

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

3 SIEMENS MOBILITY, INC., GROUND TRANSPORTATION SYSTEMS
4 USA, INC., HUMATICS CORP., and PIPER NETWORKS INC.
Petitioners,

5 vs

6 METROM RAIL, LLC,
7 Patent Owner

8 Case No. IPR2023-00468-470
Patent Nos. 9,043,131 and 8,812,227

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10
11 The deposition of PROFESSOR TODAR COOKLEV,
12 taken pursuant to the provisions of the United States
13 Patent and Trademark Office pertaining to the taking
14 of depositions for the purpose of discovery, taken
15 before Ms. Vernetta McCree, Notary Public and
16 Certified Shorthand Reporter in the County of Will,
17 State of Illinois at 500 West Madison Street, 34th
18 Floor Chicago, IL 60661 on the 23rd day of October,
19 A.D., 2023 at 9:51 a.m.
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23
24

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1 MR. WISNIA: Howard Wisnia on behalf of the
2 Petitioner. With me also is -- well, maybe everybody
3 else can announce themselves also.

4 MR. RAHMEIER: Sure. This is Thatcher
5 Rahmeier representing Ground Transportation Systems
6 USA, Inc.

7 MR. NIEBERG: This is Gregory Nieberg
8 representing the Humatic Petitioner.

9 MR. JAMES: And this is Joshua James
10 representing Siemens Mobility, Incorporated.

11 MR. CHIPLUNKAR: For the patent owner, this
12 is Raj Chiplunkar from McAndrews on behalf of the
13 patent owner and the witness, Dr. Cooklev.

14 MR. SCHODDE: And also for Metrom, Greg
15 Schodde.

16 TODAR COOKLEV,
17 After having been first duly sworn, on oath, deposes
18 and testifies as follows:

19 CROSS EXAMINATION

20 BY MR. WISNIA:

21 Q. Good morning, sir.

22 A. Good morning.

23 Q. Where are you physically today?

24 A. Chicago, Illinois.

1 Q. Are you in the offices of McAndrews Held
2 and Malloy?

3 A. Yes.

4 Q. Who is in the room there with you?

5 A. Raj Chiplunkar and Greg Schodde, and also
6 the court reporter.

7 Q. All right. Any one else?

8 A. No.

9 Q. What sort of documents, if any, did you
10 bring today?

11 A. I assume you mean to the deposition. So,
12 with me I have a clean, unmarked copy of my
13 Declaration, and also the exhibits to my Declaration.

14 Q. Okay. Anything else?

15 A. No, I did not bring anything else. And if
16 I may, since you asked me about the documents and the
17 exhibits, there is one, this one typo if, with your
18 permission I'd like to correct and one omission.

19 Exhibit 2023 says Claims 1 and 17, and it should say
20 claims 1 and 7, not 17. As far as that's a typo. As
21 far as one omission in any Declaration in the list of
22 materials, the list of materials includes only the 131
23 patents, but it should also include the 227 patent as
24 well. I also looked at the 227 patent.

1 Q. Okay. Sir, you said you had a clean copy
2 of everything there with you, is that right, all the
3 documents you just mentioned?

4 A. Yes, that's correct.

5 Q. Okay. So, what I'd ask you to do is take
6 a pen and annotate those two changes on the documents
7 and at a break, I'm going to ask your lawyer to just
8 make a copy and we'll mark it as an exhibit.

9 A. I did not completely understand what I
10 have to do. I have to annotate.

11 Q. Just take your pen, go to Exhibit 2023 and
12 cross out the 1 and 17 and make it a 7?

13 A. I see okay.

14 Q. Just initial it after you've done that,
15 and then go into your Declaration and in your list of
16 materials, add a row to your table and add the 227
17 patent and initial it as well.

18 A. So, I crossed one so to make claims 1 and
19 7 on every page of Exhibit 2023.

20 Q. Okay. Then, just initial it please, sir?

21 A. I will do that. Maybe I can complete this
22 after the deposition, or right now.

23 Q. I'd like to do it, you can do it during a
24 break if you want, it's not a biggie.

1 A. Well, I'm almost halfway through the
2 document. And, this only applies to the 131 patent.
3 The 227 patent says claims 1 and 7. So, I should
4 initial every page or just the typo page?

5 Q. Just the pages where you make a change.

6 A. So, I will insert on page 6 the list of
7 materials. Is the 227 patent Exhibit 1002?

8 Q. No, it's actually 1001. So, there's 2
9 different IPR's, and they use the same number for
10 certain things?

11 A. I see.

12 Q. So, what you can do is mark it as Exhibit
13 1001-470 because that is the particular IPR that it's
14 in.

15 A. Okay. So, I will add one line 1001-470?

16 Q. Yes, sir.

17 A. And it says--same inventors, I assume.
18 So, I added one line to the list of exhibits. The
19 line says 1001-470 U.S. Patent Number 8812227 to
20 Carlson, et al, and I initialed.

21 Q. Perfect. Thank you, sir. All right.
22 With those particular changes that you just discussed,
23 is your Declaration full and complete and accurate?

24 A. To the best of my knowledge, sitting here

1 right now, yes.

2 (WHEREUPON, Exhibit No. 2011 was
3 presented to the witness)

4 Q. And, I've put into the chat Exhibit 2011,
5 which I believe is your Declaration, before you just
6 made your changes in pen. Can you just confirm for me
7 that Exhibit 2011 is your Declaration?

8 A. Yes, I see that you've done this twice.

9 Q. I did because the reporter wasn't logged
10 in in time to see the first one, so--

11 If I guys are speaking, I can't hear it.

12 A. There's a, I'm using not my computer and
13 there's an issue with opening PDF documents here.

14 Q. Typically you have to download it to the
15 computer, then open it.

16 A. I did that, but then Adobe Acrobat
17 requires a sign in.

18 MR. SCHODDE: Off the record.

19 (WHEREUPON, a short break was taken)

20 Q. Sir, can you confirm for us that Exhibit
21 2011 is your Declaration as it existed prior to the
22 changes you just made in pen?

23 A. Yes.

24 Q. Okay, all right. Sir, if you would open

1 up Exhibit 2011, or the one that you have in front of
2 you? Either is fine with me. Tell me when you're
3 ready.

4 A. I'm ready.

5 Q. I'm going to ask you some questions about
6 your CV, which starts at page 17 of the PDF?

7 A. Okay.

8 Q. Sir, you've been deposed 7 times before?

9 A. I have.

10 Q. How many times in total?

11 A. About 30.

12 Q. All right. And so all of your depositions
13 are not listed on this CV, is that correct?

14 A. Well, I'm not sure. I'm not sure even
15 what do you mean. Well, I see that my CV includes the
16 cases that I have worked on and I have provided expert
17 testimony the last four years. So I think it might
18 extend over the last 5 years.

19 Q. When did you first start providing expert
20 testimony?

21 A. By deposition, you mean?

22 Q. Let me ask you when was the first time you
23 submitted a report, gave a deposition, and testified
24 in court on an expert matter?

1 A. Around 10 years ago.

2 Q. When is the first time you testified in
3 court?

4 A. About 9 years ago.

5 Q. And what about by deposition?

6 A. Before I testified in court, I was
7 deposed.

8 Q. All right. So, how many additional cases
9 do you think you've testified, either by deposition or
10 trial that are not listed in your CV in Exhibit 2011?

11 A. It seems to me that this one case, and
12 that is that case that I testified, I was deposed
13 about 10 years ago and testified at trial about nine
14 year ago. It seems to me that that is the only case
15 that's not listed here.

16 Q. What's the name of that case?

17 A. The -- no, I certainly can answer, it's, I
18 think the Interdigital Inc., I mean, I don't exactly
19 remember, but Interdigital versus ZTE.

20 Q. And was that a lawsuit or an IPR?

21 A. I was a district court case.

22 Q. Okay. And where was that case?

23 A. In the District of Delaware.

24 Q. And who did you testify on behalf of?

1 A. Interdigital.

2 Q. And what law firm were you working with in
3 that case?

4 A. Ladem & Watkins.

5 Q. And what was the general area of your
6 testimony? By that I mean patent validity, in
7 validity, infringement, non-infringement, that type of
8 thing?

9 A. My testimony was on infringement and
10 validity.

11 Q. Do you recall what the result was in that
12 case?

13 A. I do.

14 Q. What was the result?

15 A. By result you mean what the Jury decided?

16 Q. We could start there.

17 A. The jury decided that the patent is valid
18 and infringed.

19 Q. All right. And was there any additional
20 decision related to the patents after the jury
21 decision?

22 A. I don't even understand the question.
23 What do you mean, additional?

24 Q. Well, you said to me do I mean the jury's

1 decision. Sometimes after there's a jury's decision,
2 there's an appeal. Sometimes the Judge changes the
3 jury's decision is based on motions, things of that
4 nature?

5 A. I see. I, to the best of my knowledge,
6 the Judge did not change the jury decision. But
7 beyond that, I don't think I was involved to be able
8 to answer your question.

9 Q. Okay. Do you know what a Dalbert motion
10 is?

11 A. I do.

12 Q. Have you ever been the subject of a
13 successful Dalbert motion?

14 A. No.

15 Q. Has a Judge or a court ever limited your
16 testimony in any manner?

17 MR. CHIPLUNKAR: Objection, form.

18 A. I don't think so.

19 Q. You have in your CV a list of publications
20 and patents. Do any of them relate to the use of UWB
21 specifically in the railroad industry?

22 MR. CHIPLUNKAR: Objection, form.

23 A. Well, similar to UWB.

24 Q. Any of them as UWB as used in the railroad

1 industry?

2 A. Well, UWB used in the railroad industry
3 was novel at the time of the invention of the 131 and
4 227 patents. So, none of my publications and patents
5 address this novel feature of the two patents here.

6 Q. So, you have no publications or patents
7 that describe the use of UWB in the railroad industry,
8 correct?

9 A. Like I said, I have publications that
10 relate to UWB but not, no, that was a novel feature at
11 the time of the invention my publications do not
12 address this feature.

13 Q. What is the basis for your opinion that
14 UWB as used in the railroad industry was a novel
15 feature as of the filing of the 131 or 227 patents.

16 A. Well, the basis of my opinion is that
17 first, it is my understanding that the claims of an
18 issued patent in the United States are presumed
19 valid. So, the patent examiner thought that the
20 patents are valid and issued them. But, I have
21 additional basis for that, is because I, because these
22 two patents address the combination of UWB and GPS.
23 And, based on my personal knowledge, prior to the
24 invention of these two patents, the conventional

1 wisdom in the industry, and even as far as government
2 regulations at the time, was that there was a
3 potential for interference between UWB and GPS. And,
4 so, that's an additional basis for my opinion that
5 this was a novel feature at the time of the invention.

6 MR. WISNIA: I'm going to object and move to
7 strike as non-responsive. The question, sir, is not
8 about GPS, the question is specific to what you told
9 me, which is as follows: You told me that the use of
10 UWB in the railroad industry was novel. What is the
11 basis for that opinion?

12 A. Well, I was trying to give a complete
13 answer. I'm not sure how I can give a different
14 answer. As I said, the basis is that first I
15 understand that the claims are presumed valid. And
16 second, I was not familiar with application of UWB to
17 the railroad industry. So, that's an additional basis
18 for my opinion.

19 Q. Okay. So again, turning back to your
20 patents and publications, what patents or publications
21 do you have that are specific to the railroad
22 industry, in any manner?

23 MR. CHIPLUNKAR: Objection, form.

24 A. Well, I'm not completely -- I think not

1 completely clear on exactly what you mean by railroad
2 industry. My patents and publications -- so, most of
3 them deal with, that's in general mass communication
4 technologies. That's how I think I can answer.

5 Q. Can you identify by title any patent or
6 publication that you have in your CV as part of
7 Exhibit 2011 that is specific to the railroad
8 industry?

9 MR. CHIPLUNKAR: Objection --

10 Q. Or discusses the railroad industry in any
11 manner?

12 MR. CHIPLUNKAR: Objection, form.

13 A. No, I cannot identify a publication that
14 is specific to the railroad industry. But I just, as
15 I said, my publications discuss various technologies,
16 communication technologies, signal processing
17 technologies, but they do not go into the
18 publications, and the patents do not go into the
19 railroad industry.

20 Q. Do you have any publications that are
21 specific to collision avoidance?

22 A. Not exactly collision avoidance. I have
23 publications that discuss synchronization techniques,
24 publications that discuss ultra wide band, and in this

1 sense, these publications are relevant to the subject
2 matter of the 131 and 227 patents.

3 Q. My question is slightly different. Do you
4 have any patents or publications that are specific to
5 collision avoidance?

6 MR. CHIPLUNKAR: Objection, form.

7 A. As I said, I do not discuss collision
8 avoidance in any of my publications.

9 Q. What is ranging?

10 A. That is an interesting question. I think
11 it depends on the context. If you tell me a little
12 bit more about the context, I think I could try to
13 answer.

14 Q. What is ranging as it relates to vehicles.

15 MR. CHIPLUNKAR: Objection, form.

16 A. Vehicles, I mean, I -- I mean, I think a
17 little bit more, maybe you had a passage in mind, I
18 could maybe read that passage and maybe tell you as I
19 said, I am familiar with ranging, I have seen that in
20 as far as I recall I've seen it in publications. If
21 there's a passage I could maybe read and tell you a
22 little bit, give you a better answer.

23 Q. If we look in your Exhibit 2011 and we
24 look at the table on page 6, these are the materials

1 that you considered, plus the 227 patent, correct?

2 A. Yes.

3 Q. All right. And, this is the only
4 documents that you reviewed and considered in
5 preparing your analysis and your Declaration in this
6 case, correct?

7 A. Yes, I think that's correct.

8 Q. You did not review the petition in this
9 case, correct?

10 A. I do not recall at the moment reviewing
11 the petition.

12 Q. You did not review any of the prior art
13 that was cited or relied upon in the petition,
14 correct?

15 A. I do not recall reviewing any of the prior
16 art, no.

17 Q. Did you review the patent owner's
18 preliminary response to the petition?

19 A. I do not recall reviewing the preliminary
20 response.

21 Q. Do you know who Scott Andrews is.

22 A. At the moment, I do not.

23 Q. Mr. Andrews submitted a Declaration in
24 support of the petition, have you seen that?

1 A. I do not recall. I think I have not seen
2 that.

3 Q. Did you review the patent office's
4 decision instituting the IPR's for the 468 and 470
5 IPR's?

6 A. I do not recall. I don't think I have
7 reviewed that.

8 Q. At some point, the patent owner in this
9 case filed a motion with the PTAB saying that they
10 needed discovery related to Piper System and other
11 secondary considerations, did you see that motion?

12 A. It is my understanding that the patent
13 owner has filed this motion, but I do not recall
14 seeing the motion, I do not recall seeing the document
15 with the motion.

16 Q. And the Petitioners responded to that
17 motion and opposed the motion. Have you seen that
18 response?

19 A. It is my understanding that the
20 Petitioners opposed the motion. I have not seen the
21 paper with which, the paper that the Petitioner
22 submitted.

23 Q. And then the PTAB denied the motion, are
24 you aware of that?

1 A. I'm vaguely aware of that.

2 Q. You did not see the decision of the Board
3 denying the motion and their explanation, correct?

4 A. I have not seen that.

5 Q. When were you first engaged for this
6 particular matter?

7 A. I was engaged, based on my recollection,
8 in the first days of September.

9 Q. Sometime in early September, 2023?

10 A. Yeah. As I said, sometime in the first
11 days of September, something like that.

12 Q. Okay. And who contacted you about this
13 matter?

14 A. The attorney who is defending me at this
15 deposition, Raj Chiplunkar.

16 Q. Had you worked with Mr. Chiplunkar before?

17 A. Yes, I have.

18 Q. How many times?

19 A. Well, it's a little difficult for me to
20 answer your question, how many times I've worked with
21 him over a number of years.

22 Q. Can you give us a sense of how many years?

23 A. Around 7, 8 years maybe.

24 Q. Have you ever, in your expert work, acted

1 on behalf of a Petitioner in an IPR?

2 A. Yes.

3 Q. Have you ever, in your expert work, acted
4 on behalf of a party challenging the validity of a
5 patent in court?

6 A. Also this question is just for district
7 court cases. No, I haven't.

8 Q. Are you excluding something else like an
9 ITC proceeding?

10 A. I was excluding IPR's.

11 Q. Oh, yes.

12 A. Not necessarily ITC proceedings.

13 Q. How many times have you acted as an expert
14 challenging a patent in an IPR?

15 A. The best I can answer, and if your
16 question is how many times, it's, I mean, in a sense
17 it's just once, but for IPR's.

