

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

3 -----

4 SMA SOLAR TECHNOLOGY AMERICA, LLC,

5 Petitioner,

6 vs.

7 TIGO ENERGY, INC.

8 Patent Owner.

9 -----

10 U.S. Patent No. 8,823,218

11 Case No.: IPR2023-01184

12

13 REMOTE VIDEOCONFERENCE DEPOSITION OF
14 RANDY DUNTON

15

16

17 April 5, 2024

18 9:35 a.m.

19

20

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22

23

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25

Michele Koss, RMR, RPR



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APPEARANCES OF COUNSEL

On Behalf of the Petitioner

PHILIP W. MARSH, ESQUIRE
JOHN R. SABACINSKI, ESQUIRE (Chicago Office)
ARNOLD & PORTER
3000 El Camino Road
Five Palo Alto Square, Suite 500
Palo Alto, California 94306-3807
(650) 319-4500
Fax (650) 319-4700
philip.marsh@arnoldporter

On Behalf of the Patent Owner

HEATH J. BRIGGS, ESQUIRE
GREENBERG TRAURIG, LLP
1144 15th St. Suite 3300
Denver, CO 80202
303-685-7418
Fax: 303-572-6540
BriggsH@gtlaw.com

Also present: Heidi Stuart, Videographer



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DEPOSITION OF RANDY DUNTON

April 5, 2024

THE VIDEOGRAPHER: We are now on the record. The time is 9:35 a.m. Pacific standard time on April 5, 2024. This begins the videoconference deposition of Randy R. Dunton taken in the matter of SMA Solar Technology America, Inc. versus Tigo Energy, Inc. filed in the United States Patent and Trademark Office before the Patent Trial and Appeal Board. Case number of which is IPR2023-01184.

My name is Heidi Stuart, and I am your remote videographer today. The court reporter is Michele Koss, and we are representing Esquire Deposition Solutions.

As a courtesy, if everyone who is not speaking, would you please mute your audio and just remember to unmute when you are ready to speak.

At this time will everyone present please identify themselves and state whom you represent, after which the witness will be sworn.

MR. BRIGGS: This is Heath Briggs. We represent the Patent Owner Tigo Energy, Inc.

MR. MARSH: And this is Philip Marsh from Arnold & Porter. We represent the two SMA parties, SMA



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1 Solar Technology AG and SMA Solar Technology America
2 LLC, and I am here also today on behalf of the witness.
3 With me today is John Sabacinski from our firm as well.

4 MR. DUNTON: My name is Randy Dunton. I am
5 here as the petition writer and -- I am sorry -- for the
6 declaration and I am supportive of SMA.

7 RANDY DUNTON,
8 being first duly sworn in the above cause, was examined
9 and testified as follows:

10 EXAMINATION

11 BY MR. BRIGGS:

12 Q Good morning, Mr. Dunton.

13 MR. BRIGGS: Am I ready to go, court
14 reporter?

15 THE COURT REPORTER: Yes.

16 Q Good morning. How are you?

17 A Good morning, Mr. Briggs. Good.

18 Q Great. So do you understand that you are
19 here for a deposition in connection with an inter partes
20 review proceeding before the United States Patent and
21 Trademark Office?

22 A Yes.

23 Q Okay. And, for the record, that matter, and
24 the court reporter already said it, is IPR2023-01184.

25 So if I refer to the IPR, you understand



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1 that I am referring to IPR2023-01184? Is that okay?

2 A Yes. Yes.

3 Q Great. And that IPR relates to U.S. Patent
4 No. 8,823,218.

5 So I if I say the '218 patent, you will know
6 I am referring to 8,823,218?

7 A Yes.

8 Q So I know you have been deposed before. We
9 were on the other side on a couple of different IPRs,
10 but how many times have you been deposed?

11 A This will be the second time.

12 Q Second time. Okay. And so both of your
13 depositions then again have therefore been in connection
14 with the inter partes review proceedings before the
15 Patent and Trademark Office?

16 A Yes.

17 Q Okay. So since you have been deposed
18 before, you probably understand how this works. I am
19 going to ask you a bunch of questions. You are going to
20 answer my questions. Your counsel will have a chance to
21 object. Unless your counsel instructs you not to answer
22 the question, you must answer the question.

23 As part of that, the court reporter is going
24 to transcribe everything that we say and so it is
25 important that we don't talk over each other so there is



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1 a clear record.

2 So what I am going to try to do the best on
3 my side is wait until you are finished and I will
4 continue; and I would appreciate it if you can try to
5 wait until I finish my question before you start to
6 answer.

7 Does that sound okay?

8 A Yes, it does.

9 Q Great. The second thing is I am going to do
10 my best to ask a clear question but, if you do not
11 understand my question, can you please let me know?

12 A I will.

13 Q So what that means is, if you answer my
14 question, I am going to assume that you understood the
15 question. Okay?

16 A Yes.

17 Q So as for breaks, I typically take a break
18 about every sixty minutes.

19 Is that going to work for you?

20 A That will work, yes.

21 Q Okay. And all I ask is that if you need to
22 go on a break before I suggest a break, that you just
23 answer the question, if one is pending.

24 Is that okay?

25 A Yes, so long as the answer is not too long,



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1 I guess.

2 Q Okay. So we will figure that out. Let's
3 hope it does not happen. It is typically not
4 appropriate to go take a break in the middle of a
5 question. Okay?

6 A Understood.

7 Q Okay. I am sure counselor already told you
8 this, but during breaks you are not allowed to talk to
9 counsel about the case.

10 Is that understood?

11 A I do understand that.

12 Q Okay. You are also under oath so you are
13 required to testify truthfully today. Of course you
14 understand that I am sure?

15 A Yes.

16 Q So just on that basis, is there any reason
17 you cannot testify truthfully today?

18 A There is no reason.

19 Q Okay. So you are not on any medications we
20 should be aware of or anything like that?

21 A No.

22 Q Okay. As Mr. Marsh indicated at the
23 beginning, this is a remote deposition. We have heard
24 on the record that you are in Phoenix, Arizona.

25 Can you please describe where you are at in



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1 Phoenix, Arizona?

2 A I am at my residence.

3 Q Okay. And is anybody else in the room with
4 you?

5 A Not a person. I have a dog here with me.

6 Q Okay. Fair enough. I am not worried about
7 your dog.

8 Beside your computer that you have running
9 now, do you have any electronics available?

10 A I have a phone in front of me. I can turn
11 that off, if you need me to.

12 Q I think silencing it and agreeing not to use
13 it during the deposition would be fine with me. I
14 understand that people have families and something comes
15 up. I get it. Let us try to avoid using that, if we
16 can.

