to the lighting 21 system? 22 MR. SOULE: Objection. Form. Vague.
86 1 Q It's a really simple question. 2 MR. SOULE: Objection. Form. Compound 3 question. Asked and answered. 4 A Again, a lighting control system is 5 known for a POSA, is to providing control using 6 input, control the light or light sources. 7 Q Is the scope of the claims while 8 determining the POSA standard? 9 MR. SOULE: Objection. Form. 10 A Are you asking me legal question or 11 technical question? 12 Q I'm asking -- you have a -- there's a 13 POSA standard in your declaration, and I'm trying 14 to understand what you reviewed in formulating the 15 standard. Specifically, whether you reviewed the 16 claims to determine the POSA standard? 17 MR. SOULE: Objection. Form. 18 Objection. Calls for a legal conclusion. 19 A I reviewed '551 patent descriptions. I 20 reviewed the claims in '551 patent. 21 In reviewing -- based on the review of 22 this patent, or you said a scope, and it is my	88 1 A The camera in these claims are 2 sensing, such as camera detecting the 3 information, and such information is in 4 communication with the controller. 5 Q So, you agree, then, that in these 6 claims, the camera and sensor information from the 7 camera is used as part of the controls? 8 MR. SOULE: Objection. Form. Compound 9 question. Mischaracterizes the witness' 10 testimony. 11 A I read the claim elements. I can read 12 again. Is sensing, collecting information -- 13 sensing collects information, including camera, 14 communicated with processors. And the controller 15 processor determines, based on the data control, 16 the light sources. That's what the claim says. I 17 can read it again, if you want me, to clarify. 18 Q So, based on the claims, is it relevant 19 for a POSA to understand the sensor inputs? 20 MR. SOULE: Objection. Form. Vague. 21 A Based on the claim, a POSA with 22 automotive lighting and lighting control system

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89 1 would understand. 2 Q What aspect of the POSA experience 3 would help them understand the use of a sensor 4 data? 5 MR. SOULE: Objection. Form. Vague. 6 Calls for speculation. Incomplete hypothetical. 7 A If you work in an industry, a field, 8 automotive lighting or lighting control, for 9 two years or more, you would understand the claims 10 in '551 patent. 11 Q Why do you reference the POSA's ability 12 to potentially work with a team, in the second 13 sentence of paragraph 44? 14 MR. SOULE: Objection. Form. 15 A Again, what I said is the POSA may work 16 as part of a team or with other computer 17 engineers. And for the controller or control 18 field for various input, control input, for the 19 control of given light sources. 20 Q So going back to the first sentence of 21 paragraph 44, what industry experience is relevant 22 to understanding the use of sensor data?	91 1 Objection. Incomplete hypothetical. Calls for 2 speculation. 3 A The automotive lighting, the lighting 4 control system is controlled. The automotive 5 lamps used is control systems that related to 6 automotive lighting. 7 Q So you can't think of an example of a 8 control system involving a sensor? 9 MR. SOULE: Objection. Form. 10 Objection. Mischaracterizes witness' testimony. 11 A It is my opinion that POSA would have 12 understood the '551 patent and the claims with 13 education and experience, as listed in my 14 declarations. 15 Q But you can't identify an example of a 16 lighting control system, including a sensor, that 17 POSA would have worked with? 18 MR. SOULE: Objection. Form. 19 Objection. Mischaracterizes witness' testimony. 20 Asked and answered. 21 A I have identified with 55 -- the 22 context of '551 patent and the claims, a POSA
90 1 MR. SOULE: Objection. Form. 2 Objection. Asked and answered. 3 A First, the sentence stating "The POSA 4 in the context of '551 patent, at this particular 5 time frame, would have at least two years of 6 industry experience in the area of automotive 7 lighting and lighting control systems." 8 Q So it's your testimony that the 9 bachelor's degree and at least two years of 10 industry experience in the area of automotive 11 lighting and lighting control systems would have 12 provided the POSA with sufficient knowledge to 13 understand the technology and claims of the '551 14 patent? 15 MR. SOULE: Objection. Form. 16 A It is my opinion, listed in my 17 paragraph 44 of my declaration, would have 18 understood '551 patent and patent claims. 19 Q Can you provide an example of the 20 lighting control system, including a sensor, that 21 a POSA would have worked with? 22 MR. SOULE: Objection. Form.	92 1 would have the education and industry experiences 2 listed in my declarations. 3 Q So, given the knowledge that you have 4 explained from your characterization of yourself 5 as a POSA, back in July 2002, can you provide one 6 example of a lighting control system that involves 7 a camera that a POSA would have used on or before 8 July 2002? 9 MR. SOULE: Objection. Form. Compound 10 question. 11 A As a POSA, I understand the claim 12 disclosed in '551 patent. As a POSA, I have 13 automotive lighting and lighting control system 14 experience; understood what patent, '551 patent, 15 the descriptions, as well as the claims. 16 Q Can you provide one example of a 17 lighting control system that involves use of a 18 camera that a POSA would have used in -- on or 19 before July 2002? 20 MR. SOULE: Objection. Form. 21 A I provided several reference prior arts 22 that include all the claim elements in '551