18 Q. Can you identify first on your CV which
19 matter you're referring to?

20 A. Yes, I can. It is my CV I list as, that
21 I'm still an expert for Ford, and I worked with the
22 law firm of Ladem & Watkins, and now the matter is
23 handled by a different law firm. And, this is a case
24 where I submitted several Declarations in support of

1 petitions for IPR's.

2 Q. Okay. That's Neo Wireless versus Ford, is
3 that what you're referring to?

4 A. Yes.

5 Q. All right. So, you say you were first
6 engaged in the first couple of days of September,
7 2023. And, your Declaration is signed September 15th
8 of 2023. How many days did you work on this matter
9 prior to submitting your Declaration?

10 A. I worked for several days, maybe not full
11 time every day, but for several days.

12 Q. How much time in total did you bill for
13 your work up and through the signing of the
14 Declaration?

15 A. I mean, I submitted an invoice for a
16 number of hours. I don't recall at the moment. But
17 again, I spent, as I said, I spent several days on it
18 and submitted an invoice at the end of the month.

19 Q. Can you give us your best estimate, was it
20 under 15 hours?

21 A. I think I would agree that it was probably
22 under 15 hours.

23 Q. Can you make it any more precise than
24 that?

1 A. That would be maybe between 10 and 15
2 hours.

3 Q. The charts that are referenced in your
4 Declaration, who created those?

5 A. Well, these charts I had several
6 discussions over the course of my work with, again,
7 Raj Chiplunkar. And. These charts were created as a
8 result of these discussions that I had with him.

9 Q. Were any of the charts unchanged from as
10 they were sent to you prior to your discussion with
11 any of the attorneys in this case?

12 MR. CHIPLUNKAR: Objection, seeks privileged
13 information.

14 A. I'm not sure.

15 Q. Let me try to ask the question precisely
16 because I don't want to ask you about privileged
17 information. What I'm trying to understand is, were
18 any of the charts sent to you before you had talked to
19 anybody about them, and then ended up being used in
20 your report unchanged?

21 A. Oh, I think no. I think we discussed this
22 and then the charts were prepared.

23 Q. So just to jump back for a second, I was
24 asking you about materials you reviewed. You

1 mentioned you reviewed the 131 and the 227 patents,
2 but you did not review their file issues, correct?

3 A. That's correct, or at least I -- to
4 qualify my answer a little bit, I do not recall at the
5 moment reviewing the file history.

6 Q. Aside from folks that are lawyers at
7 McAndrews Held and Malloy, who did you speak to in
8 this matter?

9 A. Well, aside from the discussions that I've
10 had with counsel, it's what I describe in my
11 Declaration. I had maybe a couple conversations with
12 Mr. Gunther and Mr. Marchi.

13 Q. Do you use any sort of assistants or grad
14 students that assist you in your expert work?

15 A. Rarely. I've done that on, if there's a
16 need for that. But, there was no need for that in
17 this case.

18 Q. Okay. So, the entire universe of folks
19 that you've spoken to in analyzing the issues in this
20 case and preparing and executing your Declaration are
21 folks that work at McAndrews Held & Malloy, Mr. Marchi
22 and Mr. Gunther, correct?

23 A. That's correct.

24 Q. Did you physically see any devices or did

1 you only look at documents?

2 A. I did not physically see devices because
3 it's my understanding that as an expert, I can rely,
4 and it is customary to rely on people from the
5 industry. And, in this case, I was relying on Mr.
6 Gunther and Mr. Marchi.

7 Q. So, you did not go somewhere and
8 physically see a device on a train, or somebody show
9 you a physical device of any kind, correct?

10 A. That's correct.

11 Q. Now, you mentioned that you have several
12 publications related to UWB. I think in your
13 Declaration you identify one or two of them?

14 A. Yes.

15 Q. You refer to, on page 3 of your
16 Declaration, a paper titled UWB FSK Performance
17 Tradeoffs for High Complexity Receivers published in
18 the IEEE Transactions on Consumer Electronics in 2010.
19 You see that?

20 A. Yes.

21 Q. And, that relates to UWB as used in
22 consumer devices, is that right?

23 MR. CHIPLUNKAR: Objection, form.

24 A. I think that that could be a fair

1 statement. The paper relates to a novel, at the time,
2 type of UWB using frequency shift keying or FSK. And
3 it investigates its performance. So, and we published
4 that paper in the Transactions on Consumer
5 Electronics. So, I think as far as industry focus, I
6 think it's fair to say that consumer devices were the
7 focus.

8 Q. And so when you say high complexity
9 receivers, what type of receivers were you testing in
10 referring to that?

11 A. I think we used the term high complexity
12 receivers because frequency shift keying can be
13 demodulated at the certain level with a less accurate
14 approach. Simpler, but less accurate. Or the
15 alternative is you could go for a more accurate but
16 more complex approach. And, that's the approach we
17 went after. That's why we used this term.

18 Q. Do you have any patents that relate to
19 UWB?

20 A. I do not -- no, I do not recall, no.

21 Q. What would you describe as your primary
22 area of academics research?

23 MR. CHIPLUNKAR: Objection, form.

24 A. Hardware and software for wireless

1 devices.

2 Q. I just didn't hear the beginning of that
3 answer, I apologize. Would you just repeat it?

4 A. Hardware and software for wireless
5 devices.

6 Q. Are you an analog designer, are you a
7 digital designer, do you deal with transition schemes,
8 what is your focus?

9 A. Yeah, I think I can answer. I just gave,
10 I think, an accurate answer to your previous question
11 as far as primary focus. Now, I'm not, I'm not an
12 analog designer. So, one focus of my research for a
13 number of years has been the interface between the
14 analog front end and what is called the digital back
15 end of a radio. And it's, in most cases, there's no
16 attention is paid to this interface. But, I like to
17 pay attention to this interface. So, that is one
18 aspect of my research.

19 Q. I didn't mean to jump in. Please
20 continue.

21 A. I'm just giving example that I, something
22 that I've spent quite a bit of time. And, another
23 aspect of my research has been -- so, as far as
24 software aspects, I can talk about that. The, related

1 to middle ware, autology descriptions of radios, these
2 are some software aspects that I have investigated. I
3 have had a long, for a long time I've been interested
4 in signal processing techniques, which is why I, and
5 one reason why I got into, got interested in ultra
6 wide band. But, another aspect of my research is that
7 it's related to various standards. And so I have, so
8 while I'm interested in just, I can say core signal
9 processing in communication technologies, I'm
10 interested in application to standards. I'm
11 interested in government regulations as they relate to
12 various novel technologies and the how government
13 regulations evolve over the years. I mean, maybe just
14 gives you an idea of some of the things that I have
15 been working on.

16 Q. Thank you. Have you been involved in, you
17 said government regulation. Have you been involved in
18 the government regulation that relates specifically to
19 the railroad industry?

20 A. No. In short, not regarding the railroad
21 industry, but it seems to me that regulations that are
22 relevant in this case, they may not be under the
23 category of regulations for the railroad industry
24 because to begin with, ultra wide band, I'm not sure

1 that it falls under that category.

2 Q. You're not sure that ultra wide band falls
3 under what category, sir?

4 A. The category of railroad industry.

5 Q. So, somebody who is a UWB engineer would
6 have knowledge beyond the railroad industry, not
7 specific to the railroad industry?

8 MR. CHIPLUNKAR: Objection, form.

9 A. Well, if they're UWB engineers, they'll
10 know about communication systems. And, they may know
11 in addition about the railroad industry.

12 Q. Or maybe not, is that what you're saying?

13 A. Well, it's a separating. So, maybe not in
14 general.

15 Q. Sir, you hold a Ph.D, but your
16 undergraduate degree is in Electrical Engineering, is
17 that correct?

18 A. Yes.

19 Q. And, it's fair to say that you have at
20 least 2 years of experience using wireless electronics
21 for control system applications?

22 A. I think that's correct.

23 Q. Do you believe you're able to testify as
24 to the level of skill in the art in this case?

1 MR. CHIPLUNKAR: Objection, form.

2 A. Whether I'm able to testify about it, I
3 believe I, if and when I'm asked to provide an opinion
4 about that, I think I am. I think for the purpose of
5 my Declaration, I'm not providing an opinion about the
6 level of skill in the art.

7 Q. I believe in Paragraph 17 of your report,
8 I'm sorry, your Declaration. Turn there, sir. You
9 state that you're qualified to offer opinions in the
10 field of wireless communications, wireless
11 communication protocols and hardware and software for
12 wireless devices. Do you see that?

13 A. I do.

14 Q. How does that relate, if at all, to the
15 railroad industry?

16 A. Well, as far as hardware and software for
17 wireless devices relates to the subject matter of the
18 131 and 227 patents.

19 Q. If you look at Paragraph 31 of your
20 Declaration?

21 A. Yes.

22 Q. You say you're not opining on what the
23 ordinary skill level in the railroad industry for
24 wireless safety devices is, but you believe your skill

1 level is likely significantly higher than an ordinary
2 skill level in the railroad industry, do you see that?

3 A. Yes.

4 Q. What's the basis for that opinion if
5 you're not -- let me ask you a different question. I
6 don't mean to besmirch you, I know you're very highly
7 educated, very significant experience, but if you
8 don't actually offer an opinion on what the level of
9 skill is for a particular field, how are you comparing
10 your work to it?

11 MR. CHIPLUNKAR: Objection, form.

12 A. I think I understand the question, and
13 it's a, I think it's a reasonable question. But I
14 think the answer is that even though I'm, as it states
15 I'm not, I'm just not offering an opinion on what the
16 ordinary skill level is, just, I believe it is
17 accurate I state that it's, my skill level is likely
18 significantly higher than the ordinary skill level.
19 So, that's, that was my I think my reasoning regarding
20 this statement.

21 Q. If we look at Paragraphs 21 through 29 of
22 your Declaration. You're laying out what I believe is
23 your understanding of the laws as it relates to
24 obviousness, is that correct?

1 A. Yes.

2 Q. You are, in fact, not offering an opinion
3 on obviousness in this case, correct?

4 A. Yes, that's correct. Obviousness is
5 outside the scope of my Declaration.

6 Q. And, if we take a look at Paragraph 23 of
7 your Declaration, you discuss so called objective and
8 issues of non obviousness also known as secondary
9 consideration, you see that?

10 A. I do.

11 Q. And, you list level, you list commercial
12 success; long felt but unresolved need; failure of
13 others to solve the problem that the inventor solved;
14 unexpected results; copying of the invention by
15 others; and industry recognition or expressions of
16 disbelief by experts in the field of the claimed
17 invention, do you see that?

18 A. I do.

19 Q. Of all of those secondary considerations
20 of non-obviousness, you're only offering an opinion on
21 one of them, correct?

22 MR. CHIPLUNKAR: Objection, form.

23 Q. Would that one be copying of the invention
24 by others?

1 A. Yes, I certainly offer an opinion about
2 that. I think in my Declaration I offer an opinion
3 about of that, but if I, that's a, it's a good
4 question because that's the analysis that I made.
5 But, I earlier, I think this morning I said that the,
6 there was skepticism about the combination of ultra
7 wide band and GPS for many years prior to this
8 invention. So, I think I could have explored and
9 could have analyzed maybe a couple more of these
10 secondary considerations, but I think in the sense my
11 Declaration, in my Declaration I'm just offering an
12 opinion about the copying. I think you're correct in
13 this.

14 Q. So, you have not offered in your
15 Declaration any opinion on anything related to
16 secondary considerations of non-obviousness except for
17 allege copying of the invention by others, correct?

18 MR. CHIPLUNKAR: Objection, form.

19 A. Well, just to give an accurate answer, I
20 analyzed the copying of the invention, and I also
21 provide opinions that there is a nexus or a connection
22 between the objective indicia of non-obviousness and
23 the novel aspects of the claimed subject matter.

24 Q. And, the objective indicia of

1 non-obviousness is alleged copying, right? It's
2 nothing else?

3 MR. CHIPLUNKAR: Objection, form.

4 A. I mean, as I said, it is, it's a good
5 question and I think I could, I think I probably could
6 have addressed the skepticism at the time of the
7 invention. But, you are correct that in my
8 Declaration, I analyze the copying.

9 Q. And, the only copying that you analyze in
10 your report is alleged copying by Piper and no one
11 else, correct?

12 MR. CHIPLUNKAR: Objection, form.

13 A. So, you said no one else. I'm not sure
14 that there is anyone else. But, the copying that I
15 analyzed is by the Helix collision avoidance system
16 that is being sold by Piper Networks.

17 MR. WISNIA: Why don't we take a short break
18 off the record.

19 (WHEREUPON, a short break was taken)

20 BY MR. WISNIA:

21 Q. Back on the record.

22 All right. Dr. Cooklev, you understand
23 you're still under oath, correct?

24 A. I do.

1 Q. We look at your report again, sir. I want
2 to ask you again about the charts. Were any of the
3 charts prepared without your input and then later
4 adopted by you without change?

5 A. Well, I think there was a question before
6 the break. No, they were not prepared without my
7 input. I just temporarily, I do not have Exhibit 2023
8 with me because is it, because they took it to make a
9 copy -- oh, okay, this is this one, okay. That's
10 fine.

11 Q. Do you have it, sir?

12 A. I do have it.

13 (WHEREUPON, Exhibit No. 2023 was
14 presented to the witness)

15 Q. Okay. Besides the Aurora and Helix
16 systems, do you have familiarity with any other
17 collision avoidance system in the railroad industry?

18 MR. CHIPLUNKAR: Objection, form.

19 A. You mean by familiarity, I assume you mean
20 whatever I read about them, or used them, or I've read
21 the date. I've read that there are such things.

22 Q. Are you familiar with--well, let me ask
23 you, you read that there are such things in the
24 documents in this case or just in your general

1 reading?

2 A. Just in general, I have read that there
3 are collision avoidance systems.

4 Q. Are you familiar with the technical
5 specifications or the function of any of these
6 collision avoidance systems aside from Aurora and
7 Helix?

8 MR. CHIPLUNKAR: Objection, form.
9 Objection outside the scope.

10 A. Yeah, at the moment I do not recall any
11 other.

12 Q. So, we take a look at paragraph 32 of your
13 report?

14 A. I'm there.

15 Q. Okay. So, the first part of this
16 paragraph, you say you've been asked to determine if
17 Petitioner Piper Networks had sufficient access to the
18 Aurora CAS system to allow it to copy the patented
19 features of the Aurora CAS, and the similarities of
20 Petitioner's Helix CAS to patent owner's Aurora CAS,
21 correct?

22 MR. SCHODDE: Objection, misstates the name
23 of the product.

24 Q. Oh, I apologize. What do I call it?

1 MR. SCHODDE: I think the name is Aura.

2 MR. WISNIA: Aura, okay. A U R A for the
3 reporter, okay, all caps.

4 Q. All right. Let me ask you a fresh
5 question then, sir. In Paragraph 32 you write, I have
6 been asked to determine if Petitioner, Piper Networks
7 had sufficient access to the AURA CAS System to allow
8 it to copy patented features of AURA CAS, and the
9 similarities of Petitioner Helix's CAS to Petitioner
10 AURA's CAS, you see that?

11 A. I do.

12 Q. What did you understand to be sufficient
13 access to allow copying, what does that mean?

14 A. Here I use this term to mean that if
15 Petitioner Piper Networks knew sufficiently well the
16 AURA system, that's what I mean.

17 Q. Sufficiently well for what purpose?

18 A. To allow it to copy the patented features
19 of the system.

20 Q. And, the evidence that you relied upon to
21 demonstrate what knowledge Piper had of the AURA
22 system is Exhibit 2016, correct?

23 MR. CHIPLUNKAR: Objection, mischaracterizes
24 testimony.

1 A. I just don't remember the Exhibit number.

2 Q. Oh, I'm sorry, I'll put it in the chat.

3 (WHEREUPON, Exhibit No. 2016 was
4 presented to the witness)

5 A. But I can, I mean I can because I've got a
6 copy of all the exhibits, I can pull it out. Exhibit
7 2016 you said? Sure.

8 Q. Yes.

9 A. Here it is right here. Yes, I'm looking
10 at Exhibit 2016.

11 Q. So, the question is, the evidence that you
12 relied upon as to what access Piper had with respect
13 to the AURA system is Exhibit 2016 and nothing else,
14 correct?