17 A Understood. It is in silence now.

18 Q Great. I think Mr. Marsh indicated that you
19 have paper copies of some documents from the
20 proceedings; is that correct?

21 A I do. It is here unmarked.

22 Q Okay. And can you just identify what is in
23 that binder in terms of either exhibit numbers or a
24 series of exhibit numbers?

25 So, for instance, do you have Exhibit



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1 numbers 1001 through --

2 A Correct.

3 Q Go ahead, please.

4 A Sorry. I have Exhibits 1002 through 10.

5 Q 1002 through 10?

6 A Correct.

7 Q In that binder?

8 A Yes.

9 Q Do you have Exhibit 1001 in that binder?

10 A Not in the binder, but I do have an
11 electronic copy.

12 Q Okay. For papers copies you have 1002
13 through 110?

14 A Correct.

15 Q And for electronic copies you have Exhibit
16 1001; is that right?

17 A Correct.

18 Q And do you also have exhibits -- let me
19 check this. I am a paper guy myself. I have to check
20 this real quick. Give me a second, please.

21 For electronic copies, do you have copies of
22 Exhibits 1011 through 1025?

23 A I would have to check the numbers.

24 MR. MARSH: I might be able to help a little
25 bit. I believe the witness at least has 1014 through



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1 1021. Those are the file histories.

2 A I am looking right now.

3 Q Take your time and just let us know what you
4 have electronically. I am just trying to establish what
5 I may need to get to you during the proceeding.

6 MR. MARSH: I mention that because I was not
7 sure if those are labeled with the exhibit number.

8 A They are not labeled with the exhibit
9 numbers. I can list them, if that helps.

10 Q No, I think we are good right now kind of
11 understanding what documents you have on your computer.

12 Are there any other documents besides the
13 Tigo IPR that we are discussing accessible to you right
14 now on your computer?

15 A So I have the file history. Again, these
16 are listed -- so these are listed and I have what else
17 here? I have the '218 patent as I mentioned. The
18 prosecution history of the '218 as I also mentioned
19 earlier.

20 Q Okay.

21 A That is it.

22 Q Go ahead. I am sorry.

23 A My declaration. Let us take a look here.
24 So under material reviewed in my declaration on page 4.

25 Q I see that.



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1 A Those are the exhibits starting with the
2 '218 patent, 1001.

3 Q So those are some of the exhibits that are
4 in the proceeding, and I think if you have electronic
5 copies of those, I think we should be okay. If you need
6 additional documents, I will get you copies. We can
7 start with that understanding, if that works for you?

8 A Yes. These are available to me.

9 Q Great. I asked a slightly different
10 question though.

11 Do you have any other documents outside of
12 this proceeding at your fingertips on your computer?

13 A Not at my fingertips, no. I just have a
14 very particular folder, and I keep everything in one
15 folder.

16 Q I ask that while we are doing this that you
17 stick to the documents electronically available in the
18 proceeding and we don't go to other documents; otherwise
19 I will ask to see copies of those documents.

20 Do you understand?

21 A I understand.

22 Q So how did you prepare for your deposition
23 today?

24 A I started last weekend just reading through
25 the patents one more time and carefully reading my



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1 declaration a few more times. I had a few questions
2 and I worked with Philip to resolve those, and I
3 just -- because this was a year ago that this was
4 written, roughly last summer. So I needed to refresh
5 my memory so I could answer within a reasonable amount
6 of time.

7 So I just refreshed my memory over the last
8 week. Usually about two hours a day. And then
9 yesterday we had a meeting and I spent probably closer
10 to ten hours preparing for this.

11 Q That is very helpful. Thank you.

12 Beside counsel, did you discuss the case
13 with anybody?

14 A No.

15 Q Did you examine any documents outside of the
16 proceeding in preparing for the deposition today?

17 What I mean by outside the proceeding is
18 other than those documents already included in the
19 exhibits that we have been discussing?

20 A Nothing outside other than, I guess, I am
21 not sure these are included here. I received two other
22 documents, the scheduling order and the decision for
23 granting institutional inter partes review. These are
24 the additional two documents which I received, and I
25 read through these as well.



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1 Q Understood.

2 Okay so let's go ahead and take a look at
3 your declaration.

4 Would you please open Exhibit 1002, please?

5 A It is open.

6 Q Great. So this is a copy for the record of
7 Exhibit 1002 from the '218 patent IPR, correct?

8 A Correct.

9 Q And do you recognize this document?

10 A Yes.

11 Q What is it?

12 A A declaration.

13 Q What kind of declaration?

14 A Support of an IPR for a particular patent,
15 '218.

16 Q Okay. Is it okay if I refer to Exhibit 1002
17 as your declaration or your report or similar during the
18 proceeding today?

19 A That will work.

20 Q Okay. So if I do that, you will understand
21 that I am referring to Exhibit 1002?

22 A Yes.

23 Q Great. Thank you.

24 Can you please go to page 122, which is the
25 very last page of your declaration. I guess it is not



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1 the very last page but it is pretty close.

2 A The conclusion, yes, I am there.

3 Q So right below that you have a signature. I
4 think it is your signature. It says by Randy R. Dunton;
5 is that correct?

6 A That is my signature, yes.

7 Q And it is dated July 10, 2023, correct?

8 A Yes.

9 Q And so you remember signing this declaration
10 on that date, right?

11 A I do.

12 Q Great. So if you can then go and open your
13 CV, which is Exhibit 1003.

14 Do you prefer to call this a CV or resume?
15 I am not sure what you would call it.

16 A CV is fine. It is open.

17 Q Great. I don't really see a date on this
18 other than I know it was submitted.

19 Is this a generally current version of what
20 you would call your CV?

21 The reason that I am asking is because it
22 says Hawkins Group 2012 to present. It does not have a
23 date. I don't know what present means. That is why I
24 am asking, is this the current version?

25 A It is the current version and I am



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1 currently working for Hawkins Design Group.

2 Q If you can go to page 2 then of your CV,
3 which is Exhibit 1003, and toward the bottom there is a
4 section called Patents.

5 Do you see that?

6 A Correct.

7 Q It says over 38 patents.

8 Do you see that?

9 A Yes.

10 Q What do you mean by "over 38 patents"?

11 A I have lost track over the years of how
12 many that I have. So these are the ones that I was
13 able to find and search again. I was not -- I didn't
14 have an exact number, so that is why I listed the over.