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93 1 patent. These are examples, many examples. 2 MR. SOULE: I think we've been back on 3 an hour and a half, on the record, Sangeeta. 4 Q Can you pull the Beam patent, please. 5 A Yes. Here. 6 Q Can you turn to column 5 and read the 7 sentence that begins with -- column 5, line 3, the 8 sentence that begins with "Figure 4 depicts." 9 A "Figure 4 depicts a system similar to 10 that of Figure 2, except that lamp 202 and special 11 light modular 203 are replaced by an array of 12 light sources for one, which are individually 13 controlled. This array could be implemented in 14 number of ways. It could be an addressable matrix 15 of lasers, it could be an array of incandescent 16 filament, or it could be some other similar 17 arrangements, meters." Array from the -- I'm 18 sorry, "The array from the scene comes through the 19 optical systems. Some of the arrays are reflected 20 by a beam splitter 201 to a sensor 107. They are 21 imaged by the sensor and are converted to view or 22 other electrical systems the output drives the	95 1 element and optical-control elements in order to 2 be directionally controllable. 3 Specifically, I think in abstract, they 4 talk about angular positions. So that's how I 5 read. 6 The replacement is combining the two so 7 that you still maintain the directionality, which 8 is described in abstract, as well as in the 9 claims. 10 Q So to clarify, your interpretation of 11 the phrase "replaced by," in the Beam reference, 12 is a combination of the LED array and the spatial 13 light modulator? 14 MR. SOULE: Objection. Form. 15 Objection. Mischaracterizes witness' testimony. 16 A What I said, in the context of Beam 17 disclosure, which is, essentially, an individually 18 or group controlled the microbeam sources are 19 microbeams that consist of light-emitting element 20 and optical element, in order to be able to 21 control both intensity and angular distributions 22 or directions.
94 1 controlling when" -- 2 Q That's good. That's good. I just 3 needed you to read the one sentence. 4 A Oh. 5 Q If you could read the one sentence that 6 begins "Figure 4 depicts," please, column 5? 7 MR. SOULE: Objection. Asked and 8 answered. 9 A "Figure 4 depicts a system similar to 10 that of Figure 2 except that lamp 202 and special 11 light modulator 203 are replaced by an array of 12 light source 401, which are individually 13 controlled." 14 Q Thank you. 15 In that sentence, how do you interpret 16 the term "replaced by"? 17 MR. SOULE: Objection to form. 18 A I interpreted the description by 19 reading the entire patent, including the claim, is 20 that the Beam disclosed individually or grouply 21 controlled microbeam source or microbeam. A 22 replacement is a combination of a light-emitting	96 1 Because this is the patent disclosed. 2 There is a Figure 1 shows the separate 3 light-emitting elements and spatial light 4 modulator. 5 Another figure, it shows this is the 6 device or components or elements that provide the 7 same function of individually controlled 8 microbeams, beam sources, to have directionality, 9 it means angular distribution, and the intensity 10 control of every single element -- every single 11 microbeam. 12 Q And the Beam reference is a spatial 13 light modulator, part of the microbeam? 14 MR. SOULE: Objection. Form. 15 A Microbeam, or microbeam source is a 16 combination of light-emitting elements and spatial 17 light modulator. 18 Q Is there a difference between microbeam 19 and microbeam source? 20 MR. SOULE: Objection. Form. 21 A Microbeam and microbeam source, a POSA 22 would understand, is commonly referred to a type