15 MR. CHIPLUNKAR: Objection, form. Objection
16 misstates the testimony.

17 A. Oh, I relied on Exhibit 2016, but I'm not
18 sure that that's the evidence regarding the access
19 that Piper Networks had. Just, I'm just, for the
20 record, I'm just looking at my Declaration. As I
21 state in my Declaration, Exhibit 2016 is evidence that
22 the features of the AURA collision avoidance system
23 with the claimed features were publicly available
24 around June, 2013. But, that's not the only, that's

1 not the only evidence that I relied on. Then Exhibit
2 2017 is evidence that the Petitioner's Helix system
3 was available around August, 2021. But, I don't say
4 that's all of it, this is 2017 establishes this fact
5 as far as the date that it, that the Helix system was
6 available. But then I compared, I compared the Helix
7 system with the AURA system and I concluded that there
8 is substantial similarity between the two.

9 Q. But sir, my question is a little bit more
10 precise than I think what you're answering. So, let
11 me try to clarify, okay.

12 You're saying that you've come to the
13 conclusion that Piper copied something, right?

14 A. Yes.

15 Q. And that something, let's call that the
16 source material, it copied something from the source
17 material, okay? You comfortable with that language?

18 A. I think I am.

19 Q. Okay. The only source material that you
20 relied upon is Exhibit 2016, correct?

21 MR. CHIPLUNKAR: Objection, form.

22 A. I -- well, maybe a little bit with the
23 question, I have a problem understanding the question.
24 Certainly Piper Networks did not copy a document, they

1 copied a product.

2 Q. And, where is your evidence that they had
3 access to the product?

4 A. Well, because the product was, the AURA
5 system was available at least since June of 2013.

6 Q. My question, sir, is you've come to the
7 conclusion, based on your review of certain evidence,
8 you told me you didn't look at anything physical,
9 nobody showed you anything, aside from these
10 documents. So, my question is, what document do you
11 believe, or documents do you believe Piper looked at
12 as the source material to copy the AURA system and
13 make the Helix system that is the basis of your
14 opinion as expressed in your Declaration of Exhibit
15 2011?

16 MR. CHIPLUNKAR: Objection, misstates the
17 testimony.

18 A. I'm not identifying any other documents
19 than the exhibits to my Declaration. But, the basis
20 for my opinion that Petitioner Piper Networks copied,
21 or the Helix system, the Helix collision avoidance
22 system copied the AURA system, the basis first is the
23 dates of their public availability. But second, that
24 it's not just based on the dates. Second, I compared,

1 I compared the two systems. And. As I state in
2 paragraph 39, I compared claims 1 and 7 of the patents
3 to the features of Helix collision avoidance system
4 and there is a high degree of correspondence between
5 the claims and the Helix collision avoidance system.
6 And so, this is the basis for my opinion. But, I'm
7 not, I did not identify any other documents than the
8 ones that are exhibits to my Declaration.

9 Q. Okay. Now, Exhibit 2016 is a group
10 Exhibit, correct?

11 A. Group Exhibit?

12 Q. Yeah, you took two documents, you put it
13 together, you made one exhibit?

14 A. I, I mean, I will agree that Exhibit 2016
15 is what it is.

16 Q. So, if I look at Exhibit 2016, pages 1 and
17 2 of that document are from the Wayback Machine,
18 correct?

19 A. Yes.

20 Q. Pages 3 through 6 are not from the Wayback
21 Machine, correct?

22 A. That is correct.

23 Q. Okay. So, what is your evidence, if any,
24 that pages 3 through 6 of Exhibit 2016 were publicly

1 available as of 2013?

2 A. It's possible that I don't have evidence
3 that these pages were available in 2013. But,
4 however, what is relevant is that on, for what was
5 available in 2013, which is the AURA collision
6 avoidance system, and we see here the first 2 pages of
7 Exhibit 2016, they use an interface of the AURA
8 system. And, it is the same user interface if you see
9 that's on page, it's now at the bottom, it says page 5
10 of 6, and it's the same user interface. So, then, on
11 page 2 of Exhibit 2016 is the control electronics
12 module, and the transmitter/sensor module. And these
13 are the same. So, if you look at now page 5 of 6,
14 there's a control/electronics module. And--

15 Q. That -- sir, the control electronics model
16 on page --

17 MR. CHIPLUNKAR: Please let the witness
18 complete his answer. Please let the witness complete
19 his answer.

20 Q. Let me finish, please. The control
21 electronics module on page 2 looks nothing like the
22 control electronics module on page 5, correct?

23 A. It is true, the picture is different. It
24 could be, it's just -- first, even if the picture is

1 different, you know, I don't think that this is
2 relevant to the purpose of my investigation because
3 the, it is the control electronics module of the AURA
4 system.

5 Q. The transmitter/sensor module on page 2
6 looks nothing like the transmitter/sensor module on
7 page 5, correct?

8 MR. CHIPLUNKAR: Objection, form.

9 A. Well, I agree that the pictures are
10 different.

11 (WHEREUPON, Exhibit No. 2021 was
12 presented to the witness)

13 Q. So, we take a look, let's take a look if
14 we may at Exhibit 2021?

15 A. I'm looking at it.

16 Q. This is where you compare the AURA system
17 to the Helix system, correct?

18 A. Yes.

19 Q. And, all of the entries that you have here
20 for the AURA system relate to the pages that you don't
21 know if they're available in 2013, correct? You don't
22 use any of that information on pages 102, right, of
23 Exhibit 2016.

24 A. Oh, the way i understand the question, I

1 would disagree because even if the pictures are
2 different, that's, I think that's irrelevant because
3 sure the, any one of these and even the user interface
4 it could look a little different. The sensor, the
5 transmitter/sensor module could look different or the
6 control electronics module could look different. So,
7 as I said, the way I understand your question, I think
8 I disagree.

9 Q. Well, let's do it step by step. Let's
10 look at Exhibit 2021. The first entry you have on the
11 left is a bullet point that starts collision avoidance
12 functions are designed to safeguard MOW equipment, and
13 it continues. Do you see that?

14 A. I do.

15 Q. Now, if we turn to Exhibit 2016, that is
16 something that you clipped from page 4 of 2016,
17 correct?

18 A. But, which figure, are we talking about
19 the figure on the left, the user interface because on
20 the right it's the Helix collision avoidance system,
21 and that's not Exhibit 2016.

22 Q. I'm in Exhibit 2021.

23 A. Yes.

24 Q. There's two columns to this table I'm

1 looking at the left column?

2 A. Okay.

3 Q. The left column is the AURA system and the
4 right column is the Helix system, correct?

5 A. Yes.

6 Q. Let's focus on the left column, which is
7 the AURA system. The first row has some language that
8 starts collision avoidance functions are designed to
9 safeguard MOW, do you see that?

10 A. I do.

11 Q. That first row in the left column you
12 clipped from page 4 of Exhibit 2016, right?

13 A. Oh, yes, now I understand the question.
14 Yes, you're correct.

15 Q. All right. Let's look at the next entry
16 on the left side it says user interface, okay? Now,
17 this, something that looks something like this appears
18 on page 2. But the one that you actually clipped is
19 on page 5, correct?

20 MR. CHIPLUNKAR: Objection, form.

21 A. You know, counsel, I think they are
22 identical.

23 Q. They're not. If you look at the way the
24 text is written, it's different between pages 2 and 5.

1 And the one take you clipped is from page 5, correct?

2 A. It's possible that they are not, I mean,
3 the, my eyes are--

4 Q. Let me make it easier for you. If you go
5 to page 2, you see the last word on the first line is
6 displays, do you see that?

7 A. The last word on the first line, we
8 talking about the picture of the user interface.

9 Q. Yeah, talking about the picture of the
10 user interface.

11 A. Yes, I see the first line. I can't read
12 the first line.

13 Q. Oh, if you look at on the computer, you
14 can zoom it up so you can make it a little bit more
15 readable.

16 A. Yeah, computers are in general much better
17 than the human eye. I know that on a computer, I do
18 not have -- do I have electronic copies on this
19 computer?

20 Q. I put into the chat Exhibit 2016 and 2021.

21 A. Okay, thank you for that, and I will.
22 Yes, I opened Exhibit 2016.

23 Q. So, if you look at page 2 of Exhibit 2016.
24 You have an entry that says user interface UIM. And

1 then below it says features a 2 x 16 alpha numeric
2 display. That first line ends numeric displays,
3 correct?

4 A. Yes.

5 Q. If you look on page 5 of that same
6 document?

7 A. Yes.

8 Q. You see that for the user interface box it
9 ends?

10 A. Oh.

11 Q. 2 x 16, do you see that?

12 A. Yes, I do, yes.

13 Q. And so when you made, or whoever made
14 Exhibit 2021, the entry is from page 5 of Exhibit
15 2016, it's not from page 2, correct?

16 A. You know, I, first I would say that even
17 though the text is what you said it is, the text, I
18 think the picture of the user interface module, I
19 think that picture is the same picture. And so,
20 subject to this, like I said, I agree with you that
21 the picture that is in Exhibit 2021 comes from is it
22 page 4.

23 Q. 5.

24 A. 5, comes from page 5 of Exhibit 2016, I

1 agree with you. I think the reason, the reason was it
2 seemed to me kind of a higher quality picture. So,
3 that's I think that's at least part of the
4 explanation. So, subject to that, yes, I agree with
5 you.

6 Q. All right. We go back to Exhibit 2021 and
7 we look at the next entry in the left column. There's
8 a heading that says Ultra Wide Band RF UWB, you see
9 that?

10 A. I do.

11 Q. And, that comes from page 4 of Exhibit
12 2016, correct?

13 A. Yes.

14 Q. Okay. Then next below that there's an
15 ENTRY that says advanced GPS technologies, you see
16 that?

17 A. I do.

18 Q. And that comes from page 4 of Exhibit
19 2016, correct?

20 A. Yes.

21 Q. If you look now at the next entry in that
22 left column on Exhibit 2021, there's a heading that
23 says Transmitter/Sensor Module TSM, you see that?

24 A. I do.

1 Q. And, that comes from page 5 of Exhibit
2 2016, correct?

3 A. Yes.

4 Q. All right. So, if we review now Exhibit
5 2021, everything in the left hand column of Exhibit
6 2021 comes from pages 4 or 5 of Exhibit 2016, none of
7 it comes from pages 1 or 2 of Exhibit 2016, correct?

8 MR. CHIPLUNKAR: Objection, form.

9 A. And you said none of it, but pages 1 and 2
10 are evidence that the AURA system did exist around
11 June of 2013. And not only that, but it had these
12 modules. And, in fact, the user interface module; for
13 example, looked identical. And even it doesn't have
14 to look identical, but it is identical. Now, the
15 control electronics module and the transmitter/sensor
16 module, these modules at least they're pictures here,
17 yeah, I agree the pictures are different. But that's
18 not relevant. Because what is being copied are not
19 pictures.

20 MR. SCHODDE: Can we go off the record for a
21 moment? This relates to your copies.

22 MR. WISNIA: Let him finish his answer,
23 then yes.

24 A. So, what is being, obviously what

1 Petitioner copied are not pictures and even if these
2 pictures are, like I said, even if they look
3 different, that's, that doesn't mean that there was no
4 copying, or that the functionality of the Helix
5 collision avoidance system was not present in the 2013
6 AURA system.

7 MR. WISNIA: Okay. Do you need to take a
8 break?

9 MR. SCHODDE: Someone was knocking on the
10 door, relates to the scans you were trying to get
11 ahold of. I was going to attend to that. Tell you
12 what, I'm going to mute my video. You guys can keep
13 going, I'll try to sort that out.

14 Q. Sir, take a look at Exhibit 2027 I put
15 into the chat.

16 A. I was able to download. It's right here,
17 I'm looking at Exhibit 2027.

18 Q. Before I ask the question here, Raj, is
19 Exhibit 2027 pages 13 and 15 are blank?

20 MR. CHIPLUNKAR: Yes.

21 Q. So, Exhibit 2027 is the Declaration from
22 the person that works at the Internet Archive,
23 correct?

24 A. Yes.

1 Q. And you relied on this Declaration to
2 authenticate the web page from 2013, correct?

3 A. I mean, I relied on the Wayback Machine,
4 yes.

5 Q. And so, in this Declaration we see that
6 when we compare it to Exhibit 2016, the only page that
7 is actually authenticated is the first page of Exhibit
8 2016, and that appears on page 14 of Exhibit 2027.
9 And then, no other page of Exhibit 2016 is
10 authenticated by Exhibit 2027, correct?

11 A. Well, the page 14 of Exhibit 2027 is
12 actually 2 pages of Exhibit 2016. It's page 1 and
13 page 2.

14 Q. Oh, okay. I agree. All right. So, let
15 me ask you a different question. So, Exhibit 2027
16 only authenticates pages 1 and 2 of Exhibit 2016, it
17 does not authenticate anything related to pages 3, 4,
18 5 or 6 of Exhibit 2016, correct?

19 A. Based on my review of the documents, right
20 now, I think I have to agree with you, although I
21 could be missing something or, but based on my review
22 of the documents, I have to agree with you.

23 Q. Okay. So, if you look at paragraph 35 of
24 your Declaration?

1 A. Yes.

2 Q. You write, I used the Wayback Machine to
3 determine approximately when the features of the AURA
4 CAS were first publicly available, features of the
5 AURA CAS and specifically the various claimed features
6 were publicly accessible via patent owners website at
7 least since June 2, 2013. Then you write see Exhibit
8 2016, right?

9 A. Yes.

10 Q. So, as we figured out the way back machine
11 only relates to pages 1 and 2 of Exhibit 2016, it
12 doesn't relate to pages 3, 4, 5 or 6, correct?

13 A. I mean, you are just asking me what you
14 asked me just a moment ago, right? As I said, based
15 on my review of Exhibit 2027 and 2016, just, I think I
16 have to agree with you.

17 Q. Okay. So, let's turn back now to Exhibit
18 2016 and look at pages 1 and 2 of those documents,
19 okay?

20 A. Okay.

21 Q. If you look at the picture of the control
22 electronics model, CEM, you see it on page 2 of
23 Exhibit 2016?

24 A. Yes, I'm there.

1 Q. Do you have any idea from this picture how
2 this control unit operates?

3 A. Well, to determine the operation, this is
4 where I think the patents would be helpful. This is
5 not intended, this document is not intended to
6 describe the complete, it's not, the document is not
7 intended to include the complete description of how
8 any one of these modules operate. There is some
9 description that you, the right of every module, and
10 that's what this document includes.

11 Q. Here is my question, sir. Is it merely
12 the fact that in your view the Helix system meets
13 claims 1 and 7 of the patent that leads you to the
14 conclusion that the Helix system was copied, or was
15 there something beyond that?

16 MR. CHIPLUNKAR: Objection, form.

17 A. I think this went a little bit beyond
18 that. It's beyond that. In my opinion, there is a,
19 as I state, a high degree of correspondence between
20 the, between claims 1 and 7 and the Helix system.
21 But, my opinion that Piper Networks copied the AURA
22 system is not just, it's not just based on comparing
23 the Helix system to the claims. There is a -- first,
24 the as I write in the Declaration, the AURA system was

1 publicly available for a number of years before the
2 Helix system came into existence. And, there is also
3 a high degree of correspondence between the Helix
4 system and the AURA system. And it doesn't matter how
5 the different modules look, that's just a high degree
6 of correspondence between these systems.

7 Q. Well, I'm not talking about just how it
8 looks sir, I'm talking about how it operates. So,
9 there's no information that you've identified that
10 Piper had access to prior to the Helix system that
11 demonstrates how the control electronics module
12 operates in the AURA system, correct?

13 A. And, I'm sorry, maybe the question got a
14 little bit long so I did not completely get it.

15 Q. Sure, let me rephrase it. You have
16 identified no evidence that Piper had access to prior
17 to the Helix system demonstrating how the AURA control
18 electronics module operated or was designed, right?

19 MR. CHIPLUNKAR: Objection, form.

20 A. Well, I wouldn't quite agree that, first,
21 the Piper Networks knew of the patents and they knew
22 of the AURA system.

23 Q. What is your evidence that Piper knew
24 about the patents prior to developing the Helix

1 system? Where is that in your Declaration?

2 A. So, just for the record and to explain
3 what I'm doing, I'm looking at the exhibits to my
4 Declaration. As I say here, I have the clean,
5 unmarked copies. I just pulled -- which exhibit is
6 this, I pulled Exhibit 2011 -- no, excuse me, Exhibit
7 2008 and so I'm -- just a second.

8 Q. Sir, feel free to look at that. I want to
9 be clear here I'm not looking for new opinions here
10 today, I'm looking for the opinion that's in your
11 Declaration. So, if you could look at what you like
12 in those exhibits, but I want you to point to me in
13 your Declaration where you explain what evidence that
14 we're talking about?