15 Q So over 38 patents means -- I will try to
16 understand.

17 When you say over 38 patents, you mean
18 patents that you could locate that have your name on
19 them?

20 Is that what you meant when you say over 38
21 patents?

22 A Yes. Correct.

23 Q And did you determine whether those 38
24 patents are in the same family or are all different
25 patent families?



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1 A Can you explain the definition of families?

2 Q Sure. So it says you are on the Intel
3 Patent Committee here, correct?

4 A Yes.

5 Q What is your understanding of a patent
6 family?

7 A My understanding would be within a realm of
8 a certain technology. So, for example, electronics
9 versus a design patent. Maybe software versus
10 hardware. That is my understanding of family.

11 Q Okay. That is one type of understanding.
12 Generally when I say a patent family, I mean a family
13 that claims priority through a series of applications.
14 They are all in the same family because they all relate
15 to one application or priority chain.

16 When I say patent family in the question, I
17 am asking, of the 38 patents that you identified, are
18 they separate patent families or you are not sure
19 whether they are separate patent families?

20 A Many of them are completely unrelated to
21 each other. I will answer, I guess, in the terms that
22 I understand.

23 So most of them are unrelated. A few of
24 them are design based. Most of them are technology
25 based. A lot of them are based on digital cameras.



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1 There are then a few that are my own personal patents
2 through Helios Engineering and those are directly
3 related to solar technology.

4 Q So thank you. That is helpful.

5 When you say design based, what do you mean
6 by design based patents?

7 A Design, for example the way a digital
8 camera looks.

9 Q Are you speaking like design patents in
10 terms of ornamental features then? Is that what you
11 mean by design?

12 A Exactly.

13 Q And tech based, can you explain what you
14 mean by tech based patents?

15 A Technology would be an architecture of a
16 computer. It would be a method for a sensor to be read
17 or a particular way of processing information.

18 Q And these would fall in the bucket of not
19 design patents, these would be what we understand in the
20 field to be called utility patents; is that what you
21 mean by tech patents?

22 A Yes.

23 Q Okay. And then you also said you have your
24 own personal patents.

25 Can you just explain what you mean by



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1 personal patents? I don't think that I caught all of
2 that.

3 A So let me point to my resume here.

4 Q When you say your resume, you are in Exhibit
5 1003?

6 A Correct. If you look at the first page,
7 you will see that there is a company called Helios
8 Focus, Phoenix, Arizona, 2009 to present?

9 Q Yes, I see that.

10 A It is a two-person company. I am one of
11 the founders and my title was CTO, chief technology
12 officer. And in this particular company we developed
13 intellectual property, and these are the ones that I
14 meant by personal. I own the company Helios Focus and
15 in that sense it is personal as opposed to Intel which
16 is not -- these are no longer my patents. They were
17 signed over to Intel.

18 Q Understood. So you are thinking more of an
19 ownership thing?

20 A Correct.

21 Q Where my personal patents are ones that I
22 own because I don't have an obligation to assign those
23 to somebody else because I am not working for them; is
24 that correct?

25 A Yes.



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1 Q Okay. So in Helios Engineering LLC it also
2 says 2009 to present, correct?

3 A Yes.

4 Q So does that company still exist?

5 A Both companies still exist.

6 Q What is both companies? I am sorry. I
7 don't follow.

8 A Both Helios Engineering and Helios Focus,
9 both of them exist today.

10 Q There is two here. I see now. Okay. You
11 have mentioned that you are or were the chief technical
12 officer for both companies?

13 A So I am the CTO for Helios Focus and Helios
14 Engineering, I guess I am the chief executive officer
15 in that company. It is a one-man company, myself. As
16 you can see, the roles that I play there.

17 Q Okay. Okay. Understood.

18 Can you please go back to Exhibit 1002 and
19 you were very close when you are talking about materials
20 considered? Go to page 4 and look at paragraph 14 for
21 me, please.

22 A Yes. Would you like me to read it?

23 Q Sure. You don't have to read it out loud.
24 I would like you to understand what the content is.

25 A Yes. So it says 31 utility patents.



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1 Q So that is my question. So there is 31 here
2 and there is 38 in the CV. I am not sure that I follow
3 why.

4 A This was checked by the law firm I am
5 working with for SMA and they were able to find 31. So
6 I left it at that.

7 Q Okay. And then you say, including four
8 patents in the field of photovoltaic and photovoltaic
9 safety systems.

10 Do you see that language?

11 A Yes, I do.

12 Q And then you have four patents listed right
13 after that, correct?

14 A Yes.

15 Q Why was it important for you to list these
16 four patents in your declaration?

17 A They are directly related.

18 Q I am not sure. Directly related to what?

19 A To the declaration.

20 Q Okay. How are they directly related to the
21 declaration?

22 A Safety shut down systems.

23 Q Safety shut down systems. So these four
24 patents are in the field of photovoltaic safety shut
25 down systems?



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1 A Correct.

2 Q Okay. Are any of the other 31 patents that
3 you have in the field of photovoltaic safety shut down
4 systems?

5 A No.

6 Q Okay. At the end of paragraph 14 you say,
7 and three design patents.

8 Do you see that?

9 A Correct.

10 Q Is there a particular reason you decided it
11 is important to note the three design patents for this
12 declaration?

13 A As we discussed earlier, they are more the
14 shape of a digital camera. They are not, as you put
15 it, the utility patent. I tried to distinguish between
16 the different types of patents that my name is on.

17 Q So maybe what I understand, tell me if I am
18 misunderstanding your paragraph 14, you say, I have 31
19 utility patents. Four of them are photovoltaic safety
20 systems. I also have three design patents.

21 Is that the proper way that I should
22 understand paragraph 14?

23 A Yes.

24 Q Okay. Thank you.

25 Let's go back to your CV, which is Exhibit



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1 1003, please.

2 A Okay. There.

3 Q And if we go back to the second page under
4 patents, it says, Serve as expert witness in patent
5 litigation (declaration and deposition).

6 Do you see that?

7 A Yes.

8 Q So we established at the beginning that you
9 have only been deposed twice and this is your second
10 deposition, correct?

11 A Yes.

12 Q So when you say served as expert witness in
13 patent litigation, declaration and deposition, how many
14 times have you served as an expert witness for
15 declarations and depositions?