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97 1 of a hardware that is a produced type of light 2 output. You can alternatively say that microbeam 3 source is the hardware portion, beam plus 4 modulator. Microbeam is result of microbeam 5 source that produced these individually controlled 6 directional narrow-angle beams. So conceptually, 7 these are two things you can describe; either one 8 is hardware, another one's result of hardware, or 9 you can alternatively say that's the same thing. 10 Q So, to clarify, a POSA would understand 11 that a microbeam is the same as a microbeam 12 source? 13 MR. SOULE: Objection. Form. 14 Mischaracterizes witness' testimony. 15 A A POSA would understand the microbeam 16 source is referring to the source of the light 17 beam being produced as microbeam, perhaps, is more 18 like hardware. 19 The microbeam is, like, the result 20 microbeam source. 21 Q If you go to Figure 4 of the Beam 22 patent.	99 1 purposes of Figure 4 of the Beam patent? 2 MR. SOULE: Objection. Form. 3 Objection. Asked and answered. 4 A The POSA would understand that Beam 5 disclosed microbeam source to produce microbeam 6 using light-emitting devices, LED as example, and 7 modulator devices, many examples. Therefore, 8 these figures are supporting the Beam's 9 description and the claim stating that these 10 microbeams are produced by microbeam sources that 11 consist and compresses light-emitting elements, 12 such as LED, and spatial optical element, such as 13 spatial light modulator, with a list of examples. 14 So, POSA would understand this 15 reference is talking about a microbeam. 16 In order to form the microbeam source 17 or microbeam, you have emitting elements, you have 18 optical elements. Regardless what a figure, 19 throughout the entire disclosure or patent, this 20 is what this reference is about. 21 Q In the Beam patent, would there be a 22 situation where the emitter would ever take the
98 1 A Yes. 2 Q After the array is replaced, which 3 elements would remain? 4 MR. SOULE: Objection. Form. 5 Q Between elements 401, 202, and 203? 6 MR. SOULE: Objection. Form. 7 Objection. Incomplete hypothetical. Objection. 8 Calls for speculation. 9 A 202 is emitting element. 203 is 10 optical element, modulating element modulator. 11 And 401 is -- replaces two to become one. 12 You don't delete anything, you need it. 13 To form microbeam, you need a microbeam source. 14 And the entire disclosure is centered 15 for microbeam source to produce microbeam that is 16 individually controllably and is individually 17 aimable, directional. 18 So you don't -- the emitter has to be 19 there, the optical element has to be there. 20 Q So the spatial light modulator has to 21 be -- a POSA would read the spatial light 22 modulator to be present with the LED array for the	100 1 place of the optical element? 2 MR. SOULE: Objection. Form. 3 Objection. Calls for speculation. Incomplete 4 hypothetical. 5 A A POSA would have understood the 6 emitter element, without optical elements, cannot 7 be directional. Cannot be narrow angle. Cannot 8 have particular angular position described in the 9 patent, such as abstract, and a POSA would 10 understand microbeam, or beam source. In order to 11 produce microbeam, a microbeam source must have an 12 emitter, emitting element, and optical element, 13 spatial light modulator. 14 (VWGoA Exhibit 1003 previously marked 15 for identification and retained by counsel.) 16 Q Can you turn to the 318 petition in 17 your declaration, 1003, that petition, please. 18 A Yes, I'm here. 19 MR. SOULE: Sangeeta, we're at an hour 20 45. We're coming up on lunchtime too. So I don't 21 know how long you plan on going still. Would now 22 be a good time for lunch?

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101 1 MS. SHAH: Yeah. We can take -- would 2 it be okay if we took a shorter lunch break 3 because I may have an opportunity to kind of wrap 4 this up earlier. If we take a shorter lunch 5 break, we may also get the benefit of more time 6 this afternoon. So does a half hour work? 7 MR. SOULE: Half hour, okay. 8 THE WITNESS: For me, okay. 9 MR. SOULE: Sounds good. 10 MS. SHAH: Okay. All right. So we'll 11 circle back at 1:00 then, or a little bit after 1. 12 MR. SOULE: Great. 13 THE WITNESS: Thank you. 14 MS. SHAH: Great. 15 (Recess taken from 12:32 p.m. to 16 1:08 p.m.) 17 BY MS. SHAH: 18 Q Can you turn to, what's the Exhibit 19 1003, of the 318 IPR. Oh, I'm sorry, wait one 20 quick second. 21 Sorry, Exhibit 1052, of 315. 22 (VWGoA Exhibit 1052 previously marked	103 1 regarding Karlsson's teaching? I can go there to 2 take a look. 3 Q Yes. 4 A In my exhibit, I'm going to read it. 5 Page 75, I have a section that is describing -- 6 stating that Karlsson sensor 23 is a camera, as 7 claimed, in '551 patent. 8 MR. SOULE: So this is 318. 9 THE WITNESS: Okay. 10 MR. SOULE: You're talking about 315 or 11 318? 12 MS. SHAH: I'm sorry. I couldn't hear 13 the question. 14 MR. SOULE: Are you talking about IPR 15 318 or 315? 16 MS. SHAH: 315. 17 MR. SOULE: This is 318. 18 MS. SHAH: She gave me this 19 exhibit number. 20 MR. SOULE: The exhibit numbers are the 21 same. 22 MS. SHAH: It's Exhibit 1052, if that