15 A. Oh, I understand your question but to, I
16 do state in my Declaration that I rely on the
17 declarations submitted by Mr. Marchi and Mr. Gunther.

18 Q. Yeah, for very specific things.

19 MR. CHIPLUNKAR: Objection, form,
20 argumentative.

21 Q. So, again, the question, sir, is where is
22 your evidence that Piper had access to the patents 131
23 and 227 prior to development of the Helix system.
24 Identify for me by paragraph in your Declaration where

1 that is?

2 MR. CHIPLUNKAR: Objection, form.

3 A. Oh, but I, the declarations of Mr. Gunther
4 and Mr. Marchi are exhibits to my Declaration, and the
5 way I understand your question is what is the basis
6 for my opinion. And, the basis for my opinions in the
7 Declaration are in part are in their declarations.

8 Q. So, again, sir, if you're unclear to the
9 question, I'll make it very plain. Once again.

10 Identify for me by paragraph number in your
11 Declaration where you give the opinion that Piper had
12 access to either the 131 or 227 patents prior to
13 developing the Helix system?

14 A. I mean, as far as the access to the Piper
15 system to the AURA system; for example, the
16 Declaration of Mr. Gunther--

17 MR. WISNIA: Sir, I'm going to move to
18 strike.

19 MR. CHIPLUNKAR: Objection, please let him
20 complete his answer.

21 MR. WISNIA: He's not answering the
22 question.

23 MR. CHIPLUNKAR: He is trying to answer
24 your question. He's not giving you the answer you

1 want. Please let him answer the question.

2 Q. Okay. Dr. Cooklev, we're not talking
3 about access to the AURA system now. Here is the
4 question. Identify for me by paragraph number in your
5 Declaration where you have opined that Piper had
6 access to the 131 or 227 patents prior to developing
7 the Helix system?

8 A. Well, in my Declaration, as far as what is
9 in there, I state that I, in the list of materials, I
10 rely on the Declaration of Mr. Gunther and Mr. Marchi.
11 And, in particular, I relied on their declarations for
12 the question that I understand you're asking about
13 what, to what did Piper Networks have access to. And,
14 I relied on them for information what is happening in
15 the railroad industry specifically regarding collision
16 avoidance systems.

17 Q. So, sir, then the question is, what is
18 your evidence that Piper had access to the 131 or 227
19 patent prior to access -- prior to developing the
20 Helix system?

21 MR. CHIPLUNKAR: Objection, asked and
22 answered.

23 MR. WISNIA: It's not been answered.

24 A. So, my evidence, my evidence is, first, in

1 Section 6 of the Declaration of Mr. Gunther. Section
2 6 is entitled Piper Networks access to the AURA
3 Collision Avoidance Systems. And, here, Mr. Gunther
4 describes what access did Piper Networks have to the
5 AURA Collision Avoidance Systems, Collision Avoidance
6 System. And, this, in this paragraph, Mr. Gunther
7 describes, I think answers sufficiently your question
8 as far as what access did Piper network have to the
9 AURA system.

10 Q. So, you would agree with me that you have
11 no evidence that Piper had access to the 131 or 227
12 patent prior to developing the Helix system, correct?

13 MS. GRODE: Objection, form.

14 A. Well--

15 MS. GRODE: Objection, calls for
16 speculation.

17 A. Yeah, counsel, I cannot agree with this.

18 Q. Well, sir, Gunther doesn't talk about
19 Piper having access to the 131 or 227 patent, your
20 Declaration doesn't talk about Piper having access to
21 the 131 or 227 patent prior to developing the Helix
22 system. So, do you have any evidence that Piper had
23 access to the 131 or 227 patent prior to developing
24 the Helix system; yes, no, or I don't know?

1 A. I think the Declaration of Mr. Gunther
2 establishes sufficient basis to assume that Piper
3 Networks had sufficient access to the AURA collision
4 avoidance system.

5 Q. What does that have to do with the 131 and
6 the 227 patents? My question is very specific, sir.
7 I keep on saying the patent numbers, you don't say
8 them back in your answer, you say something else.

9 MS. GRODE: Objection, form; objection,
10 argumentative.

11 Q. So here is the question again. It's
12 really the last time because I think you understand it
13 okay. If you don't understand the question, let me
14 know before you answer it, okay? I'm not talking
15 about the AURA system in general, okay? So, I'll
16 break it down even more simply. What evidence do you
17 have that Piper had access to the 131 patent prior to
18 developing the Helix system.

19 A. Well, it's, I think the patents were
20 published before the Helix system was, years before
21 the Helix system was developed. And, together with
22 the fact that these companies are in the same
23 industry, target the same or similar markets, and
24 together with the information in the Declaration of

1 Mr. Gunther about that Paragraph 6 specifically
2 entitled access of Piper Networks to the AURA system,
3 I think based on these things, it's reasonable to
4 conclude that Piper Networks had access not only to
5 the AURA Collision Avoidance Systems as described by
6 Mr. Gunther, but it's reasonable to conclude that
7 Piper Networks also knew of the 131 and 227 patents.

8 Q. Sir, I'm going to put into the chat
9 Exhibit 1045. And counsel, I will ask the next
10 question and maybe we could take a break after that,
11 perhaps for lunch or, if that's appropriate.

12 I'm just going to ask you a couple of
13 questions, then we're going to take a break. It's
14 about the hand marked changes you made.

15 A. Okay.

16 (WHEREUPON, Exhibits 1045 and 1046 were
17 presented to the witness)

18 Q. I'm putting into the chat Exhibit 1045 and
19 1046. Tell me when you have them.

20 A. Yes, I will. Not yet. Oh, right there.
21 You dropped first Exhibit 1045, then 1046. I was able
22 to download both.

23 Q. Okay. Exhibit 1045 is your corrected
24 version of Exhibit 2011, correct?

1 A. Yes.

2 Q. And as corrected in Exhibit 1045, Exhibit
3 1045 is a full, complete provision of all your
4 opinions in this case, correct?

5 A. Yes.

6 Q. And Exhibit 1046 is your correction to
7 Exhibit 2023.

8 A. Okay.

9 Q. All right. And, Exhibit 1046 as corrected
10 is now what you believe to be a fully accurate and
11 complete claim chart for claims 1 and 7 of the 131 and
12 the 227 patents vis-a-vie the AURA Collision Avoidance
13 System, correct?

14 A. Yes.

15 Q. All right. I want to take a break. Let's
16 go off the record.

17 (WHEREUPON, the deposition was recessed
18 for lunch)

19 BY MR. WISNIA:

20 Q. Back on the record. Dr. Cooklev, you
21 understand you're still under oath?

22 A. I do.

23 Q. All right. Have you spoken with anybody
24 about your testimony outside with the court reporter

1 present and typing?

2 A. No, I haven't. Was talking only about the
3 lunch.

4 Q. All right. Scale of 1 to 10, how did you
5 make out?

6 A. On a scale of 1 to 10 for what?

7 Q. Just testing, for lunch?

8 A. No, lunch was good.

9 Q. Okay. Good. Let's turn back, if we may,
10 to Exhibit 2021?

11 A. Oh, 21? Oh, okay. Yes.

12 Q. So, I think you mentioned that you are
13 aware of generally the other collision avoidance
14 systems, is that fair?

15 MR. CHIPLUNKAR: Object, it mischaracterizes
16 his prior testimony.

17 A. Yes, I'm not sure that was accurate. I
18 think I was aware that there was such things.

19 Q. All right. And, are you aware that such
20 collision avoidance systems use wireless
21 communication?

22 MR. CHIPLUNKAR: Objection, calls for
23 speculation.

24 A. I have been aware that wireless

1 communication can be used to determine location.

2 Q. What about -- let me strike that. There's
3 a concept of absolute location and relative location.
4 Are you familiar with these concepts?

5 MR. CHIPLUNKAR: Objection beyond the scope
6 of the direct.

7 A. I mean, I think I can understand those
8 terms, and maybe I have seen them, it's, I'm just not
9 completely sure.

10 Q. Well, what I mean by that when I say
11 absolute location, like GPS typically gives you
12 absolute location, very detailed longitude and
13 latitude. Specifically where on planet earth you are,
14 right?

15 MR. CHIPLUNKAR: Objection, form.

16 A. I think that's a fair characterization of
17 GPS.

18 Q. Okay. And then, relative location would
19 be like right now you can't see it, but I'm about 7
20 feet away from my door.

21 A. Okay. So, I think I understand relative
22 location is location relative to another object.

23 Q. Yes. And so, as it relates to collision
24 avoidance systems, very often you need to know the

1 relative distance, in other words how far away is one
2 object away from another object to figure out whether
3 they're going to hit each other or not.

4 MR. CHIPLUNKAR: Objection, calls for
5 speculation.

6 Q. Does that make sense to you, sir?

7 A. I think that makes sense.

8 Q. Okay. So, are you aware that generally
9 these collision avoidance systems, there's some sort
10 of relative distance measurement between two objects?

11 MR. CHIPLUNKAR: Objection beyond the scope
12 of the direct.

13 A. I mean, I did not analyze, you know, I
14 did, I didn't analyze those details in preparation for
15 today.

16 Q. Okay. So, when you prepared Exhibit 2021
17 or you reviewed Exhibit 2021, did you consider whether
18 or not the various features that you allege correspond
19 between the AURA and the Helix system, are unique to
20 the AURA system, or whether they're kind of standard
21 in a collision avoidance system?

22 MR. CHIPLUNKAR: Objection beyond the scope.

23 A. I did not make this analysis in connection
24 with Exhibit 2021.

1 Q. Did you make such an analysis as part of
2 your work in forming your opinions in this case at
3 all?

4 MS. GRODE: Objection, form.

5 A. Well, you said such an analysis, in
6 Exhibit 2023, I compared the claims 1 and 7 of, to the
7 AURA system.

8 Q. Yes.

9 A. And anything beyond that, I just did not
10 do.

11 Q. Okay. So, let's take a look at Exhibit
12 2021 again. And so, the first row of this table I
13 think you're showing that both the AURA system and the
14 Helix system in your view relate to collision
15 avoidance, right?

16 A. Yes.

17 Q. Now, if we were to add a third column and
18 compare it to some other collision avoidance system,
19 Obviously that box is going to be filled, right,
20 because it's a collision avoidance system, right?

21 MR. CHIPLUNKAR: Objection, calls for
22 speculation.

23 A. Well, again, I did not, I didn't do that
24 analysis. But, this is a hypothetical system. I

1 mean, maybe as far as if it's a collision avoidance,
2 it's collision avoidance system.

3 Q. Okay. And then in any sort of collision
4 avoidance system, you need to have some way to alert
5 somebody that there's potentially a collision, right?

6 MR. CHIPLUNKAR: Objection, beyond the scope
7 of the direct.

8 A. Yeah. Well, I think I cannot, I cannot
9 agree with the question. Seems to me it's very open
10 ended question as far as any collision avoidance
11 system. I don't want to speculate what any collision
12 avoidance system must have.

13 Q. Okay. Let me try to ask a more precise
14 question. So, a collision avoidance system that would
15 be used in vehicles, you need to have some way to
16 alert the vehicle operator to a potential collision,
17 right?

18 MR. CHIPLUNKAR: Objection, calls for
19 speculation. Objection, form.

20 A. I mean, really, it's -- but yeah, to
21 answer this question means I have to speculate. Maybe
22 you have to alert, I can't really speculate about
23 that.

24 Q. Can you imagine a collision avoidance

1 system where there was no alert to the vehicle
2 operator?

3 MR. CHIPLUNKAR: Objection, form.

4 A. Again, I mean, can I imagine such a
5 system? It's I suppose it could exist.

6 Q. Well, let me ask you, could you imagine a
7 realistic, commercially viable system where there was
8 no alert to the vehicle operator that there was going
9 to be a collision?

10 MR. CHIPLUNKAR: Objection, calls for
11 speculation?

12 A. So, what is a vehicle operator?

13 Q. The driver, conductor, pilot?

14 A. Okay. But, and I think I understand that.
15 It's just to illustrate that right now, it's difficult
16 for me to give you an answer. But, are there vehicles
17 that don't have operators? There may be.

18 Q. Okay. Let's talk about vehicles that have
19 operators.

20 A. Okay.

21 MR. CHIPLUNKAR: Objection, form.

22 A. I agree, I mean, I will try to give you an
23 answer to the extent that I have considered this in
24 preparation for this.

1 Q. So, what is the answer, sir?

2 A. The answer to which question?

3 Q. Oh, so, can you imagine a commercially
4 viable collision avoidance system for vehicles that
5 have operators where you didn't have some sort of
6 display for the vehicle operator about a potential
7 collision?

8 MR. CHIPLUNKAR: Objection, form. Objection
9 calls for speculation.

10 A. I mean, I don't want to preclude that and
11 say well, it's impossible for such a system to exist.
12 I mean, I suppose some things could be done
13 automatically, even for vehicles that have operators.

14 Q. But, can you think of a viable system?

15 MR. CHIPLUNKAR: Objection, calls for
16 speculation.

17 Q. Sorry. I understand you say something
18 could be theoretically possible, but I'm just trying
19 to talk about practical right now.

20 MR. CHIPLUNKAR: Objection, calls for
21 speculation.

22 A. Well, what I said, something could be
23 possible, not just theoretically possible. I mean, it
24 means practical it could be possible that operates

1 differently than what the way you say.

2 Q. Again, when we look at the second row in
3 Exhibit 2021, what you're saying is effectively the
4 AURA system has a display and the Helix system has a
5 display, right?

6 A. Second row?

7 Q. Yeah.

8 A. Of 2021?

9 Q. Yes. I'm looking at the one that says
10 user interface on the left, then it has like -- go
11 ahead, I'm sorry?

12 A. Yes. So, I was looking at page 2 of
13 Exhibit 2021. I understand you're talking about page
14 1.

15 Q. Yes, I'm talking about page 1. You have
16 to your User Interface UIM on the left and you have
17 Piper Helix CAS on the right?

18 A. Yes, I see this.

19 Q. So, the point that you're making in this
20 row of Exhibit 2023 is both of them have a display,
21 right?

22 A. A display, I'm, I don't think this is just
23 limited to a display.

24 Q. So what is the point?

1 A. There's a user interface. There is a user
2 interface.

3 Q. Okay. And what is the user interface,
4 what's unique about the user interface that both AURA
5 and Helix share, in your view?

6 A. Well, but that's the -- I understand your
7 question is what is unique, but the point of Exhibit
8 2021 is to show that there is a high degree of
9 correspondence.

10 Q. Okay. Well, -- sorry sir, go ahead.

11 A. Yeah, that was the point of Exhibit 2021,
12 is to show that, again, there's a high degree of
13 correspondence between the AURA system and the Helix
14 system.

15 Q. Okay. So, then I want to talking about
16 the point of correspondence in Row 2. So, I assume
17 one of them is they both have some sort of display,
18 right?

19 MR. CHIPLUNKAR: Objection, form.

20 A. Well, I would say that both of them share
21 a user interface module.

22 Q. All right. So, but I want to break down
23 the specific point of correspondence between them.
24 Can you do that for me?

1 A. I mean, I can try.

2 Q. What I want to know is when you gave your
3 opinion in this case, aside from the fact that they
4 were both user interfaces, did you consider anything
5 else in whether, in determining whether or not there
6 was a high level of correspondence between them?

7 A. Well, I'm, assuming how to understand the
8 question, I considered the patents and considered the
9 two systems.

10 Q. Here is what I'm trying to say. For
11 example, let's say you had an old fashioned CRT
12 television, and you had a brand new LCD television,
13 okay?

14 A. Okay.

15 Q. You could put them side-by-side. You say
16 they're very similar, they both have displays, they
17 both have roughly rectangular displays, they both have
18 a receiver to receive television signals and to
19 demodulate them, and to present them to the user.
20 That's one way to say they're similar. There's all
21 sorts of other differences between a CRT and an LCD
22 that you could say would be different. So, I'm just
23 trying to figure out when you did your analysis, what
24 were you focusing on as being the same; and what, if

1 anything, were you focusing on as being different?

2 MR. CHIPLUNKAR: Objection, form.

3 Q. So just to have the question in mind, sir,
4 in Row 2 of Exhibit 2021, when you offered your
5 opinion that this was showing similarity between the
6 two products or correspondence between the two
7 products, what features or items were you pointing to
8 as saying they were similar or corresponding?