16 A This will be the second time.

17 Q Okay.

18 A I have additional legal work that I have
19 done related to solar which is not patent related.

20 Q Okay. So for non-patent work like -- is that
21 like --

22 A Expert witness.

23 Q Or product designs or something like that?

24 A An example would be an insurance case where
25 a photovoltaic system was being debated on value. And



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1 so I had to provide my input on to how much the various
2 system components are worth after a certain amount of
3 time.

4 Q Okay. So maybe that answers my question,
5 but I am not sure.

6 If you go to page 1 of your CV, under the
7 Helios Engineering, LLC heading you have expert witness
8 in solar and intellectual property or other legal
9 matters, declaration, deposition.

10 Do you see that?

11 A Yes.

12 Q Is that different from what you have on the
13 back or are those the same thing, should I take those to
14 be the same thing?

15 A They are to be the same thing.

16 Q So when you are working as a role, in your
17 role as an expert witness such as this proceeding, are
18 you working as a Helios Engineering, LLC employee?

19 A Yes.

20 Q Thank you. That is very helpful. I only
21 have one more question on your CV. It says Hawkins
22 Design Group 2012 to present.

23 Do you see that?

24 A Yes.

25 Q Can you tell me what Hawkins Design Group



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1 is?

2 A An engineering consulting firm for
3 electrical power systems.

4 Q Is that based in Phoenix?

5 A Phoenix metro, yes.

6 Q Are you still a PV system project developer
7 and designer?

8 A Among other things.

9 Q Do you do any intellectual property work for
10 Hawkins Design Group?

11 A No.

12 Q Okay. All right. So let's go back to your
13 declaration, which is Exhibit 1002, and let's again go
14 to page 4 and your materials considered, which is in
15 Section 3. If you can just let me know when you are
16 there.

17 A Materials reviewed. I am there.

18 Q Okay. Great. If you can just briefly look
19 at paragraph 16 and let me know when you are ready.

20 A I am there. I am ready.

21 Q Great. And so it says, In forming my
22 opinions expressed in this declaration I have reviewed
23 the following materials.

24 And you have a bullet point with a list of a
25 bunch of materials; is that right?



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1 A That's correct.

2 Q So the first one, for instance, is the '218
3 patent that we already established we are going to call
4 '218 patent, Exhibit 1001, okay?

5 A Yes.

6 Q The second one is prosecution history of
7 that patent, which is Exhibit 1004, correct?

8 A Correct.

9 Q And then you have a series of references,
10 Exhibits 1005 through 1008. The first one is U.S.
11 Patent No. 8,531,055, Adest.

12 Do you see that?

13 A Yes.

14 Q So if I say, if I refer to Adest or the
15 Adest reference today, you are going to understand that
16 I am referring to Exhibit 1005?

17 A Yes. We can also use '055.

18 Q I think that might be confusing for me
19 because the exhibit is also 1005 so I will stick with
20 Adest on that one.

21 A Thank you.

22 Q So let us go with Adest or the Adest
23 reference or something similar, if that is okay with
24 you?

25 A Yes.



1 Q Okay. If we go to the next page, at the top
2 we have another U.S. Patent 5,054,023, Kronberg, which
3 is Exhibit 1006.

4 Do you see that?

5 A Yes.

6 Q So if I refer to Kronberg you know what I am
7 referring to, Exhibit 1006?

8 A Yes.

9 Q Great. Again, same exercise. We have U.S.
10 Patent No. 6,650,031 to Goldack.

11 Do you see that?

12 A Yes.

13 Q So if I refer to Goldack you know that I am
14 referring to Exhibit 1007 or U.S. Patent No. 6,650,031?

15 A Yes.

16 Q Great. And then we have a French patent
17 application which is FR2894401A1 to Moine.

18 Do you see that?

19 A Yes.

20 Q And that is Exhibit 1008, correct?

21 A Yes.

22 Q So if I refer to Moine, you will know that I
23 am referring to Exhibit 1008?

24 A Yes.

25 Q Great. I will skip the dictionary.



1 Then we have a bunch of file histories
2 listed. It appears to be eight file histories.

3 Can you please confirm that?

4 A That is correct.

5 Q Okay. So this time we have a little
6 curveball, it says, The file history of U.S. Patent
7 Application 12/254780 and it says the '780 application,
8 right?

9 A This is the second bullet after the
10 dictionary, I mean right after the dictionary?

11 Q It is the first one right after Exhibit 1009
12 on page 5, correct?

13 A Yes.

14 Q This time I don't see an exhibit number. Do
15 you?

16 A Not in the declaration.

17 Q Okay. Do you know why that sometimes in
18 your materials considered section you have exhibit
19 numbers listed but in other instances, such as with the
20 file histories, you do not have exhibit numbers listed?

21 A It is not referenced in the declaration.

22 Q I think if we go to page 7 and we look at
23 paragraph 20 -- can you please look at that table?

24 A Yes.

25 Q So if you look at that table and then you



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1 cross-compare it against your bullet point list.

2 A Yes, it is referenced here. I stand
3 corrected.

4 Q Okay. Again, do you know why the actual
5 exhibit numbers are not included in the bullet point
6 list that you have on pages 5 and 6 of your declaration?

7 A I couldn't answer that. I am not sure why
8 it would not be considered an exhibit. At this point I
9 don't know why they are not exhibits.

10 Q They are exhibits in the proceeding. They
11 were filed by the law firm with the petition and your
12 declaration. The oddity to me is that there is no
13 exhibit numbers. I am not sure why that is when you
14 have exhibit numbers for the other document.

15 Do you have an answer to that?

16 A I don't have a definitive answer. I can
17 probably speculate though.

18 Q That is okay. I am not a big guy on
19 speculation.

20 The good news is we have all of these
21 documents electronically for you. What I will do then
22 to help you out as we go through the proceeding, if I
23 need you to look at one of these documents, I will tell
24 you what the exhibit number is and then I will tie that
25 to the application number so we make sure we are working



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1 off the same document.

2 Is that okay?

3 A That will work.

4 Q Great. So if we can go to page 4 of your
5 declaration and look at paragraph 15 and just let me
6 know when you have finished.

7 A I have read paragraph 15. I am ready.

8 Q Great. So materials reviewed, it says,
9 Opinions in this declaration are based on the documents
10 that I reviewed, your professional judgment, your
11 experience, education, knowledge regarding inventions,
12 electrical engineering, solar PV power plants, computer
13 science, consumer electronic products, and control
14 system design in paragraph 15, right?