102 1 for identification and retained by counsel.) 2 A Okay. 3 Q Do you understand how Karlsson detects 4 light, Dr. Jiao? 5 MR. SOULE: Objection to form. 6 A Is your question relating to this 7 declaration, Exhibit 1052? 8 (VWGoA Exhibit 1052 previously marked 9 for identification and retained by counsel.) 10 Q Uh-huh. I'm asking about the Karlsson 11 reference, which you opined about in 1052. 12 A Can you point to me the reference list 13 that you are questioning me? 14 Q Can you provide an example of how 15 Karlsson detects light? 16 MR. SOULE: Objection. Form. 17 A I don't get the question. How Karlsson 18 detect the light, is that what -- 19 Q Yes. 20 A Okay. In this particular exhibit, my 21 second declaration, I provided my declaration in 22 Section 8. Is this what you're referring to	104 1 helps. That's probably easier. 2 Well, it has the same exhibit number in 3 both. 4 THE WITNESS: Give me a moment. I've 5 got it. 6 Q If you could look at paragraph 148 of 7 the 315 IPR. 8 A Paragraph 45 -- 48 or 45? One more 9 time. 10 Q 148. 11 A 148. 12 I stated there's no dispute that 13 Karlsson's sensor 23 is a camera, as claimed. 14 Paragraph 148, right? Above that, I have a 15 section titled A. Am I on the right page? 16 Q So, if you could look at paragraphs 148 17 and 149, that's page -- they're both on page 85 of 18 Exhibit 1052. 19 A Yes. I have located. 20 Q So, in reference to those paragraphs, 21 can you answer the question of whether Karlsson 22 detects light?

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105 1 MR. SOULE: Objection. Form. 2 Objection. Vague. 3 A Well, in these two paragraphs, and I 4 summarize as titles A, camera sensor – I'm sorry, 5 Karlsson's sensor 23 is a camera that disclosed 6 the claim in '551 patent. 7 Q Can you describe how Karlsson detects 8 light using the camera? 9 MR. SOULE: Objection. Form. 10 A In my paragraph 149, I mention it, as 11 stated in my first declaration, I agree that light 12 sensitive sensor 23 is a camera. It's light 13 sensitive sensor. 14 Q Does Karlsson sense light? 15 MR. SOULE: Objection. Form. Vague. 16 A I stated light – sensitive sensor is a 17 camera, is light-sensitive sensor. 18 Q Does Karlsson use the data from 19 light-sensitive sensor 23? 20 MR. SOULE: Objection. Form. 21 A I state it in my declaration. I can go 22 through my declaration to point out to where I	107 1 paragraph, that's Exhibit 1003, that in paragraph 2 302. I can go there to provide you with more 3 detail. 4 What I stated at Karlsson's reference 5 is, protecting traffic from glare, and I stated, 6 in my first declaration, Karlsson uses automatic 7 function to detect and reduce illumination. 8 That is reference to the Karlsson 9 reference in page 18. I can go there, too, see 10 how Karlsson describes it. 11 Do you want me to? 12 Q Can you look at paragraph 308 of the 13 1003, that exhibit? 14 A Yes, I'm here. 15 MR. SOULE: Objection to form. Is 16 there a question? 17 Q Based on the description in paragraph 18 308, can you tell me how Karlsson's LEDs are 19 controlled? 20 MR. SOULE: Objection. Form. 21 A I stated in 308, "Karlsson's LED are 22 controlled in such a manner that no light at
106 1 state it regarding your question. 2 In my paragraph 152, I stated, for 3 example, I specifically stated, in my first 4 declaration, that Karlsson's control means 14, 5 which include a process, is communicating – is in 6 communication with sensor 23 to receive the 7 control signal. The control signal is received 8 from sensor 23, which is camera. 9 Q What does Karlsson do with the control 10 signal that's received from sensor 23? 11 MR. SOULE: Objection. Form. Vague. 12 A I stated in my declaration, this one in 13 Exhibit 1052, in my paragraph 153, as I explain it 14 in my first declaration, Karlsson's system 15 automatically functions to detect and reduce 16 illuminations, any number of target vehicles, 17 including second vehicle. 18 Q How does Karlsson's system 19 automatically function to reduce illumination? 20 MR. SOULE: Objection. Form. 21 A That was explained in my first 22 declaration. I can go back to that specific	108 1 all – or light have a lower intensity is emitted 2 in those directions from which light is detected," 3 which I quoted from Karlsson, in page 9, and 4 paragraph 18 to 22. 5 I can go back and look. 6 Do you want me to take a look? 7 Q No. If you can just tell me which LEDs 8 would be controlled to cause this light-up? 9 MR. SOULE: Objection. Form. 10 Objection. Vague. Objection. Incomplete 11 hypothetical. 12 A I don't think I understand your 13 question clear. 14 Can you repeat your question? 15 Q You can go ahead and take a look at 16 your original paragraphs, 18 to 21, and then I can 17 ask you a question. 18 A Okay. 19 MR. SOULE: Objection. Form. 20 Sorry, paragraphs 18 to 21? 21 MS. SHAH: 18 to 22. 22 MR. SOULE: Sorry, objection to form.