9 A. Well, the user interface modules. Both of
10 them have a user interface module.

11 Q. Okay. If I look at the user interfaces
12 that you have here in Row 2 on the left for the AURA,
13 it says features a 2 x 16 alpha numeric display for
14 messaging and programming. Is there a 2 x 16 alpha
15 numeric display for messaging and programming in the
16 Helix system?

17 A. So, I'll break down your question. I did
18 not analyze whether the alpha numeric display in the
19 Helix system is 2 x 16, but it is alpha numeric
20 display for messages and programming.

21 Q. What did you mean by programming, or what
22 does programming mean in this context?

23 A. I think here programming means to enter
24 various user commands.

1 Q. So, what sort of user commands can you
2 enter in the AURA system?

3 A. I did not analyze this to be able to
4 answer.

5 Q. Then, it says a numeric distance displays,
6 and then it says indicator lights for alarm
7 conditions. Is there an indicator light for alarm
8 conditions in the Piper Network System?

9 A. It seems to be yes, there is. I mean,
10 right now the picture, something is in red -- you're
11 asking me about the Helix system, right?

12 Q. I did.

13 A. Yes. And, there's something in red says
14 190 feet.

15 Q. Okay. Is that what you understand to be a
16 indicator light, or is that just colored alpha numeric
17 display?

18 A. I mean, the display I assume is alpha
19 numeric. And, it seems to me this is an indicator
20 light for alarm condition.

21 Q. Do you see the indicator light for alarm
22 conditions on the AURA system, what is that in the
23 AURA system?

24 A. Well, in this picture I don't think that's

1 shown. But, the text describes the AURA system as
2 having such an indicator lights.

3 Q. And, you don't know if it's just like a
4 single red LED or something else, right?

5 A. At the moment, I don't know.

6 Q. And then it says tactile feedback control
7 panel. And, if I look at the picture of the AURA
8 system, it looks like it has those kind of buttons
9 that have some, what is the word, you press it, it has
10 some depth to it, right? That's some sort of a
11 mechanical feel to it, is that your understanding of
12 what that tactile feedback would be?

13 A. I think that's one -- again, I did not
14 investigate this, just to give you a complete answer,
15 I did not investigate this in preparation for the
16 Declaration, or for the deposition today. But, based
17 on my understanding of tactile feedback, I think that
18 could be one implementation of this tactile feedback.
19 It seems to me this is something reasonable in the
20 implementation that you were describing.

21 Q. The Piper system, can you tell whether it
22 has tactile feedback or is it just the plain touch
23 screen?

24 A. From this figure, I cannot determine if it

1 has tactile feedback.

2 Q. And, these say it's contained within a
3 sealed polymer housing. Do you have any idea whether
4 that's true for the Helix system?

5 A. I think it's reasonable to assume that
6 largely it is true that all is contained within some
7 type of housing.

8 Q. But, do you know whether it's a sealed
9 polymer housing or something else?

10 A. That detail, I don't know.

11 Q. Okay. All right. Let's turn to the next
12 row, it's on page 2. And, on the left you have ultra
13 wide band RF. It says, allows the MU to provide
14 accurate and reliable range measurements between
15 equipment without being affected by the same
16 multi-path distortion effects that limit traditional
17 900 megahertz or 2.4 gigahertz systems. Do you see
18 that?

19 A. Yes.

20 Q. What's the MU?

21 A. First, the MU is the same MU that's
22 recited in line 1.

23 Q. I'm sorry, line 1 of what?

24 A. Of the same document, of Exhibit 2021.

1 Q. You mean row 1, is that what you mean?

2 A. Okay. Row 1.

3 Q. I'm not trying to be pedantic, sir, I
4 wasn't sure. We're literally in the same spot, I just
5 want to make sure?

6 A. No, that's fine. Line 1 or row 1 I
7 thought is the same thing.

8 Q. Okay.

9 A. But, there is a MU that's recited in Row
10 1.

11 Q. Okay. What is it, what does a MU do?

12 A. MU is a maintenance of way utility.

13 Q. What is, what do you mean by range
14 measurement? What does range measurements mean in
15 this context? We talked a little bit about it
16 earlier, you said can I point you to something. I
17 mean, here, what does range measurement mean here?

18 A. Yes, we did. I think here it means
19 distance measurements. So, it's distance measurements
20 between equipment.

21 Q. Okay. So, is radar ranging?

22 MR. CHIPLUNKAR: Objection, calls for
23 speculation.

24 A. You know, I have not examined whether the

1 term ranging is used in this context, together with
2 radar. I think radar can be used to measure distance,
3 it's just whether the term ranging is used. I'm not
4 sure at the moment.

5 Q. Okay. So when you're comparing the left
6 and the right of this third row, I think what you're
7 saying is both AURA and Helix uses UWB, is that right?

8 A. Yes.

9 Q. And anything else besides the fact that
10 they both use UWB?

11 A. Well, that's an open ended question. Row
12 3, which we're looking at, says not only did they both
13 are using UWB radios, but they both are using UWB
14 radios for collision avoidance between vehicles,
15 between vehicles.

16 Q. So, the Helix system talks about collision
17 avoidance in that Row 3. And, in the AURA one, it
18 just talks about ranging, or range measurements. You
19 understand that they're talking about the range
20 measurements for collision avoidance, is that your
21 understanding? For collision avoidance, is that
22 correct, to your understanding?

23 A. Yeah, the range measurements, they're just
24 range measurements, they're distance measurements.

1 Q. But, are you saying AURA uses UWB for
2 collision avoidance range measurements or something
3 else? What is the point of putting these two things
4 side-by-side on your chart?

5 MR. CHIPLUNKAR: Objection, form.

6 A. The point is to show the correspondence
7 between these two systems. And, the UWB is a point of
8 correspondence because UWB is used for collision
9 avoidance by both systems.

10 Q. Okay. Do you know what localization is?

11 MR. CHIPLUNKAR: Objection, form.

12 A. I do.

13 Q. What does it mean in this chart?

14 A. I think this description of the Helix
15 system, when it says localization, I think it means
16 determining the location of.

17 Q. Okay. That's what you think localization
18 means, determining the location of, is that what
19 you're saying?

20 A. Well, I think it could be one meaning. I
21 think localization possibly doesn't have a single
22 meaning, but in this context, it seems to me that's
23 the meaning.

24 Q. We look at the next row, you have on the

1 left, advanced GPS technologies, you see that?

2 A. Yes.

3 Q. Do you know if GPS is used for the same
4 purpose in the AURA system as it is used in the Helix
5 system?

6 A. At the level of these two descriptions,
7 yes, GPS is used for the same purpose.

8 Q. Which is what?

9 A. I mean, the GPS provides position
10 information, and the Helix system says high precision
11 position and speed calculation. And the AURA system
12 is described, in the AURA system GPS is described as
13 utilized for speed acquisition, remote based alerts
14 and alarms. So, even if the word position is not used
15 in the description of GPS, as it relates to the AURA
16 system, I mean, GPS provides position information.
17 So, at the level at which these documents are written,
18 GPS is used for the same purpose.

19 Q. The only information about the way the
20 AURA system operates that you have are these documents
21 that you attached as exhibits to your Declaration,
22 right.

23 MR. CHIPLUNKAR: Objection, form.

24 A. Well, you say the only information, I,

1 that's not the only information. I've also had a
2 conversation with Mr. Gunther and Mr. Marchi.

3 Q. What did Mr. Gunther tell you about the
4 operation of the AURA system that's not already in his
5 Declaration, if anything?

6 A. I don't remember the entirety of the
7 conversation, I think the, what was discussed and the
8 conclusions that I reached, I think they are in the
9 Declaration and in the exhibits to the Declaration.

10 Q. All right. Same question with respect to
11 Mr. Marchi?

12 A. Same answer, I don't recall the entirety,
13 I mean, everything is in the Declaration and the
14 exhibits.

15 Q. So, there's no information that you have
16 learned from Mr. Marchi or Mr. Gunther during your
17 phone calls that isn't also written in either one of
18 your exhibits, in your Declaration, or in Mr. Gunther
19 or Mr. Marchi's declarations, is that fair?

20 MR. CHIPLUNKAR: Objection, form,
21 mischaracterizes his prior testimony.

22 A. Well, the yeah, the Declaration, my
23 Declaration and their declarations, they're not a
24 transcript of the phone conversation. So, I don't and

1 I can't recall everything, but the conversations
2 provide additional basis for my opinions.

3 Q. What I'm trying to figure out is what
4 additional information did you learn during those
5 phone calls that aren't already in the written
6 materials? And, by the written materials, I mean
7 specifically your declaration, their declaration and
8 the exhibits attached to your Declaration?

9 MR. CHIPLUNKAR: Objection, form.

10 A. I can't think of something right now.

11 Q. Do you know what limits compliance is?

12 A. Generally I do. Generally it's compliance
13 with certain limits.

14 Q. Do you understand what it means as it's
15 used in this row under the Helix CIS, I guess we're in
16 Row 4?

17 A. Yeah, which is on page 2.

18 Q. Yes.

19 A. This is a high level description of, and
20 for the Helix system is described as containing GPS,
21 which provides high precision position and speed
22 calculation for limits compliance. I just don't know
23 what these limits are.

24 Q. What about time synchronization, do you

1 know what's being referred to there, the analogy RTK
2 is being used for time synchronization?

3 A. I understand time synchronization. GPS
4 provides information as well, and I think that's why
5 it says here GPS for time synchronization.

6 Q. Do you know if the AURA system uses GPS
7 for time synchronization?

8 A. It wasn't necessary for me, it's not
9 necessary GPS to be used for time synchronization to
10 reach the conclusion that there is a high degree of
11 correspondence between these. I don't know if the
12 AURA system is using GPS for time synchronization
13 specifically.

14 Q. Okay. All right. The next row relates to
15 Transmitter/Sensor Module TSM, you see that?

16 A. Yes.

17 Q. Now, my understanding is the transceiver
18 is something that both transmits and receives, is that
19 your understanding of what a transceiver is?

20 A. Yes.

21 Q. Okay. Do you know if the AURA system uses
22 transceivers or whether or not it uses a separate
23 transmitter and a separate receiver?

24 A. I did not investigate this because I think

1 the answer to the question is irrelevant. My
2 perspective was whether or not there is correspondence
3 between these systems.

4 Q. Okay. And, did you consider whether or
5 not they both used transceivers or one used the
6 transmitter and the other one used the transceiver.
7 Did you look at that at all?

8 A. I did not look at that because I thought
9 and think that it's irrelevant.

10 Q. Okay. Do you see that it says that the
11 transmitter sensor model contains a UWB RF and GPS
12 systems, do you see that?

13 A. Now, we've moved to one row down. That
14 is--

15 Q. In the last row, we're in the last row of
16 the table now?

17 A. Right. So, I see that the
18 Transmitter/Sensor Module contains the Ultra-Wide Band
19 RF and GPS systems.

20 Q. Yes. Do you know if in the Helix system
21 that both GPS and the UWB RF are contained in the same
22 transmitter items or whatever you're showing here on
23 the right?

24 A. Well, they're part of the same system.

1 Q. Are they part of the same module?

2 A. It's the same claimed module, and it
3 doesn't matter if the Helix system has put them in a
4 transmitter, in a receiver, but they are part of the
5 same claimed module.

6 Q. Do you see where it says the TSM assembly
7 is constructed of durable lightweight aluminum with
8 proprietary radome material, do you see that?

9 A. I do.

10 Q. Do you know what proprietary radome
11 material is, what does that mean?

12 A. To me, this means some type of special
13 material. I don't specifically understand the radome
14 material.

15 Q. Did you have any knowledge one way or the
16 other whether or not the Helix systems uses such
17 material?

18 A. You know, I did not investigate that
19 because I think it's irrelevant for the purpose of my
20 analysis.

21 Q. All right. So, in your analysis of
22 Exhibit 2021, you determined that there was a high
23 level of correspondence based on the following
24 factors, tell me if I'm right. 1, that they were both

1 for collision avoidance. 2, they both had some sort
2 of user interface. 3, they both used UWB for
3 collision avoidance. Next that they both used GPS of
4 some kind. And lastly, they both have some sort of
5 transmitter, is that right?

6 MR. CHIPLUNKAR: Objection, form.

7 A. Well I, you know, I'm not sure I can
8 entirely agree with this description. You said GPS of
9 some kind. They both use GPS, and they both use GPS
10 for location and speed acquisition, or speed
11 calculation. And, that they both have user interface
12 modules. And, they both have the modules that are
13 claimed by Claims 1 and 7. So, with these
14 clarifications, then overall, I could say yes.

15 Q. Okay. In your view, is it possible that
16 someone could have developed a collision avoidance
17 system that met claims 1 and 7 of the 131 patent any
18 time after 2013 that was not a copy of the AURA
19 system?

20 MR. CHIPLUNKAR: Objection, calls for
21 speculation.

22 A. You know, that type of question, I really
23 have to investigate before I give you an informed
24 opinion here while I'm under oath.

1 Q. So, let me try to clarify the question
2 because I can see from the look on your face that
3 maybe it was a little bit puzzling when I asked it.
4 So, what I'm trying to determine is as follows: When
5 talking about the correspondence, you repeatedly
6 brought up the facts that they both meet Claims 1 and
7 7 of the 131 and 227 patents in your view, correct?

8 A. Yes.

9 Q. Okay. So, what I'm trying to figure out
10 is, does the mere fact that a product, in your view,
11 infringes or meets the claim of the 131 patent mean
12 that that product was a copy of the AURA product?

13 MR. CHIPLUNKAR: Objection, form,
14 mischaracterizes prior testimony.

15 A. I think if a product infringes Claims 1
16 and 7, there would be a reasonable basis to conclude
17 that. But beyond that, I would just need to
18 investigate a little bit more.

19 Q. When you say conclude that, I mean,
20 conclude that it was a copy?

21 A. Yes.

22 Q. Is that what--

23 A. Yes.

24 Q. Okay. So, and that's effectively what

1 you've done here with Helix, isn't it, right, is
2 you've determined that the Helix system, in your view,
3 meets Claims 1 and 7 of the 131 and 227 patents?

4 MR. CHIPLUNKAR: Objection, mischaracterizes
5 his prior testimony.

6 Q. Let me finish the question before you make
7 an objection. Let me re start the question.

8 Effectively what you've done here, sir, is you've
9 concluded that in your view, the Helix system meets
10 Claims 1 and 7 of the 131 and 227 patents, and that
11 information about the AURA system was available online
12 as of 2015. And, based on those two facts, you've
13 come to the conclusion that, in your opinion, the
14 Helix system is a copy of the AURA system, correct?

15 MR. CHIPLUNKAR: Objection form, objection
16 mischaracterizes prior testimony.

17 A. Oh, I think there was a little bit more
18 than that. I also relied on the, on my conversations
19 and declarations of Mr. Marchi and Mr. Gunther that
20 provide additional basis for my conclusion that the
21 Helix system was a copy.

22 Q. When you say your conversation, again,
23 there's nothing that you recall from those
24 conversations that form the basis of your opinion

1 about copying, that is not already included in the
2 written materials that are in your Declaration, their
3 declarations and the exhibits to your Declaration,
4 correct?

5 A. I think it's correct that I don't recall
6 other things.

7 Q. Let's take a look at Exhibit 2021 -- oh
8 I'm sorry, this is just the one we were looking at.
9 Take a look at Exhibit 2023?

10 A. I'm looking at it.

11 Q. So, this is had your claim chart of the
12 AURA system against Claims 1 and 7 of the 131 and 227
13 patents, correct?

14 A. Yes.

15 Q. All right. If we look at page 2, there's
16 some claim language on the left and towards the bottom
17 of the first row there. It says comprising a first
18 radio communication unit and a first antenna, you see
19 that?

20 A. Yes.

21 Q. Okay. Where have you identified the
22 antenna?

23 A. Well, on the right it says all ultra wide
24 band RF and GPS systems. And, these systems must have

1 an antenna.

2 Q. What did you mean by radio communication
3 unit, what's in a radio communication unit?

4 A. The UWB RF system or, let's say, without
5 the antenna because the antenna is separately claimed.
6 But, the UW RF system contains a radio communication
7 unit.

8 Q. And, is that shown in the information you
9 have on the right on this chart?

10 A. But, on the right it says this module
11 contains the ultra wide band RF and GPS systems.

12 Q. Right. Take a look at the next entry,
13 talks about a first control electronics module. Do
14 you see that?

15 A. I do.

16 Q. It says that it comprised of a first
17 processor in communication at least the first
18 transponder sensor module, do you see that?

19 A. Yes.

20 Q. Where have you identified the profit first
21 processor?

22 A. Well, this control electronics module must
23 have a processor.

24 Q. Okay. And where do you show that it is in

1 communication with at least the first transponder
2 sensor module?