15 A Yes.

16 Q Below, as we noted, you have a bunch of
17 materials listed, correct?

18 A Yes.

19 Q Are these the only documents you reviewed
20 when preparing your declaration?

21 A That is correct.

22 Q Okay. And if you can you go to paragraph 17
23 of your declaration which is on page 6, please. If you
24 can just read that and let me know when you are
25 finished. Thank you.



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1 A I have finished.

2 Q Okay. So at this time you say, I have also
3 considered the general knowledge that I have.

4 Do you see that where you say that?

5 A Yes.

6 Q Okay. Did counsel explain to you how
7 evidence requirements work in inter partes review
8 proceedings?

9 MR. MARSH: Objection. Form. Let me just
10 caution the witness not to reveal the substance of our
11 communications.

12 You can answer that question yes or no if
13 you want, but I would ask you not to reveal the
14 substance of our communications.

15 A Can you restate the question, please?

16 Q Sure. This is an inter partes review
17 proceeding that you put in a declaration, correct?

18 A Yes.

19 Q And as part of that you have been hired by
20 Petitioner to provide your opinions, correct?

21 A Yes.

22 Q So the reason for that is the Patent Office
23 requires evidentiary support for the Petition that was
24 submitted by counsel.

25 Do you understand that?



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1 A Yes.

2 Q Okay. So as part of the inter partes review
3 proceeding the allowable evidence is generally
4 restricted to prior art patents and publications.

5 Do you understand that?

6 MR. MARSH: Objection. Form.

7 A I understand.

8 Q Okay. So what that means is it is generally
9 inappropriate to solely rely on knowledge, skills in the
10 art without evidentiary support to form your opinions.

11 Do you understand that?

12 MR. MARSH: Objection. Form.

13 A I guess I struggle with the question in the
14 sense that without experience, evidence by itself would
15 be kind of useless.

16 Q Okay. So I understand what you are saying.
17 We can move on.

18 In fact, if counsel would not mind, I had a
19 little too much coffee. Can we take an early break this
20 time and come back in ten minutes?

21 Is that okay with you, Mr. Dunton?

22 A Yes, it is.

23 MR. BRIGGS: Great. I will see everybody
24 back in about ten minutes.

25 THE VIDEOGRAPHER: We are going off the



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1 record at 10:15 a.m. Pacific standard time.

2 (Recess was taken.)

3 THE VIDEOGRAPHER: We are back on the record
4 at 10:24 a.m. Pacific standard time.

5 Go ahead, Counsel.

6 Q (BY MR. BRIGGS) Welcome back, Mr. Dunton.

7 How are you doing?

8 A Good. Thanks for the break.

9 Q Okay. My pleasure. If you can please look
10 at page 6 of your declaration. There is a section that
11 begins with Priority.

12 Do you see that?

13 A I do.

14 Q So if we go down to paragraph 19 there is a
15 sentence that starts, The '218 patent issued from
16 application number, and it goes on to list a series of
17 applications.

18 Do you see that?

19 A I do.

20 Q If we turn the page and go to page 7 under
21 paragraph 20, there is a table.

22 Do you see that?

23 A Yes.

24 Q Again, as we discussed, there is eight
25 patent applications here listed in this table.



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1 Do you see that?

2 A Yes.

3 Q And then on the far left side of that table
4 it says, Priority claim.

5 Do you see that?

6 A I do.

7 Q What is your understanding of the words
8 priority claim?

9 A Continuation in part is the acronym for
10 CIP; and provisional, I could not give you a good
11 answer for that.

12 Q Okay. I asked a slightly different
13 question. I agree that CIP stands for continuation in
14 part and Prov stands for provisional.

15 My question is, what do you understand
16 priority claim to mean?

17 MR. MARSH: Objection. Legal conclusion.

18 A My understanding is that it is actually
19 covered later here. Let me try and point to it.

20 So under paragraph 21 is my understanding.

21 Q Do you want to point me to what you mean by
22 priority claim in paragraph 21? Paragraph 21 is
23 slightly long.

24 A Sure. I understand that for a claim of the
25 '218 patent to benefit from the priority of an earlier



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1 filing date, the earlier-filed application must fully
2 describe each feature of that claim in such a way as to
3 convey to a person of ordinary skill in the art that
4 the patent owner was in possession of the claimed
5 invention at the time of their earlier-filed
6 application.

7 THE VIDEOGRAPHER: Mr. Dunton, can you
8 re-center? I am losing the top of you. Thank you.

9 Q Okay. If we go on to page 8, paragraph 22
10 you say, After review of the priority applications
11 described above, it is my opinion that no claim of the
12 '218 patent is entitled to a priority date that is
13 earlier than the filing date of its application.

14 Do you see that?

15 A I do.

16 Q Below that you have in paragraph 23 a series
17 of tables.

18 Do you see that?

19 A Yes.

20 Q Can you explain to me how these tables work?

21 A So, as I mentioned earlier, if '218 wants
22 to claim the date of an earlier invention, that the
23 terms need to be used in the body of the application.

24 So, for example, master management unit,
25 which is in use in the '218 patent, needs to be present.



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1 So, as an example, if you look at the
2 application '317, '780, et cetera that are listed on the
3 right-hand column, then this word master management unit
4 does not come up. That is one of many examples.

5 This is probably the most important one
6 because the '218 patent is largely about the master
7 management unit and the local management unit, and these
8 two words would be key to have explained earlier the
9 priority dates that are claimed for '218.

10 Q Okay. And so I assume that you are looking
11 at the table that is on page 8 that flows over to
12 page 9; is that right?

13 A That's right.

14 Q That table has several rows in it; is that
15 right?

16 A Yes, with bullets.

17 Q Right. The first row lists several, what
18 you call, unsupported limitations; is that correct?

19 A Yes.

20 Q One of those, like you just mentioned, is
21 master management unit, correct?

22 A Yes.

23 Q And then on the right-hand column we have
24 applications listed; is that right?

25 A Yes.



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1 Q There is only five patent applications
2 listed here, correct?

3 A Correct. It is a subset.

4 Q Right. And the reason it is a subset is
5 because it is your opinion, this is what I am trying to
6 understand from you, you have five applications listed
7 here, and are you saying that those five applications do
8 not disclose a master management unit?

9 A Yes.

10 Q So by implication the other three
11 applications that are in your table on page 7 do
12 disclose a master management unit?