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109 1 Confusing. Vague. 2 A In Karlsson's reference, where I cited, 3 is such when the light, lighting device 1 is used 4 as a headlight in a car, the pattern and intensity 5 of light beam 7 are, for example, controlled in 6 such a manner that no light at all, or light 7 having a low intensity is emitted in those 8 directions from which light is detected by the 9 light-sensitive sensor 9. 10 MR. SOULE: Sorry, Sangeeta, so the 11 record's clear, can you say what exhibit and what 12 paragraph you were referring to? 13 MS. SHAH: Hold on one second. I 14 believe he's now referencing Exhibit 1003, which 15 is the 315 IPR. 16 MR. SOULE: Yeah, I think I'm looking 17 for what you were referencing in your question. I 18 don't think it's clear on the record. 19 MS. SHAH: Yeah, my questions are also 20 in reference to Exhibit 1003, the 315 IPR. 21 MR. SOULE: And what paragraphs? 22 MS. SHAH: Dr. Jiao was looking at	111 1 So we are now looking at Exhibit 1003 2 of the 315 IPR, and I have an open question 3 pending. 4 MR. SOULE: Sorry, you just said you 5 did not have a question pending. 6 MS. SHAH: I'm sorry? 7 MR. SOULE: You just said -- I asked 8 you, is there a question pending, and you said, 9 "Not at the moment." 10 MS. SHAH: Well, I'm sorry. I think 11 he's been answering this question. The question 12 is -- hold on. I mean, this line of questioning 13 all relates to the same question. I'm not sure if 14 he's done answering it, but the question was, how 15 are the LEDs controlled? 16 MR. SOULE: I think the confusion, 17 still, is that you have referenced paragraphs 18 18 to 22 in your question. 19 MS. SHAH: Okay. Let's start with 20 paragraph 308. That's what I referenced. 21 Dr Jiao, in his answer, talked about paragraph 18 22 to 22. So we can start with paragraph 308.
110 1 paragraphs 18 to 22. 2 MR. SOULE: Sorry. I don't think 3 that's correct. 4 MS. SHAH: Let's see. So he started 5 off looking at paragraph 308. And then he went to 6 look at paragraphs 18 to 22. 7 MR. SOULE: And for the record, what 8 were your questions referring to? 9 MS. SHAH: I sort of asked him in 10 reference to -- well, I, first, asked him to look 11 at paragraph 308. And then I asked him, based on 12 the description in paragraph 308, can you tell me 13 how Karlsson's LEDs are controlled? 14 MR. SOULE: Okay. Is there a question 15 pending? 16 MS. SHAH: Not at the moment. 17 MR. SOULE: Okay. 18 MS. SHAH: Is the record clear from 19 your perspective? 20 MR. SOULE: Not really, no. Sorry. 21 MS. SHAH: Okay. I'm not sure what the 22 issue is.	112 1 MR. SOULE: I'm sorry. That's not 2 correct. Dr. Jiao, I don't believe, referenced 3 paragraphs 18 to 22. 4 MS. SHAH: Okay. Honestly, you tell me 5 where you'd like to go in the declaration because 6 I have an open question, and it's frankly 7 irrelevant where this is in the declaration 8 because it's absolutely permissible for me to be 9 asking questions of that which is in the 10 declaration and getting an answer. Every question 11 I ask does not have to be tethered to the 12 declaration, and I don't need to get an answer 13 read back from the declaration. 14 BY MS. SHAH: 15 Q I'm asking a very specific question of 16 how does Karlsson choose the LEDs? 17 MR. SOULE: Objection. Form. 18 Objection. Vague. Objection. Calls for 19 speculation and incomplete hypothetical. 20 A Should I answer now? 21 Q Yes, please. 22 A As I stated in my declaration,

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113 1 number -- Exhibit-- for 315, Exhibit Number 1003, 2 paragraph 308, I specifically cited Karlsson's 3 disclosure for your question, which is 4 Exhibit 1010, that's Karlsson's disclosure, on 5 page 9, paragraph 18 to 22, which I already read 6 it. 7 (VWGoA Exhibit 1010 previously marked 8 for identification and retained by counsel.) 9 Q So can you answer the question for me? 10 How does Karlsson choose the LEDs that are 11 mentioned in paragraph 308 -- 12 MR. SOULE: Objection. 13 Q -- of your declaration? 14 MR. SOULE: Objection. Form. 15 Objection. Asked and answered. 16 A I said Karlsson's LEDs are 17 automatically controlled in such a manner that no 18 light, at all, or light having a low intensity is 19 emitted in those directions from which light is 20 detected, where I cited Karlsson's disclosure in 21 Exhibit 1010, page 9, paragraph 18 to 22, which 22 says "When lighting device 1 is used as a	115 1 Q Are those headlamps installed in 2 automobiles? 