3 A. Well, I used on the right, I used the
4 description of the AURA system. To which, I mean
5 which I had, and so this description is, was not meant
6 to answer this question, but since you are asking, I
7 mean, clearly the control electronics module is in
8 communication with at least the first transponder
9 sensor module.

10 Q. Why?

11 A. And actually this communication is
12 identified here because it says the control
13 electronics module serves as the interface point for
14 the user interface module, the transmitter sensor
15 module, and all further activity sensors. So, because
16 its the interface point, it is in communication where
17 the TSM is the Transmitter Sensor Module.

18 Q. How do you know that the processor of that
19 item is in communication with the TSM?

20 A. If the control electronics module is the
21 interface point for these, for the user interface
22 module and the TSM, the processor in the electronics
23 module is in communication with at least the first
24 transponder sensor module.

1 Q. If we could look at the next row, which is
2 on the next page, it says first user interface module,
3 including a first user interface. The first user
4 interface operable to provide rail vehicle information
5 to a vehicle operator and to receive input from the
6 vehicle operator, you see that?

7 A. Yes.

8 Q. Where are you showing that the user
9 interface provides rail vehicle information to the
10 operator?

11 A. Well, on the right for the user interface
12 module it says indicator lights for alarm conditions.
13 So, these alarm conditions are rail vehicle
14 information.

15 Q. Yep, anything else?

16 A. There's a tactile feedback control panel
17 which is, receives input from the vehicle operator.

18 Q. I'm talking about providing rail vehicle
19 information to the operator. You said you identified
20 the, I think you said the life of the alarm
21 conditions. Anything else?

22 A. Yeah, the alarm conditions. I think as
23 far as the information listed here, that that's the
24 vehicle information. But, this is the display that

1 says for messages and programming. So, the messages
2 are also here, rail vehicle information.

3 Q. Why did you rely on this information from
4 the Wayback Machine to learn how the AURA system
5 operated as opposed to ask Mr. Marchi or Mr. Gunther
6 for detailed information and have him show you the
7 product?

8 MR. CHIPLUNKAR: Objection, form.

9 A. Well, I wanted evidence of, about when was
10 the AURA system first fielded, and that's why I relied
11 on the Wayback Machine.

12 Q. Do you know if the AURA system has changed
13 technically or functionally in any manner since the
14 date in 2013 that you pointed to?

15 A. You said in any manner and now I, my
16 analysis is related to the claims. So, other than
17 that, I don't know.

18 Q. Do you know what components make up the
19 AURA system?

20 A. Components, what do you mean this plastic,
21 this electronic component, there's others proprietary
22 materials, I mean, those kinds of materials?

23 Q. Well, what I mean by components is more
24 like a block level diagram, start there, like how the

1 AURA system works.

2 A. No, I don't know.

3 Q. Do you know like the various features of
4 the AURA system?

5 MS. GRODE: Objection, form.

6 A. Well, I do know, I know the features that
7 drive the sales of the AURA system, and these are the
8 features that are claimed by Claims 1 and 7.

9 Q. How do you know that those are the
10 features that drive the sales?

11 A. Based on my conversations with Mr. Gunther
12 and Mr. Marchi.

13 Q. What do they specifically tell you about
14 how those features drove sales?

15 A. I mean, but they describe in their
16 declarations what led to the AURA system, and they
17 describe the industry skepticism in how they convinced
18 the industry, and they describe the sales of the AURA
19 system. So, that's how I came to this conclusion.

20 Q. Do you know if there's other components of
21 the AURA system that customers might find value over
22 than the specific ones you've identified in you
23 Declaration?

24 A. It is the claimed features, it's what's

1 claimed in Claims 1 and 7 that drives the sales.

2 Q. Let me ask you a question. I assume I
3 know you were, you did your Ph.D in Tokyo, so I know
4 you've probably been on plenty of trains and subways.

5 A. I have.

6 Q. So, you understand that one of the issues
7 that you have on a train is that you want to make sure
8 that the train is fully in the station before you open
9 the doors, like a subway station. You wouldn't want
10 the train to open the door and the back of the train
11 still be in the tunnel and not on the, still not on
12 the full platform, right sir?

13 MR. CHIPLUNKAR: Objection, form.

14 A. Yeah.

15 Q. Is that unclear? In other words, let's
16 say when you're in a subway, there's a platform. It
17 has a certain length, and then on either side the
18 train comes and goes, right? The tracks, comes into
19 the station and left the station, right?

20 A. Okay. Based on just that, some general
21 description, I mean, it seems okay, it seems okay.

22 Q. Yeah. And so when the subway train comes
23 into the station, before you open the doors, you have
24 to make sure all the doors are in front of the

1 platform, right? You wouldn't want to open the door
2 and somebody steps out and falls into the subway
3 tunnel, right?

4 MR. CHIPLUNKAR: Objection calls for
5 speculation, assumes facts not in evidence.

6 A. Yeah, that is something that I, I mean, I
7 have specifically not thought about just again to just
8 consider it right now. I mean, it seems something
9 reasonable again, but I haven't thought about it too
10 long.

11 Q. Okay. Did you consider whether or not one
12 of the features that the Helix system or the AURA
13 system would have would be making sure that the doors
14 don't open when they're not over the platform.

15 MR. CHIPLUNKAR: Objection, assumes facts
16 not in evidence.

17 A. I mean, I don't know that the AURA system
18 is directed at subways and opening doors on subways.

19 Q. What about with respect to the Helix
20 system, did you consider whether or not a customer may
21 find it important when they're buying an AURA system
22 with the Helix system that there's some sort of
23 provisioning that protects against the door opening in
24 the wrong spot?

1 MR. CHIPLUNKAR: Objection, form, objection
2 calls for speculation, assumes facts not in evidence.

3 A. I don't know their aim for something like
4 this, I don't know that they can do this.

5 Q. And I know we talked about subways, but
6 even in an outdoor train, right, you still want to
7 make sure that the train is lined up with the platform
8 so that passengers can get on and off the train,
9 right? You don't want it to be not on the platform,
10 right sir?

11 A. I think that's fair. I would agree with
12 something like that.

13 Q. Okay. Makes common sense. So, the
14 question is, do you know whether or not that's
15 something that a customer would consider that would be
16 important to them when they're buying an AURA system
17 or a Helix system, that there was some sort of
18 components other functional activity provided to that?

19 MR. CHIPLUNKAR: Objection, form, objection
20 calls for speculation, assumes facts not in evidence.

21 A. I mean, I don't know that these systems
22 are directed to these kinds of applications, that's in
23 general the answer to your question. I just don't
24 know.

1 Q. All right. Let's take, before I change
2 topics here, I apologize, what time did we start here?

3 MR. SCHODDE: I had 1:15.

4 MR. WISNIA: That's when we started?

5 MR. SCHODDE: After lunch.

6 MR. WISNIA: We've been going for over an
7 hour.

8 MR. SCHODDE: About an hour and 15.

9 MR. WISNIA: Sir, would you like to take a
10 break now?

11 A. I mean, as far as I never decline a break.

12 MR. WISNIA: Let's go off the record, let's
13 take a break.

14 Q. Back on the record. Sir, you understand
15 you're still under oath?

16 A. I do.

17 (WHEREUPON, Exhibit No. 2022 was
18 presented to the witness)

19 Q. All right. Let's take a look at Exhibit
20 2022. Tell me when you have it handy?

21 A. Yes, I'm looking at it.

22 Q. Okay. So this is your claim chart with
23 respect to Claims 1 and 7 of the 131 and the 227
24 patent vis-a-vis the Helix system, right?

1 A. Yes.

2 Q. Okay. All right. If we take a look at
3 Page 2, there's some language that talks about the
4 first vehicle mounted module mounted on a first rail
5 vehicle, first vehicle mounted module comprising, you
6 see that?

7 A. Yes.

8 Q. Towards the bottom there it says
9 comprising a first radio communication unit and a
10 first antenna. Do you see that?

11 A. Yes.

12 Q. Do you see the, have you identified the
13 antenna with respect to the Helix system?

14 A. I would say yes because of things such as
15 ultra wide band, they require antennas.

16 Q. So, if I look at the picture that's on the
17 right, what's the antenna?

18 A. Well, this, I mean, first if we look at
19 the page 1 of Exhibit 2022, it mentions ultra wide
20 band technology. So, this, because it mentions ultra
21 wide band, it must have an antenna. But, specifically
22 on page 2 where we are, I think what is shown is the
23 transponder sensor module that's operable to send and
24 receive data wirelessly. And because it's operable to

1 send and receive data wirelessly, and the transponder
2 module here is, includes ultra wide band as we're
3 talking about, so it includes an antenna.

4 Q. Can you point to me somewhere in this
5 picture where the antenna is? Let me ask you a
6 different question. Is the antenna in the picture
7 that you have on the top of page 2 of Exhibit 2022?

8 A. This is the transponder module. I have
9 not confirmed that the antenna is included, is in this
10 picture.

11 Q. Okay. Let's look at the next row. A
12 first control electronics module comprising a first
13 processor in communication with at least the first
14 transponder sensor module. You see that?

15 A. Yes.

16 Q. And, you have a picture on the right.
17 Where is the first control electronics module in that
18 picture?

19 A. For the purpose of this document, so I'm
20 relying, it's at the bottom, it says the source of
21 this picture, the source is a brochure by Piper
22 Networks. I think we were discussing in the morning
23 that there was a petition for additional discovery
24 that was opposed. There was a motion, I guess, for

1 additional discovery that was opposed by the
2 Petitioner and was not granted. And so here, the
3 source of the information is brochure by Piper
4 Networks that, but this picture shows custom
5 multi-sensor and multi-sensor device, and this device
6 being multi-sensor device it has, it must have a
7 control electronics module. And further, a control
8 electronics module that comprises a processor in
9 communication with the first transponder sensor
10 module. So, this is the basis of this chart.

11 Q. So, you would agree with me that in
12 Exhibit 2022 in the row that starts first control
13 electronics module, you have not identified a control
14 electronics module, you have not identified a
15 processor, you have not identified a processor in
16 communication with at least the first transponder
17 sensor module, right?

18 MR. CHIPLUNKAR: Objection, form,
19 mischaracterizes prior testimony.

20 A. No, I would not agree with that.

21 Q. So, identify for me the first control
22 electronics module, where is that in the information
23 on the right in this row?

24 A. Well, first, the information on the right,

1 I assume that Piper Networks accurately describes the
2 Helix system. So, I assume that this is a faithful
3 representation, and the information on the right says
4 custom multi-sensor LCCAS device, and there's a
5 picture right next to it. And so, to the extent this
6 is accurate, this picture is accurate, this is the
7 control electronics module that is claimed.

8 Q. How do you know it's not a sensor?

9 A. Well, it's a multi-sensor device, so it's
10 a bunch of sensors and because it's a bunch of
11 sensors, there is a control electronics module.

12 Q. So, how do you know that whatever you're
13 calling the multi sensor LCCAS device is in
14 communication with this transponder that you have in
15 the picture in the row above it?

16 A. Well, I know this because what is each one
17 of these, what is the transponder going to do if it
18 doesn't communicate with the control electronics
19 module. And, what is the control electronics module
20 going to do if it doesn't communicate with the
21 transponder. So, I think there is reasonable basis,
22 if not more than reasonable basis to conclude that the
23 control electronics module is in, comprises a
24 processor and is in communication with at least the

1 first transponder sensor module.

2 Q. But you can't profit because, in your
3 view, you didn't get the discovery that you needed
4 because of this motion, is that right?

5 MR. CHIPLUNKAR: Objection, form.

6 A. Well, I would not agree with this. I
7 think the discovery would have helped, maybe, but I
8 think that this is, as I said, I assumed that the
9 brochures by Piper Networks is accurate, and I think
10 there's more than a reasonable basis to conclude that
11 these claim elements are met.

12 Q. All right, sir. So, one last time, if we
13 look at the row in Exhibit 2022 that starts first
14 control electronics module, you have not identified on
15 the right that module, correct?

16 MR. CHIPLUNKAR: Objection, form, asked and
17 answered.

18 A. Yeah, I would not agree with that. I
19 think the picture on the right does identify the
20 claimed first control electronics module.

21 Q. And what is it, specifically in that
22 picture is the first control electronics module.

23 A. Well, it's the central part of the
24 picture.

1 Q. What central part of the picture?

2 MR. CHIPLUNKAR: Objection, asked and
3 answered.

4 A. There is only right next to the
5 description, I think there's only one picture and it
6 has only one central part?

7 Q. Are you talking about the light part?

8 A. Yeah, they're some kind of a box, yes.

9 Q. What about the black thing that's below
10 the white part, what is that, is that part of your
11 control electronics module or it's something else?

12 A. That --

13 MR. CHIPLUNKAR: Objection, form, objection
14 asked and answered.

15 A. I think of that black thing below, I think
16 it's not relevant because as soon as I looked at the
17 claim element, and I looked at the brochure by Piper
18 Networks and as soon as I concluded, as I said,
19 there's more than reasonable basis to conclude that
20 this is the, to the extent that the brochure is
21 accurate; of course, that this is the first control
22 electronics module, and that it comprises a first
23 processor, and that's in communication with at least
24 the first transponder sensor module. So, as soon as I

1 concluded that this claim limitation is met, I didn't
2 need to look at the black thing under the white box.
3 So, I can't tell you that.

4 Q. So, in the stuff, in the writing on the
5 right it says on track equipment have sensors on the
6 front and back of vehicles, do you see that?

7 A. The text?

8 Q. Yes, the text.

9 A. Yes, I see this.

10 Q. Okay. How do you know this isn't a sensor
11 as opposed to a control module?

12 A. And by this, do you mean the white box or
13 the black under the white box.

14 Q. Whatever you're calling the control
15 electronics module. I think you told me it's the
16 white thing, but I don't want to misquote you, I think
17 you said it's the white thing?

18 MR. CHIPLUNKAR: Objection, asked and
19 answered, argumentative.

20 A. I think this picture could be showing more
21 than the claimed first control electronics module, but
22 that's fine. As soon as I found that the first
23 control electronics module is present, then that was
24 sufficient, and I could stop there my analysis.

1 Q. But, my question, sir, is how do you know
2 that any of this is the control electronics module,
3 and it's not just sensors.

4 MR. CHIPLUNKAR: Objection, form.

5 A. Well, first, sensors are not just, I don't
6 think sensors are just completely isolated. It says a
7 multi-sensored device, and that was my reasoning.
8 And, based on the information that I had, which is
9 this brochure, I think the conclusion that I reached
10 is appropriate and its the correct conclusion.

11 Q. Take a look at page 6 of this document.
12 It starts where in the first module is operable, you
13 see that?

14 A. I do.

15 Q. All right. First of all, let me ask you
16 about, if you look on the right, it says the Helix CPU
17 uses its knowledge of which track the vehicle is
18 localized to and communicates with other Helix
19 equipped vehicles on the same track using UWB in a
20 localized fashion. You see that?

21 A. I do.

22 Q. Okay. So, in a multi track environment,
23 it's important in a collision avoidance system to not
24 only know how close one vehicle is to the other, but

1 you need to know what track they're on, right?

2 MR. CHIPLUNKAR: Objection, form, calls for
3 facts not in evidence.

4 Q. You may answer.

5 A. That is how Piper Networks describes its
6 system.

7 Q. Let me try to make it a little bit more
8 understandable. So, again, you've been in subways,
9 you've been on trains, it's not unusual for there to
10 be multiple tracks parallel to each other. And, let's
11 just call them, this is number 1, 2, 3 and 4, okay?

12 A. Okay.

13 Q. All right. So, if the first train is on
14 Track 1, it's heading north and another train is on
15 Track Number 3 and it's heading south, they're going
16 to come very close to each other, but they're not
17 going to collide, right?

18 A. Yes.

19 Q. They're going to pass each other, but
20 there's no risk of them colliding because they're on
21 different tracks, right?

22 A. Yes.

23 Q. Okay. So, just ranging from one to
24 another doesn't give you all the information you need

1 for collision avoidance. In other words, just because
2 you know there's another track within one hundred
3 meters of you doesn't tell you that there's a
4 potential for a collision if you don't know whether or
5 not they're on the same track, right?

6 MR. CHIPLUNKAR: Objection, form, outside
7 the scope of the direct.

8 A. It's not something that I investigated
9 just sitting here right now, it seems that that's
10 reasonable.

11 Q. And so, do you know whether or not the
12 Helix system uses GPS or this track localization and
13 the AURA systems using the GPS or some other purpose?