13 MR. MARSH: Objection. Form.

14 Q Did you understand my question?

15 A I do understand the question. So I relied
16 on the legal firm I am working with to do a lot of this
17 research and do the searching. We did spot check some
18 of these, and I am convinced that these limitations are
19 not present where it is relevant, where it makes sense
20 in the context of how the inventions work for these
21 various applications.

22 So the words master management unit can mean
23 many things in different patents. A good example would
24 be further down, for example, sensor or anomaly, of
25 course the word sensor is going to be used in almost



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1 every patent probably that is technology related that is
2 sensing something. So I am not surprised that the word
3 sensor would come up in many patents.

4 You can see there is only two, the '601 and
5 '587, where sensor does not come up and it will come up
6 in other places but in the context it means something
7 different than the '218 patent.

8 Q So you are in row two now; am I correct?

9 A Yes.

10 Q So row two of the table that we have been
11 talking about.

12 You are saying, you are saying sensor is not
13 disclosed in the '601 provisional; is that what you are
14 saying?

15 A And the '587, yes.

16 Q And the '587 provisional. So my question is
17 slightly different than that though.

18 If we go up to row one, only five
19 applications are listed, right, but we have agreed that
20 there are eight patent applications listed in the
21 priority chain.

22 So am I to understand your table as saying
23 that the three that aren't listed you could not find or
24 you found instances of master management unit in those
25 three unlisted applications then?



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1 MR. MARSH: Objection. Form.

2 Q Do you understand my question?

3 A I understand the question.

4 I relied heavily in creating this table in
5 working with counsel. And, as I mentioned, I did check
6 the key information that I am looking for, the MMU and
7 the LMU, and those words did not come up where I felt it
8 was important.

9 MR. BRIGGS: I object to that answer as
10 being nonresponsive.

11 Q I have asked a very specific question which
12 is, is master management unit disclosed in any of the
13 three unlisted applications here?

14 MR. MARSH: Objection. Form.

15 A I would not know at this moment.

16 Q I am trying to figure out how I read your
17 table and your opinion. You say your opinion is that
18 the '218 patent is not entitled to claim priority to any
19 of these applications.

20 Then I look at your table and you have five
21 applications listed in row one, which I understand that
22 your opinion is that the '317 application, for instance,
23 does not disclose master management unit but, for
24 instance, the '601 provisional application is not listed
25 in row one.



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1 So am I to understand that you cannot find
2 an instance of or did you find an instance of master
3 management unit in the '601 provisional?

4 MR. MARSH: Objection. Form.

5 Q Do you understand my question?

6 A I do. At this moment I would have to redo
7 that search and double-check to be able to answer your
8 question definitively.

9 Q Okay. So let's -- you pointed me to row two
10 of this table that starts on page 8 and flows over to
11 page 9 of your declaration, right?

12 A Correct.

13 Q And there we have master management unit and
14 sensor, anomaly and few other limitations listed,
15 correct?

16 A Correct, the '601, for example, does not
17 talk about master management unit, correct.

18 Q So, Mr. Dunton, do you have Exhibit 1019
19 which is the '601 provisional file history?

20 A I am opening it. I have it open.

21 Q Okay. So in my version of Exhibit 1016, on
22 page 1 there is 64 pages.

23 Does your Exhibit have 64 pages? It should
24 note it at the bottom left-hand corner of the front
25 page.



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1 MR. MARSH: Sorry, Counsel. Where are you
2 again?

3 MR. BRIGGS: I am on page 1 of Exhibit 1019.
4 At the bottom left-hand corner it says 1019, page 1 of
5 64.

6 MR. MARSH: I got it. Thanks.

7 Q Mr. Dunton, do you also see that?

8 A No. I do have 64 pages.

9 Q Do you have a stamped version? Do you have
10 stamping on your exhibit?

11 A No.

12 MR. BRIGGS: All right. Let us get the
13 witness the stamped copy to make sure that we are
14 working on the same thing.

15 If we can take a break for a minute and go
16 off the record, please.

17 THE VIDEOGRAPHER: We are going off the
18 record at 10:36 a.m. Pacific standard time.

19 (Recess was taken.)

20 THE VIDEOGRAPHER: We are back on the
21 record. The time is 10:39 a.m.

22 Go ahead, Counsel.

23 Q (BY MR. BRIGGS) Thank you, Mr. Dunton, for
24 your patience while we made sure we got you the correct
25 documents for the deposition here.



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1

2 So do you have Exhibit 1019 in front of you?

3 A I do.

4 Q And this time it has a stamp at the bottom
5 left-hand corner that says Exhibit 1019, page 1 of 46?

6 A It does.

7 Q In the right-hand corner it has the stamping
8 of the proceeding and all of that information?

9 A It does.

10 Q Okay. So this file history is a bit of a
11 mess, which I am sure you probably recognized during
12 your view; is that correct?

13 A We call it the spiderweb.

14 MR. MARSH: Objection.

15 Q Why do you call it a spiderweb? Why did you
16 call it a spiderweb?

17 A There is a lot of connections between the
18 various documents.

19 Q Okay. At the top left-hand corner of page 1
20 of Exhibit 1019 there is a named called Jill Nerkowski.

21 Do you see that?

22 A Yes.

23 Q Below that it says 61/200/601.

24 Do you see that?

25 A Yes.



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1 Q It says Jill's Bike Canopy.

2 Do you see that?

3 A I do.

4 Q If we go to page 2 of Exhibit 1019, at the
5 top it says the same stuff and it says, Patent
6 application, and then it has an address and it says
7 title, Jill's Bike Canopy.

8 Do you see that?

9 A Yes.

10 Q In the background of the invention it says,
11 This invention falls into the technical field of bicycle
12 accessories.

13 Do you see that?

14 A Which page?

15 Q Page 2.

16 A I do see that.

17 Q If we go -- feel free to leaf through this,
18 please do so to confirm.

19 We see nothing but disclosures relating to
20 bicycles; is that right?

21 Let me help you out a little bit. Why don't
22 you go to page 47.

23 A I was just about there. Okay. I am at 47.

24 Q So now we see a completely different
25 document that has another 61/200/601 on the left-hand



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1 corner under the title called Application Number.

2 Do you see that?

3 A I do.

4 Q And then it says, Tigo Energy Inc., Suite
5 203 and it lists an address.

6 Do you see that?

7 A Not yet.

8 Q Are you on page 47?

9 A I am on page 47.

10 Q At the very top it should say United States
11 Patent and Trademark Office and is what we call a filing
12 receipt.

13 A I see that.

14 Q The application number is listed on
15 left-hand corner.

16 A I see that.

17 Q And then below that is the address.

18 Do you see that with Tigo?

19 A Yes.

20 Q So now we are in the same place. It appears
21 to me that this file history has two applications in it.
22 It has a bicycle application and it has an application
23 also by Tigo Energy, Inc.