3 MR. SOULE: Objection. Form. 4 Objection. Scope. 5 A In the POSA's description and in the 6 automotive lighting industries, the term 7 "headlamp" or "headlights" are defined as 8 equipment on the vehicle, motor vehicle 9 specifically. 10 Q How does preventing light in the 11 direction of a headlamp prevent glare? 12 MR. SOULE: Objection. Form. 13 Objection. Vague. 14 A Are you referring to a specific 15 discussion in my declaration for your question? 16 Q I'm asking you a question in your 17 capacity as an expert, and in your capacity as 18 someone who understands a POSA. 19 MR. SOULE: Objection. Form. 20 A One example that I cited, and disclosed 21 by Karlsson, which I just read it, is one 22 sensor -- light-sensitive sensor --
114 1 headlight in a car, the pattern and intensity of 2 the light beam 7 are, for example, controlled in 3 such manner that no light, at all, or light having 4 a low intensity is emitted in those directions 5 from which light is detected by light-sensitive 6 sensor 9." 7 Q Okay. So in reference to the sentences 8 that you just read from your declaration, can you 9 explain how Karlsson chooses the LEDs to be 10 controlled "in those directions"? 11 MR. SOULE: Objection. Form. 12 Objection. Compound question. Asked and 13 answered. 14 A Karlsson disclosed light-sensitive 15 sensor 9, which detects the light based on 16 sensor -- sensor 9 detected light and the control 17 is such that it detects the light in such a manner 18 that the light -- no lights, at all, or light 19 having a low intensity is emitted to those 20 directions, from light is detected by sensor 9. 21 Q Have you designed headlamps? 22 A As a POSA? As a POSA, yes.	116 1 light-sensitive sensor 9 detected light. The 2 control is in place in such manner that no light, 3 at all, or light having a low intensity is emitted 4 in those directions where -- in which the light is 5 detected. 6 Q So, in your example, glare is prevented 7 in the direction from which light is detected; is 8 that correct? 9 MR. SOULE: Objection. Form. 10 Objection. Mischaracterizes witness' testimony. 11 Objection. Calls for speculation. 12 A A glare induced by automotive headlamp 13 is reduced by these prior arts, including 14 Karlsson, then to detect other vehicles' lights. 15 And other vehicles, including preceding vehicles' 16 taillights, oncoming vehicles' headlights, when 17 those lights are being detected, and Karlsson says 18 light-sensitive sensor, then these directions, 19 where other vehicle is, that's where the glare 20 light is controlled. 21 Q Is glare associated with glare to a 22 driver?

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117 1 MR. SOULE: Objection. Form. 2 Objection. Vague. Calls for speculation. 3 Incomplete hypothetical. 4 A In the context of '551 patent, as well 5 as the reference or prior arts that I introduced, 6 the word "glare" is associated with the drivers. 7 Q So how does Karlsson address trying to 8 prevent glare related to the driver? 9 MR. SOULE: Objection. Form. 10 A The glare to the drivers, in the 11 context of '551 patent and other references that I 12 introduced, are associated with the automotive 13 headlights, or headlamps, that produce glare to 14 those drivers. 15 Karlsson uses light sensor to detect 16 the lights from other vehicles and control his 17 disclosed lighting system so that there is no 18 lights or reduced lights that is aimed to these 19 directions where other drivers' eyes are located 20 or -- no, yeah, other drivers are looking, other 21 vehicle drivers are looking. 22 Q Does Karlsson detect the driver?	119 1 reduced. 2 Q How does Karlsson determine which LEDs 3 to control for purposes of reducing glare? 4 MR. SOULE: Objection. Form. 5 Objection. Asked and answered. 6 A Karlsson disclosed the headlamp, the 7 light beam, or beam pattern, is produced by 8 spotlight beams, which is many individually 9 controlled directional -- controlled for direction 10 and intensity for the beam pattern -- for the 11 desired beam pattern. 12 When sensor 9 detected vehicle, other 13 vehicle, and Microsoft -- I mean, spotlight beam, 14 these beams that is directed to other vehicle are 15 being dimmed. 16 Q Why do you think the beams directed to 17 other vehicles are dimmed? 18 MR. SOULE: Objection. Form. 19 Objection. Calls for speculation. Incomplete 20 hypothetical. And mischaracterizes witness' 21 testimony. 22 A Can you repeat the question again?