14 MR. CHIPLUNKAR: Objection, form, calls for
15 speculation, assumes facts not in evidence.

16 Q. For some other purpose?

17 A. I did not have to investigate that
18 question during my analysis.

19 Q. Okay. Would that information have been
20 important to you in determining whether or not there
21 was any copying or correspondence between the AURA
22 system and the Helix system?

23 MR. CHIPLUNKAR: Objection, form.

24 A. No, I think the answer is no, that's the

1 answer to this question, just would not impact the
2 analysis whether or not the Helix system copied the
3 AURA system.

4 Q. So, I'm asking in considering whether or
5 not the Helix system is a copy of the AURA system, did
6 you only look for point of similarity, or did you also
7 look for points of dissimilarity.

8 MR. CHIPLUNKAR: Objection, form, beyond
9 the scope of the direct.

10 A. I did not look for points of
11 dissimilarity, and I think I didn't have to, as long
12 as the point of the similarities are based on the
13 claim elements of Claims 1 and 7.

14 Q. So, let me ask you a hypothetical, sir.
15 Let's say, I don't know Westinghouse decades ago filed
16 a patent on their black and white television CRT
17 screen with one of those old big dials, okay?

18 A. Okay.

19 Q. A device for projecting images comprising
20 a screen, a receiver for receiving TV signals,
21 demodulator and the method for tuning the channel, or
22 a device for tuning the channel, okay?

23 A. Okay.

24 Q. Now, so now, let's say you see a brand new

1 LCD TV, it has all of those things. Is that enough
2 for you to conclude that the brand new TV is a copy of
3 the Westinghouse television?

4 MR. CHIPLUNKAR: Objection, form,
5 incomplete hypothetical, assumes facts not in
6 evidence.

7 A. I mean, I, it's difficult for me to render
8 an informed opinion while I'm under oath. I just need
9 to analyze this, and I can't make this analysis right
10 now.

11 Q. And, what information do you feel like you
12 don't have that you would further need to analyze?

13 A. You know, even -- I mean, I just need to
14 see the new system, I would look at the old system,
15 the -- so now we're talking about the, in the context
16 of a patent, so I need to look at the claims of this
17 patent, and the question is specifically about
18 copying, and then I see the degree of correspondence
19 between the new system and the old system. So, these
20 are some of the, I think, the considerations that will
21 go into this document for analysis.

22 Q. Do you have a flat screen TV at home?

23 A. Yes.

24 Q. Okay. So, think of the first TV that you

1 had in your house when you were a kid.

2 A. Okay.

3 Q. Compare that to the TV that you have now,
4 okay? And, imagine there was a patent on the first TV
5 that you had when you were a kid that said television
6 comprising of a screen, a receiver for receiving
7 television signals, a demodulator and a channel
8 selector. Would, under those facts, under that
9 hypothetical, would your new TV be a copy of the old
10 TV?

11 MR. CHIPLUNKAR: Objection, form, calls for
12 speculation, assumes facts not in evidence, incomplete
13 hypothetical.

14 A. First, it's, and I understand this is a
15 hypothetical, and it's okay, I have some understanding
16 of old TV sets and some understanding of newer TV
17 sets. You are asking me also to assume the existence
18 of a patent, and with a patent claim like that and, I
19 mean, I don't know, I don't know if it's reasonable
20 right now to assume such a patent. But it's, I can't
21 right now make, I can't make this copying analysis
22 right now on the fly and give you an opinion right
23 now.

24 Q. Because there's more information you'd

1 need, or you have all the information you need, it
2 would just take you time to consider it?

3 MR. CHIPLUNKAR: Objection, form, objection
4 asked and answered.

5 A. I think for both of them I certainly need
6 more time to analyze it, but I think it's possible
7 that why I would need maybe more information. So, for
8 this reason, too, I think I would need more time.

9 Q. Okay. Let's go back to your Declaration,
10 sir. Exhibit 2011. Take a look at paragraph 14.

11 A. Yes, I'm there.

12 Q. Does 802.15.3 have any relevance to this
13 case, as far as you're aware?

14 MR. CHIPLUNKAR: Objection, form.

15 A. Oh, I'm listing here my background
16 specifically on technology that is relevant to ultra
17 wide band. So, I think 802.15.3 is relevant to ultra
18 wide band.

19 Q. Do you know if it's relevant to the ultra
20 wide band issues at stake in this case?

21 MR. CHIPLUNKAR: Objection, form.

22 A. Well, 802.15.3 is relevant to ultra wide
23 band communications. You are, I think that's clear.
24 I'm not sure what you mean ultra wide band issues that

1 are relevant in this case. It's how they would be
2 different from ultra wide band in general.

3 Q. Okay. Take a look at Paragraph 25 of your
4 Declaration.

5 A. Yes, I'm there.

6 Q. See the law presumes a nexus when it shows
7 that the asserted objective evidence is tied to a
8 specific product that embody the claim features and is
9 co-extensive with them. Do you see that?

10 A. Yes.

11 Q. So, in your analysis here, are you talking
12 about the AURA product embodying the claims, you
13 talking about the Helix product embodying the claims,
14 or something else?

15 MR. CHIPLUNKAR: Objection, mischaracterizes
16 the direct testimony.

17 A. Here, the Paragraph 25 nexus is used. So,
18 the criteria for nexus, yeah, based on my
19 understanding is that it requires that the asserted
20 objective evidence of success is tied to a specific
21 product, and this would be the AURA system that
22 embodies the claimed features, and it's co-extensive.

23 Q. I'm sorry, are you talking about
24 commercial successor or are you talking about copying?

1 You said commercial success, but perhaps you misspoke.

2 A. Maybe I can clarify, I should say that
3 clearly I'm not offering any opinions about the law.
4 So, in this section I just state what my understanding
5 of the law is as it's being explained to me by counsel
6 for Metrom Rail. And the, I did say commercial
7 success, and this is a secondary consideration of
8 non-obviousness. And, the AURA system has been
9 commercially successful. And not only that, but the
10 commercial success evidence is tied to a specific
11 product, and that is the AURA system.

12 Q. Sir, I'm going to stop you there. I'm not
13 looking for new opinions there. You don't give an
14 opinion on commercial success. I'm not interested in
15 your opinion today on commercial success.

16 MR. CHIPLUNKAR: Counsel, please let him
17 complete his answer.

18 MR. WISNIA: No, I will not.

19 MR. CHIPLUNKAR: I gave your witness the
20 same consideration.

21 Q. Dr. Cooklev, I'm not interested in some
22 opinion you haven't previously given today. So, let's
23 -- my question now, sir, is when you were doing some
24 sort of nexus analysis with respect to copying,

1 focused now on copying, what test did you use to
2 determine nexus as it related to copying?

3 MR. CHIPLUNKAR: Objection, form.

4 A. Oh, I think I had explained what I did and
5 that regarding copying, I relied on the Helix system.
6 And this is why in, I compared in Exhibit 2021 the
7 Helix system to the AURA system. And, I also compared
8 in Exhibit 2023 the claims to the AURA system.

9 Q. What I'm asking, sir, is you have two
10 sections in your Declaration, one is about copying and
11 another one is about nexus. So, I'm now focusing on
12 nexus. I'm asking specifically what tests did you
13 apply in deciding whether or not there was a nexus as
14 it related to copying in this case?

15 MR. CHIPLUNKAR: Objection, asked and
16 answered.

17 A. So, in Paragraph 4--

18 Q. Right now what I want to know is what is
19 the test that you applied, I don't want to know the
20 results of test, first I want to know what is the test
21 you actually applied?

22 MR. CHIPLUNKAR: Objection, form.

23 A. Well, the test is in Paragraph 40 of my
24 Declaration. I say I was asked to compare one or more

1 of the challenged claims with the AURA system and
2 determine if the AURA system embodies the claim
3 features. And then, and ascertain the degree of
4 correspondence between the AURA system and the
5 challenged claims.

6 Q. Okay.

7 A. So, that's what I did.

8 Q. All right. And when it says you compared
9 one or more of the challenged claims with the AURA
10 system, that's the work that you did in Exhibit 2023,
11 is that right?

12 A. Yes.

13 Q. And then you determined the degree of
14 correspondence between the AURA system and the claims.
15 And again, that's still Exhibit 2023?

16 A. Yes.

17 Q. All right. Did you do any sort of
18 analysis to determine whether or not the AURA product
19 was co-extensive with Claims 1 and 7 of the 131 and
20 227 patents?

21 A. Yes.

22 Q. Where did you do that?

23 A. It is co-extensive.

24 Q. Where did you do that work?

1 A. I mean, isn't this what is described in my
2 Declaration? I think it is.

3 Q. Let me ask you a question. What do you
4 mean by co-extensive?

5 A. I mean there might be additional details,
6 additional product features beyond the claimed
7 elements, beyond the features that are described in
8 the claim.

9 Q. So, what does that mean with respect to
10 co-extensive?

11 A. I'm not sure I understand the question.

12 Q. Okay. Well, I asked you if you did any
13 sort of work to determine whether or not the AURA
14 device was co-extensive with the claims of the
15 patents, you told me yes. Now, I'm just asking what
16 does it mean for something to be co-extensive?

17 A. I think I just answered.

18 Q. I apologize.

19 A. Again, I'm answering not because I'm
20 giving you an answer, not because I'm an expert in the
21 law, but my understanding here of co-extensive is that
22 the products may have additional features beyond the
23 claimed features.

24 Q. And if it does, that means that the

1 product is or is not co-extensive with the claim?

2 A. It means that it is co-extensive with the
3 claim.

4 Q. So, let me give you an example, all right.
5 Let's say you have a claim and it says, you know, an
6 apparatus comprising elements A, B and C, okay?

7 A. Okay.

8 Q. And then you have a product, and the
9 product includes elements A, B, C, D, E, F and G,
10 okay?

11 A. Okay.

12 Q. Normally, we would say that that product
13 meets the claim because it has at least A, B and C,
14 right?

15 A. Right.

16 Q. Would we also say, or do you say that that
17 product is co-extensive with the claim?

18 MR. CHIPLUNKAR: Objection, form.

19 A. Yes.

20 Q. What would be an example where a product
21 would not be co-extensive with the claim?

22 MR. CHIPLUNKAR: Objection, form.

23 A. It's difficult to construct to give an
24 answer to a hypothetical question, but let's say if

1 the product, the claim says A, B, C and the claim has
2 A, B?

3 Q. But not C?

4 A. Not C.

5 Q. Okay. So, in your view, if a product
6 meets all the requirements of the claim, whether or
7 not it has additional features is irrelevant to
8 whether it's co-extensive.

9 MR. CHIPLUNKAR: Objection, form.

10 A. Yes.

11 Q. All right. Let me talk to you for a
12 moment about your particular conversations with Mr.
13 Marchi, okay?

14 A. Okay.

15 Q. All right. Now, first did you speak with
16 Mr. Marchi at the same time you spoke with Mr.
17 Gunther, or were those separate conversations?

18 A. They, I should say, my memory is, even
19 though it wasn't that long ago, I know. I could be
20 wrong, or maybe some things, maybe the schedule
21 changed a little bit in the last moment. I think we,
22 there were two discussions and I, at the moment, don't
23 recall if both of them were at both of these, so maybe
24 they were separate discussions.

1 Q. So, but at least one conversation they
2 were both present, is that what you're saying?

3 MR. CHIPLUNKAR: Objection,
4 mischaracterizes his prior testimony.

5 A. No, I said I do not recall if both of them
6 were present at both conversations.

7 Q. No, no, I understand what I'm saying is
8 was there at least one conversation where they were
9 both present, or you don't know?

10 A. Oh, I don't recall both -- I think I
11 recall 2 conversations, and it might have been with
12 each one of them separately.

13 Q. Okay. So, were these conversations by
14 telephone, by Zoom, how did they take place?

15 A. Via WebEx.

16 Q. Okay. And, I assume you were present, Mr.
17 Marchi and maybe Mr. Gunther was present and some
18 lawyers from McAndrews?

19 MR. CHIPLUNKAR: Objection, mischaracterizes
20 his prior testimony.

21 A. Yeah, as I say, I don't recall
22 specifically both of them being at the same meeting.
23 So, it might have been one of them at each meeting,
24 and counsel for Metrom Rail.

1 Q. Okay. And, with respect to Mr. Marchi's
2 meeting, how long did that last?

3 A. At the moment, sitting here right now, I
4 wasn't, I mean, I would say about an hour. It's
5 approximately, I mean, that's what I would say sitting
6 here right now.

7 Q. Okay. And your conversation with Mr.
8 Gunther, was that about the same period of time?

9 A. I would say yes. I don't recall it
10 specifically lasting for a noticeably longer period of
11 time, that I don't recall meeting two hours for that
12 now, I don't recall that. I would say about an hour.

13 Q. Okay. And, had you already seen either of
14 their declarations prior to the phone call?

15 A. It seems to me no.

16 Q. And, you have here, you say from my
17 conversation was Mr. Gunther, I have concluded that
18 there are no unclaimed significant features in the
19 AURA case, do you see that?

20 A. Yes.

21 Q. What does that mean?

22 A. It means that the features that drive the
23 sales of the auto collision avoidance systems are
24 what's claimed in the 131 and the 227 patents?

1 Q. Does GPS drive it or doesn't drive it?

2 MR. CHIPLUNKAR: Objection, asked and
3 answered.

4 Q. Let me clarify, GPS is in claim 7, but
5 it's not in claim 1, right?

6 A. Yes.

7 Q. So, does GPS drive demand or it doesn't
8 drive demand?

9 A. It drives demand. And specifically, I
10 mean, we cite GPS, but it is more accurately it's what
11 is claimed by claim 7.

12 Q. It's GPS in combination with the other
13 features?

14 A. That's correct.

15 Q. So, is it fair to say in your view claim 1
16 has unclaimed significant features because it doesn't
17 have GPS?

18 MR. CHIPLUNKAR: Objection, form.

19 A. The way you phrased it, like I said what
20 drives demand is what is selling, is features that are
21 claiming by Claims 1 and 7. So, if we just limit it
22 to claim 1, we'll be leaving claim 7.

23 Q. So, we focus, I'm sorry sir, were you
24 finished?

1 A. Yeah, I was finished, basically.

2 Q. Okay. So, I think we're on the same page,
3 but let me just, yes, my question is, we just looked
4 at claim 1 of the 131 patent. And, if we just look at
5 claim 1 of the 227 patent, you would agree with me
6 that those claims have unclaimed significant features
7 of the AURA CAS system, right?

8 A. Well, a statement like this could be
9 misleading because it's incomplete. We are leaving
10 claim 7 out and, in this sense, it's incomplete. I
11 agree that the features claimed by Claims 1 and 7 are
12 more than the features claimed by Claim 1 only.

13 Q. Okay. But, can you answer my question,
14 sir, which is specifically would you agree with me
15 that claims, Claim 1 of the 131 and Claim 1 of the 227
16 patent have unclaimed significant features from the
17 AURA CAS?

18 MR. CHIPLUNKAR: Objection, mischaracterizes
19 prior testimony.

20 A. I think just my answer would be exactly
21 the same that I said. I don't want to come up with a
22 misleading statement. Yes, I agree that Claim 1 is,
23 has, is less than Claim 1 plus Claim 7, that's my
24 thing with this, I could agree. But, the significant

1 features are claim, Claim 1 plus Claim 7.

2 Q. And if we don't have claim 7 in the
3 analysis, I'm not, I'm happy to put a proviso in the
4 question, okay, so let me try to do it because I see
5 where your concern is. In fact, I see your concern.
6 In your view, the significant features of the AURA
7 system that drive demand are those features in Claim 1
8 plus the GPS feature in Claim 7, correct.

9 A. Plus claim 7, yes.

10 Q. Okay. And so if we focus only on Claim 1
11 and don't look at Claim 7, you would agree with me
12 that Claim 1 has unclaimed significant features,
13 specifically the GPS features of claim 7, correct?

14 MR. CHIPLUNKAR: Objection, form.

15 A. Well, first, it's subject to what I said
16 that this could be misleading analysis. And that,
17 sure, obviously the scope of claims, Claim 1 plus
18 Claim 7. And, the scope is larger than just Claim 1.
19 So, subject to these things, I think that yeah, we
20 need to look at both Claims 1 and 7 for the
21 significant features, not just Claim 1.