24 Do you see that?

25 A I do.



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1 Q Did you realize this when you were doing
2 your review of your declaration?

3 A No.

4 Q Okay. So let's go to page 53.

5 Do you have page 53?

6 A I am on page 53.

7 Q Do you see the title or I will take a step
8 back.

9 At page 53 we have what appears to be a
10 start of the patent application. At the top it says a
11 title.

12 Do you see that title?

13 A Yes. It says, Enhanced system and method
14 to balancing solar panels in a multi-panel system.

15 Q That is right. That is exactly what I am
16 seeing as well. So if we go back -- I am going to jump
17 a little bit on you. I apologize.

18 Can you go back to your declaration on
19 page 9?

20 A Yes.

21 Q So again looking at this and thinking about
22 the '601 provisional, which we are looking at right now
23 and looking at the second row of this table, I am
24 assuming, and you can just make sure this is clear for
25 me, that when you reviewed Exhibit 1019 in preparing



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1 your declaration you were looking at pages 47 forward;
2 is that right, on Exhibit 1019? Excuse me.

3 You were not looking at the bicycle canopy
4 application when you were deciding whether '601 provided
5 support for master management unit, correct?

6 A That is correct.

7 Q Okay. So now that we are on the same page
8 that you were looking at, 47 forward of Exhibit 1019,
9 let's go ahead and -- actually, sorry about that.

10 So you looked at pages 47 forward of 1019
11 when you were deciding whether, for instance, the '601
12 provisional disclosed master management unit; is that
13 right?

14 A Yes.

15 Q Okay. The same thing would go for sensor,
16 anomaly and everything listed in row two there, correct?

17 A Correct.

18 Q Okay. So let's go to page 55 of Exhibit
19 1019.

20 A I am there.

21 Q So in the middle of the page there is a
22 paragraph that begins, Figure 2 shows an overview 200 of
23 a photovoltaic system 200.

24 Can you read that paragraph?

25 A Exhibit 2 says --



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1 Q I am sorry. Can you read it to yourself?
2 You don't have to read it out loud. I apologize for not
3 being clear. I just want to make sure that you
4 understand what the paragraph is disclosing. My bad.

5 A I have read the paragraph.

6 Q So this paragraph is referring to a Figure 2
7 of this provisional patent application, correct?

8 A Yes.

9 Q So if we go to page 63 of Exhibit 1019, we
10 can see what that figure looks like. If you can please
11 do that.

12 A I am there, Figure 2.

13 Q Yes. Figure 2, page 63 of Exhibit 1019.
14 Do you see that?

15 A Yes.

16 Q So we have got at the far right-hand side a
17 number 200.

18 Do you see that?

19 A I do.

20 Q And then below that to the left we have
21 numbers 201A-N.

22 Do you see that?

23 A Yes.

24 Q And those have lines, and that number scheme
25 has lines extended to what is called modules.



1 Do you see that?

2 A Yes.

3 Q So those are solar modules, correct?

4 A Correct.

5 Q And those solar modules are connected to
6 what is called LMU and the LMU has numbers 202A, 202B
7 and 202N, correct?

8 A Yes.

9 Q What is an LMU?

10 A In this context an LMU is able to deal with
11 the issues of regulating module power and feeding it to
12 the string bus.

13 Q I guess I did not ask a very good question.
14 What does the acronym LMU stand for?

15 A Local management unit.

16 Q That is how I understand it.

17 And then below the local management unit is
18 a string bus; is that correct?

19 A Yes.

20 Q That is 205, right?

21 A Yes.

22 Q And connected to the string bus is a
23 management unit; is that correct?

24 A Yes.

25 Q That is 204, correct?



1 A Yes.

2 Q Okay. And also connected to the string bus
3 is a string combiner 206, correct?

4 A Yes.

5 Q And that is connected to an inverter 203,
6 right?

7 A Yes.

8 Q Which is connected to the power grid?

9 A That's correct.

10 Q Okay. So let's now look at the patent that
11 we have at issue, Exhibit 1001, which is the '218
12 patent. Can you please open that?

13 When you have that open, if you can please
14 look at Figure 13.

15 A Hold on.

16 Q I am sorry.

17 A I am on Figure 13.

18 Q We are both looking at Figure 13 of Exhibit
19 1001 which is the '218 patent, correct?

20 A That's correct.

21 Q So it looks like Figure 2 of the '601
22 provisional, which we just went over, provides the basis
23 of Figure 13 of the '218 patent; would you agree?

24 MR. MARSH: Objection. Form.

25 Q Do you understand my question?



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1 A I understand the question. Forming the
2 basis is your question and this is a more complex
3 question to answer.

4 Q What is complex about it? We have two
5 figures that are essentially identical with essentially
6 the same items only slightly different in that there is
7 different numbers. There is a one in front of a two to
8 make them 1201, 1201A?

9 MR. MARSH: Objection. Form.

10 A Understood.

11 Q So wouldn't a person of ordinary skill in
12 the art consider this Figure 13 to be based on Figure 2
13 of the provisional patent application?

14 MR. MARSH: Same objection.

15 A No.

16 Q No. So Figure 13 of the '218 patent is not
17 based off Figure 2 of the '601 provisional; is that what
18 you just said?

19 A What I am saying is this: That is the
20 words management unit and the word local and the word
21 system and the word management unit are extremely broad
22 concepts and although the figures look very similar,
23 what is inside the box would have to be examined
24 carefully to make sure that it was the basis for the
25 '218 patent.



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1 Like I mentioned earlier, the word sensor or
2 anomaly are very broad terms and in the same sense a
3 local management unit is a very broad term.

4 The same thing for system management unit.
5 It could be many different things what is inside the box
6 on Figure 13 on 1204 and it may or may not be the same
7 thing in Figure 2, specifically related to the claims.