118 1 MR. SOULE: Objection. Form. Vague. 2 Calls for speculation. Incomplete hypothetical. 3 A Karlsson disclosed, using 4 light-sensitive sensor 9, to detect lights from 5 other vehicles. 6 Q Does the driver produce light? 7 MR. SOULE: Objection. Form. 8 A In a context of this '551 patent, as 9 well as the reference, Karlsson's teaching is to 10 detect the lights from other vehicles. 11 Q So if Karlsson is detecting lights from 12 vehicles, how does Karlsson prevent glare to the 13 driver? 14 MR. SOULE: Objection. Form. Compound 15 question. Vague. Asked and answered. 16 A When the light from other vehicles is 17 detected by the light-sensitive sensor 9, 18 Karlsson's spotlight beams, for any light that is 19 aimed or directed to other vehicle, will be dimmed 20 so that no light, at all, or light having a low 21 intensity is emitted, says in Karlsson, in those 22 directions. That's how the glare was prevented or	120 1 Q Why do you think the beams directed to 2 the other vehicle are dimmed -- 3 MR. SOULE: Objection. Form. 4 Q -- as stated in your last answer? 5 MR. SOULE: Objection. Form. 6 Objection. Calls for speculation. Incomplete 7 hypothetical. And mischaracterizes witness' 8 testimony. 9 A Karlsson disclosed his lighting -- the 10 lighting system disclosed by Karlsson is comprised 11 with spotlight beams that forms a desired beam 12 pattern, that include a high beam, where the 13 sensor 9 detect the lights from other vehicle, 14 which means there's other vehicle or vehicles 15 present. These directions of other vehicle are 16 the sections or subsections that drivers could 17 be -- drivers are present. That's how these 18 subsections, area beams, headlamp beams is being 19 reduced to prevent glare. 20 (VWGoA Exhibit 1013 previously marked 21 for identification and retained by counsel.) 22 Q Can you turn to the Nakamura reference,

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121 1 which is Exhibit 1013 and both IPRs. 2 A Okay. I got it. 3 Q How does Nakamura control light? 4 MR. SOULE: Objection. Form. 5 Objection. Vague. 6 A Nakamura disclosed the light 7 projections is controlled through controller of -- 8 in Figure 7 of the schematic, how the controller 9 is working to control the headlights. 10 Q Can you read paragraph 45, please? 11 MR. SOULE: Objection. Form. 12 A Here, the area near boundary between 13 light and dark, as a result of vertical light 14 distribution of the headlamp, the outline 15 position, corresponding to the light range. So it 16 is possible to move the vertical light 17 distribution of the vehicle -- of the headlights 18 to -- corresponding to the vehicular gap with 19 other vehicles having a smaller vehicular gap, as 20 determined above. It should be possible to 21 illuminate the front of a vehicle with light that 22 does not expose other vehicles to glare.	123 1 between dark and bright in the vertical sense, in 2 Figure 5. If you go to the Figure 5, you will see 3 there is -- the boundary is named "cutoff." And 4 this particular cutoff is a Japanese beam pattern, 5 similar to European beam pattern. And you can 6 see, from Figure 5, if there is oncoming drivers 7 being detected, then the cutoff can be moved 8 vertically to create a gap so that glare -- 9 oncoming vehicles glare will be provided. 10 Q Does moving the cutoff vertically 11 involve moving the cutoff downward, toward the 12 bumper or fender? 13 MR. SOULE: Objection. Form. Vague. 14 Calls for speculation. Incomplete hypothetical. 15 A A POSA would understand, in almost all 16 regulatory requirements, you cannot vertically aim 17 your headlamps to a bumper. So vertical motion 18 disclosed by Nakamura is where you can create a 19 vertical change where you create the portion that 20 lights, that hit other driver's eye, being 21 prevented. 22 Q How does Nakamura determine the