22 Q. Okay. Is UWB a significant features of
23 the AURA system that drives demand for the product?

24 A. Yes.

1 Q. Claim 1 and 7 of the 131 patent do not
2 include UWB, but Claims 1 and 7 of the 227 patent do,
3 correct?

4 A. Excuse me, may I have the question
5 repeated, please?

6 Q. Yeah, just want to make sure I got it
7 right. Claims 1 and 7 of the 131 patent do not
8 require a UWB, correct?

9 A. The claim 1 recites a first radio
10 communication unit and the first antenna. And then
11 there's a second radio communication unit in the
12 second antenna. That is what claim 1.

13 Q. Yes, did we look at claim 1 of the 131
14 patent, we compare it to claim 1 of the 227 patent the
15 227 patent specifically calls out ultra wide band, and
16 the 131 patent claim 1 does not require ultra wide
17 band, correct?

18 MR. CHIPLUNKAR: Objection, form.

19 A. Yeah, and then the Claim 1 of the 227
20 patent recites a first ultra wide band unit and the
21 first antenna.

22 Q. Yeah. So, the 131 patent does not --
23 excuse me. The 131 Claim 1 does not require ultra
24 wide band, correct?

1 MR. CHIPLUNKAR: Objection, form.

2 A. It does not recite ultra wide band, yes.

3 Q. And Claim 7 of the 131 patent also does
4 not require ultra wide band, correct?

5 MR. CHIPLUNKAR: Objection form.

6 A. I mean, yeah, Claim 7 of the 131 recites
7 exactly what it recites. It doesn't mention ultra
8 wide band.

9 Q. So, you would agree with me, sir, that the
10 131 patent claims in 1 and 7 have unclaimed
11 significant features that drive demand for the AURA
12 product?

13 MR. CHIPLUNKAR: Objection, form.

14 A. Well, it's, I think it would be a
15 misleading statement because there's the 227 patent.

16 Q. The question is not about the 227 patent,
17 my question is about the 131 patent, so let me
18 rephrase it again. You would agree with me, sir, that
19 Claims 1 and 7 of the 131 patent have unclaimed
20 significant features that drive demand, correct?

21 MR. CHIPLUNKAR: Objection, form, objection
22 misstates the direct testimony.

23 A. I did not analyze Claims 1 and 7 just from
24 the 131 patent. I analyzed also, so I, as I state, I

1 analyzed Claims 1 and 7 of the 131 and 227 patents.
2 So, just trying to separate the two patents seems to
3 me would be misleading.

4 Q. Well, I disagree with you whether it's
5 misleading or not, but can you answer the question;
6 which is, do you agree, yes or no, that claims 1 and 7
7 of the 131 patent have unclaimed significant features
8 that drive demand in the AURA CIS?

9 MR. CHIPLUNKAR: Objection, misstates prior
10 testimony. Mischaracterizes the claims.

11 A. I'm not sure I will agree with that.

12 Q. Sir, you analyzed four claims in your
13 copying analysis, right?

14 A. Yes.

15 Q. Claim 1 and 7 of the 131 patent and claim
16 1 and 7 of the 227 patent, right?

17 A. Yes.

18 Q. The only claim that you believe contains
19 no unclaimed significant features that drive demand is
20 Claim 7 of the 227 patent, correct?

21 MR. CHIPLUKAR: Objection, mischaracterizes
22 his prior testimony.

23 A. First, yes, I don't agree that I've said
24 the only claim is Claim 7 of the 227 patent.

1 Q. Well, my question is not whether you said
2 it, my question is, I'm asking you now would you agree
3 with me?

4 A. Okay. Would I agree about Claim 7 what?

5 Q. I'll ask you the question again. Of the
6 four claims that you analyzed, you would agree with me
7 that only Claim 7 of the 227 patent contains no
8 unclaimed significant features that drive demand for
9 the AURA CIS system, according to your analysis?

10 A. Correct.

11 MR. CHIPLUKAR: Objection, mischaracterizes
12 his prior testimony.

13 A. No, I would not agree with this.

14 Q. So, is it your belief that each of the
15 four claims recite -- let me strike that and ask
16 again, is it your opinion that each of the 4 claims
17 that you analyzed have no unclaimed significant
18 features that drive demand to the AURA CIS?

19 A. First, Claim 7 is a dependent claim. So,
20 it inherits from Claim 1. And, as far as how you were
21 trying to analyze the significant, the claim
22 significant features, they don't have to be in just
23 one particular claim, that -- so, for these reasons, I
24 disagree with the question.

1 Q. Okay. Would you deem to be the
2 significant features that driver demand for the AURA
3 CIS system are the requirements of Claim 1 of the 131
4 patent, plus the use of UWB, plus the use of GPS as
5 recited in Claim 7, correct?

6 MR. CHIPLUNKAR: Objection, form.

7 A. Well, this is specific claim language, and
8 I don't want to, just to rephrase, I don't have a
9 rephrasal for the claim language, just maybe it's a,
10 it's some of the main bullet points, yes.

11 Q. What other significant features that drive
12 demand for the AURA system are you aware of, if any.

13 MR. CHIPLUNKAR: Objection, calls for
14 speculation.

15 A. No, but I've mapped them here in the
16 exhibits to my Declaration.

17 MR. CHIPLUNKAR: Are they different from
18 what I just said, which is Claim 1 of the 131, plus
19 UWB, plus the requirements of Claim 7.

20 Q. Anything else?

21 MR. CHIPLUNKAR: Objection, mischaracterizes
22 his testimony.

23 A. And, I said that I don't want to rephrase
24 the claim language. So, as far as bullet points,

1 these are some of the main bullet points. But, the
2 claim language includes module mounted on a first rail
3 vehicle, first transponder sensor modules, first
4 control electronics module, first user interface
5 module, second vehicle mounted module. So, these all
6 are claim elements.

7 Q. I don't think I'm excluding them in my
8 question. What I'm saying is the requirements, which
9 are all those elements you read of the 131 patent plus
10 the use of UWB, plus the requirements of Claim 7,
11 those are all what you believe to be the significant
12 features that drive demand for the AURA CIS system,
13 correct?

14 MR. CHIPLUNKAR: Objection, asked and
15 answered.

16 A. Well, the significant features that I
17 believe drive demand are what's claimed by Claims 1
18 and 7 of the 131 and 227 patents.

19 Q. And includes or excludes UWB?

20 A. Including UWB.

21 Q. Okay.

22 MR. CHIPLUNKAR: Howard, do we need to take
23 a break if you're going to go any longer or--

24 MR. WISNIA: Yeah, why don't we take a

1 break and when I come back, I'll really figure out how
2 much time I have left.

3 MR. CHIPLUNKAR: Okay.

4 MR. WISNIA: 10 minutes, come back at
5 quarter after the hour.

6 (WHEREUPON, a short break was taken)

7 Q. Let's go back on the record. Sir, you
8 understand you're still under oath?

9 A. I do.

10 Q. All right. I want to talk to you again
11 for a moment about the source material that you used
12 for the AURA system?

13 A. Okay.

14 Q. So, if I look at your exhibits, it's 2016
15 and 2019, is that fair?

16 A. You mean Exhibit 2016. I have Exhibit
17 2016, and which one?

18 Q. And 2019?

19 A. 2019.

20 Q. I'll put it in if we don't have it.

21 A. Yes, I have it.

22 Q. Those are the source materials that I used
23 for your understanding and claim charts with respect
24 to the AURA system, correct?

1 A. Yes.

2 (WHEREUPON, Exhibit No. 2019 was
3 presented to the witness)

4 Q. What is your understanding of the purpose
5 of the document like Exhibit 2019, why does that
6 document exist?

7 MR. CHIPLUNKAR: Objection, form?

8 A. Oh, this document exists to describe the
9 core technologies of the AURA maintenance of way
10 utility. Also gives a summary, describes the modules
11 and a summary of the, what they're called here, system
12 facts. That's why this document exists.

13 Q. This is a sales document or marketing
14 document, this is not like an engineering spec,
15 correct?

16 MR. CHIPLUNKAR: Objection, mischaracterizes
17 prior testimony, calls for speculation.

18 Q. You may answer.

19 A. I think my, the answer that I just gave is
20 correct, but is this a sales document, I think this
21 document supports the sales process.

22 Q. I mean this is not an engineering spec,
23 right, 2019?

24 A. There are some technical details here, as

1 I said, it summarizes the core technologies, the
2 modules, there's a summary. So now, I think this is
3 correct. Now, as far as it's not a engineering
4 document, well, maybe we need to clarify what is an
5 engineering document.

6 Q. I mean you would agree with me, sir,
7 somewhere within Metrom they have a detailed
8 engineering specification so that people can build
9 these things, right?

10 A. I think that's fair.

11 Q. Did you ask anybody to give you a copy of
12 that so you could have a deep understanding of the
13 technology of the AURA system?

14 MR. CHIPLUNKAR: Objection, form.

15 A. It's -- when I was working on this, I,
16 this just wasn't necessary.

17 Q. So, Exhibits 2016 and 2019, is that
18 information that was given to you or did you request
19 certain types of documents from your client?

20 A. I think I asked for documents describing
21 the AURA system so that I can understand it. And, for
22 the purpose of my Declaration, this is the, these are
23 the documents that I got.

24 Q. Did you ask for any more detailed

1 information about the AURA system, or you felt that
2 you had sufficient information to do your job?

3 MR. CHIPLUNKAR: Objection, form.

4 A. You know, I felt this was sufficient.

5 Q. If we go back to your Declaration, take a
6 look at Paragraph 39?

7 A. Yes, I'm there.

8 Q. All right. You say here there is a high
9 degree of correspondence between the claims of Helix
10 CIS, you see that?

11 A. Yes.

12 Q. Does that mean identical or what is high
13 degree of correspondence mean?

14 MR. CHIPLUNKAR: Objection, form.

15 A. Well, I think high degree of
16 correspondence is sufficiently clear here, and I,
17 Exhibit 2022 shows a high degree of correspondence
18 between the claims and the Helix system.

19 Q. What's the difference between
20 correspondence and a high degree of correspondence?

21 MR. CHIPLUNKAR: Objection, form.

22 A. I think there is some difference. High
23 degree of correspondence generally means strong
24 correspondence.

1 Q. Is there any difference between high
2 degree of correspondence and complete correspondence?

3 MR. CHIPLUNKAR: Objection, form.

4 A. So, is the question whether there's any
5 difference between these?

6 Q. Sure, yes, sir?

7 A. There might be some difference. For the
8 purpose of my Declaration, I think high degree of
9 correspondence is sufficient for the purpose of my
10 Declaration. It establishes more than reasonable
11 grounds. So, I think given the complete degree of
12 correspondence, but based on the, again, the for the
13 purpose of my Declaration, I, this is how I phrased it
14 as high degree of correspondence.

15 Q. So, the phrase sounds to me when you say
16 high degree of correspondence means that there's a lot
17 of similarities but maybe there's some differences.
18 Did you recognize any differences between the Helix
19 CIS and the claims of 131 and 227 patents?

20 MR. CHIPLUNKAR: Objection,
21 mischaracterizes his prior testimony.

22 A. I did not see any differences, but I did
23 not use high degree of correspondence in the sense
24 that -- well, there's a lot of similarities, but there

1 may be some differences. I don't think there are any
2 differences between the claims and the Helix CIS.

3 Q. Sir, do you feel like you've had
4 sufficient time to do a complete and thorough and
5 official analysis in this case before you executed
6 your Declaration?

7 MR. CHIPLUNKAR: Objection, form.

8 A. Yes, for the purpose of my Declaration,
9 yes.

10 Q. What additional steps, if any, would you
11 have taken if you had more time?

12 MR. CHIPLUNKAR: Objection, calls for
13 speculation.

14 A. I mean, just, I don't know how to answer.
15 I think for the purpose of my Declaration, I think it
16 was adequate. Now, if I had more time, what other
17 things would I have done? I mean, the things that
18 counsel for Metrom rail would ask me.

19 MR. WISNIA: Okay. All right, sir. I have
20 no further questions. Thank you for your time. I
21 pass the witness.

22 MR. CHIPLUNKAR: Howard, can we break for
23 maybe 5 minutes, I just want to look at some notes I
24 took here?

1 MR WISNIA: Okay. You want to come back at
2 35 after, or you need more time than that.

3 MR. CHIPLUNKAR: 4:40.

4 MR. WISNIA: Okay. See you then. Off the
5 record.

6 REDIRECT EXAMINATION

7 BY MR. CHIPLUNKAR:

8 Q. Professor Cooklev, do you recall being
9 asked a question, a series of questions regarding
10 Claim 1 of the 131 patent?

11 A. Yes.

12 Q. Specifically, do you recall questions
13 being asked regarding Claim 1 and whether Claim 1
14 covered UWB?

15 A. Yes.

16 MR. WISNIA: Objection, misstates the
17 testimony.

18 Q. Do you have the 131 patent in your packet?

19 A. Yes, I have it here.

20 Q. Could you go to Claim 1 of the 131 patent?

21 A. Yes, I'm looking at Claim 1 of the 131
22 patent.

23 Q. So, Claim 1 is set forth in column 30
24 beginning at line 44, is that correct?

1 A. Yes.

2 Q. If you could direct your attention to
3 somewhere on line 48 of column 30. Let me know when
4 you're there.

5 A. I'm there.

6 Q. Okay. Do you see the phrase first
7 transponder sensor module operable to send and receive
8 data wirelessly?

9 A. Yes.

10 Q. Do you see the phrase mobility send and
11 receive data wirelessly?

12 A. Yes.

13 Q. Is UWB a wireless technology?

14 A. Yes.

15 Q. So, does Claim 1 cover a device that uses
16 UWB to send and receive data wirelessly?

17 A. Yes.

18 Q. Professor Cooklev, were you asked to
19 perform an invalidity analysis in this matter?

20 A. No.

21 Q. Were you asked to perform an infringement
22 analysis in this matter?

23 A. No.

24 MR. CHIPLUNKAR: I pass the witness.

RECROSS EXAMINATION

BY MR. WISNIA:

Q. Sir, I hope there wasn't a misunderstanding. We talk about the 131 patent. In your view, the 131 patent Claim 1 covers UWB, but it does not require UWB, correct?

A. The words UWB are not in the claim, but the claim recites send and receive data wirelessly or, in other words, covers wireless communication. And, there's also a radio communication unit.

Q. Sure, but there's all sort of frequencies that can be used not limited to UWB, correct?

A. I mean, if you mean all technologies, there could be.

MR. WISNIA: Okay. Thank you sir. I'm sorry, one additional.

Q. You say you were not asked to do an infringement analysis. Your claim chart with respect to the Helix system, were you trying to determine whether or not the claims of the 131 and the 227 patent cover the Helix system or not?

A. I think the answer to that, I'd say yes, I was trying to determine whether the claims covered the Helix system. And, there is a claim chart, so I

1 produce the claim chart as part of the exhibits, but
2 this is not a, my Declaration is not an infringement
3 report.

4 Q. So, your claim charts comparing the Helix
5 to the claims of the 131 and 227 patent are not a
6 rigorous analysis to determine whether or not in fact
7 those claims cover or infringe about the Helix system,
8 correct?

9 MR. CHIPLUNKAR: Objection,
10 mischaracterizes his prior testimony.

11 A. I wasn't asked to submit an infringement
12 report, so I was asked to do a Declaration, which is
13 what I did.

14 MR. WISNIA: I have no further questions.

15 COURT REPORTER: Signature?

16 MR. CHIPLUNKAR: The Professor will read and
17 sign.

18 (WHEREUPON, the deposition was concluded
19 at 4:42 p.m.)

20 * * * *

1 STATE OF ILLINOIS)

2)SS

3 COUNTY OF C O O K)

4

5 CERTIFICATE

6

7 I, VERNETTA H. MCCREE, a Notary Public within and
8 for the County of Will, State of Illinois, and a
9 Certified Shorthand Reporter of said state, do hereby
10 certify;

11 That previous to the commencement of the
12 examination of the witness, the witness was duly sworn
13 to testify the whole truth concerning the matters
14 herein;

15 That the foregoing deposition transcript was
16 reported stenographically by me, was thereafter
17 reduced to typewriting under my personal direction and
18 constitutes a true record of the testimony given and
19 the proceedings had;

20 That the said deposition was taken before me at
21 the time and place specified;

22 That I am not a relative or employee or attorney
23 or counsel, nor a relative or employee of such
24 attorney or counsel for any of the parties hereto, nor

1 interested directly or indirectly in the outcome of
2 this action.

3 IN WITNESS WHEREOF, I do hereunto set my hand of
4 office at Crete, Illinois this 10th day of November,
5 2023.

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10 VERNETTA H. MCCREE

11 Notary Public, Will County, Illinois

12 My commission expires 08/15/2026
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