122 1 Q How does Nakamura prevent glare in 2 paragraph 45? 3 MR. SOULE: Objection. Form. 4 A Nakamura disclosed the near -- the 5 boundary between light and dark of vertical light 6 distribution and the disclosure is to remove the 7 vertical light distribution of the headlights to 8 create a gap to prevent glare. 9 Q Would an example of that be aiming the 10 light towards the fender or bumper of the vehicle? 11 MR. SOULE: Objection. Form. 12 Objection. Vague. Calls for speculation. 13 Incomplete hypothetical. 14 A Nakamura didn't disclose to aim lights 15 toward a bumper. 16 Q Can you give an example of how Nakamura 17 discloses creating a boundary between light and 18 dark of vertical distribution? 19 MR. SOULE: Objection. Form. Vague. 20 A A POSA would understand the headlamp 21 beam pattern in Nakamura's disclosure is typical 22 Japanese beam pattern, where there is a boundary	124 1 location of the other driver's eye? 2 MR. SOULE: Objection. Form. Vague. 3 Calls for speculation. Incomplete hypothetical. 4 A I think I list in my declaration, I can 5 go back to my first or second declaration, which 6 provides detailed explanation, how Nakamura 7 references use. 8 Do you want me to take a look? 9 Q No, that's okay. I trust you're going 10 to read something from your declaration, so, 11 that's fine. 12 MS. SHAH: Can you give me just a 13 couple minutes. Maybe we take a five-minute 14 break. 15 MR. SOULE: Sounds good. 16 (Recess taken from 1:59 p.m. to 17 2:10 p.m.) 18 BY MS. SHAH: 19 Q Dr. Jiao, what is your understanding 20 between the difference of providing a declaration 21 and being deposed on a declaration? 22 MR. SOULE: Objection. Form.

125 1 Objection. 2 A Is the question for definition for 3 legal aspect? 4 Q I'm trying to understand. You've 5 provided a declaration and, separately, we have 6 deposed you to discuss aspects of your 7 declaration. 8 Do you have an understanding of the 9 purpose of a deposition, separate and apart from 10 the declaration that you provided? 11 MR. SOULE: Objection. Form. 12 Objection. Vague. Calls for a legal conclusion. 13 Scope. 14 A Well, my understanding is the 15 deposition is related to my declaration, perhaps 16 with questions you want to ask about my 17 declaration. 18 MS. SHAH: I have no further questions. 19 MR. SOULE: Okay. We'll take five. 20 (Recess taken from 2:12 p.m. to 21 2:21 p.m.) 22 MR. SOULE: Back on the record.	127 1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC 2 3 I, JUDITH E. BELLINGER, RPR, CRR, CSR, 4 Certified Reporter and Notary Public within and for 5 the State of the District of Columbia do hereby 6 certify: 7 8 That JIANZHONG JIAO, PH.D., the witness 9 whose deposition is hereinbefore set forth, was duly 10 sworn by me before the commencement of such deposition 11 and that such deposition was taken before me and is a 12 true record of the testimony given by such witness. 13 14 I further certify that the adverse party, 15 VOLKSWAGEN GROUP OF AMERICA, INC., was represented 16 by counsel at the deposition. 17 18 I further certify that the deposition of 19 JIANZHONG JIAO, PH.D., occurred at the offices of 20 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C., 1101 K 21 Street, NW, Washington, DC 20005 on TUESDAY, JANUARY 22 9, 2024, commencing at 9:06 a.m. to 2:23 p.m.
126 1 We have no further questions. 2 MS. SHAH: Okay. Thank you, Dr. Jiao. 3 For purposes of the transcript, if we 4 can get -- we'll probably need an expedited 5 transcript. 6 THE STENOGRAPHER: When do you need it? 7 MS. SHAH: I'm sorry? 8 THE STENOGRAPHER: When will you need 9 it? 10 MS. SHAH: Let's say, next Monday. 11 THE STENOGRAPHER: Will do. 12 MS. SHAH: Okay. Wonderful. 13 MR. SOULE: We'll take it when they get 14 it. 15 (Off the record at 2:23 p.m.) 16 17 18 19 20 21 22	128 1 I further certify that I am not related to 2 any of the parties to this action by blood or 3 marriage, I am not employed by or an attorney to any 4 of the parties to this action, and that I am in no way 5 interested, financially or otherwise, in the outcome 6 of this matter. 7 8 IN WITNESS WHEREOF, I have hereunto set 9 my hand and affixed my notarial seal this 15th day 10 of JANUARY, 2024. 11 My Commission Expires: January 1, 2027 12 13 14 15  16 NOTARY PUBLIC IN AND FOR 17 THE DISTRICT OF COLUMBIA 18 19 20 21 22

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