8 Q Is that your answer?

9 A That is my answer, yes.

10 Q Please look at paragraph 21 of your
11 declaration, page 7.

12 A I am sorry. Can you lead me back to my
13 declaration? What page again?

14 Q Your declaration, page 7, paragraph 21 which
15 you read to me earlier today.

16 A Yes, I have read that.

17 Q So do you understand based off of what you
18 say in paragraph 21 that the claim for the '218 patent
19 to benefit from the priority and earlier filing date of
20 an earlier-filed application, the earlier filed
21 application must fully describe each feature of that
22 claim in such a way as to convey to a person of ordinary
23 skill in the art that the patent owner was in possession
24 of the claimed invention at the time of the
25 earlier-filed application.



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1 So I have got a Figure 2 in the provisional
2 that has a solar module 201A, correct?

3 To be clear, Exhibit 1019, Figure 2, solar
4 module 201, correct?

5 A 201, correct.

6 Q And Figure 13, solar module, the first one
7 is 1201, correct?

8 A Correct.

9 Q And that pattern continues. Solar module
10 201 in Figure 2 provisional, solar module 1201B, Figure
11 13 of the '218, correct?

12 So does the solar modules of Figure 2
13 provide support for the solar modules of Figure 13 of
14 the '218 patent?

15 MR. MARSH: Objection to form.

16 A I would need to read -- again, this has
17 been a year, close to a year -- what the Exhibit 1019,
18 the LMU role and responsibility that it plays, and as
19 well as the 204 management unit to be able to say that
20 it is equivalent or would be sufficient to lead someone
21 to believe that the LMU and the system management unit
22 in the '218 patent are the same or have the basis to be
23 built off of.

24 Q That is not the question that I asked.

25 I asked whether the solar modules in



1 Figure 2 provide support for the solar modules disclosed
2 in Figure 13 of the '218 patent?

3 A The provide support is the issue that I
4 have with the question.

5 Q What is your standard for providing support
6 from an earlier-filed patent application then? What is
7 your standard?

8 MR. MARSH: Objection. Form.

9 A I would have to understand the function of
10 1202 in the '218 patent, and I would have to understand
11 the function of the 202 in Exhibit 1019. Just because
12 an acronym matches does not mean the function or the
13 support is the same.

14 Q I think again you skipped down to something
15 that I am not asking you about. I am asking you about
16 the solar modules.

17 There is no acronym in the solar modules,
18 correct?

19 A Correct.

20 Q So the solar modules of Figure 2 of the '601
21 provisional provide written description support for the
22 solar modules of Figure 13 of the '218 patent?

23 MR. MARSH: Objection. Form.

24 A They are connected I would say for sure. I
25 would assume that there is some type of support, yes.



1 Q Okay. Let us go back to Exhibit 1019.

2 A I am there.

3 Q Sorry I am looking for the place. Just bear
4 with me.

5 Let's go to page 16. Look at Figure 2 of
6 the provisional, of Exhibit 1019.

7 A I am there.

8 Q We have 202A which is an acronym for LMU,
9 correct?

10 A Yes.

11 Q And if we go back to Figure 13 of Exhibit
12 1001, it has the same acronym LMU and it says 1202A
13 instead of 202A, correct?

14 A Correct.

15 Q Am I correct that your opinion today is that
16 you are not sure whether the provisional provides
17 written description support for that LMU of Figure 13 of
18 patent number '218?

19 MR. MARSH: Objection. Form.

20 Q That was a long question. Should I redo it?

21 A Let me just digest what you said.

22 Yes, if you can break it up, that would be
23 helpful.

24 Q All right. So provisional, '601
25 provisional, which is Exhibit 1019, Figure 2, okay?



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1 A Okay.

2 Q You have LMU 202A, right?

3 A Yes.

4 Q And then in Figure 13 of the '218 patent we
5 have LMU as well, which is 1202A, correct?

6 A That's correct.

7 Q Does the Figure 2 provisional provide
8 written description support for the LMU 1202A of the
9 '218 patent?

10 A I would have to research that at this
11 point.

12 Q What would you need to research?

13 A The description of both LMUs.

14 Q So you are not sure whether the LMUs
15 disclosed in the '218 patent are the same LMUs as
16 disclosed in the '601 provisional?

17 A I am not sure at this point, but yes.

18 Q Okay. Can I assume that that answer applies
19 to the string bus of Figure 13, that you are not sure
20 whether the string bus, 1205 of Figure 13, has written
21 description support via Figure 2 of Exhibit 1019?

22 A I would have to read both next to each
23 other to be certain that they would be either similar
24 or different.

25 Q So the answer to my question is yes, you are



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1 not sure whether the string bus 1205 has written
2 description support from the Figure 2 string bus of
3 Exhibit 1019?

4 A At this moment I do not have a definitive
5 answer if they are the same or not.

6 Q Okay. Can I assume that that answer applies
7 to the inverter 1203 of Figure 13 as it relates to
8 Figure 2 of the '601 provisional, you are not sure
9 whether the '601 provisional provides written
10 description support for the inverter 1203 of Figure 13
11 of the '218 patent?

12 A That is correct.

13 Q Correct that you are not sure, correct?

14 A I am not sure, that's correct.

15 Q So we are just going to agree outside the
16 solar modules, which probably have support, you are not
17 sure if anything in Figure 13 of the '218 is supported
18 by Figure 2 of the '618 provisional; is that right?

19 MR. MARSH: Objection to form.

20 A That's correct.

21 Q Okay. Let's look at Figure 1 of the '601
22 provisional then. That is on page 62 of Exhibit 1019.

23 A I am sorry. What page again?

24 Q 62 of Exhibit 1019.

25 A I am there. Figure 1, yes.



1 Q So the disclosure of Figure 1 in Exhibit
2 1019 begins on page 53 of Exhibit 1019. If you would
3 not mind reviewing the disclosure of Figure 1, which is
4 a few paragraphs, and then letting me know when you are
5 finished.

6 A Okay. I have read up to the end of page 54
7 of Exhibit 1019 and I have covered the first Figure 1
8 and I am just going onto Figure 2. You asked me to
9 stop at Figure 1; is that correct?

10 Q Yes. We are just going to work on Figure 1
11 for a little bit, if that is okay.

12 A Yes.

13 Q So Figure 1 has a module 102 at the top
14 left, right, at the top with 102 being at the left part
15 of that?

16 A Let me jump back to the figure.

17 Q That is on page 62 of Exhibit 1019.

18 A Go ahead.

19 Q So at the top of Figure 1 of Exhibit 1019
20 there is a module, correct?

21 A Yes.

22 Q It has 102 pointing to it?

23 A Yes.

24 Q That is a solar module; is that right?

25 A Yes.



1 Q Okay. Then on the right-hand side we have
2 three arrows coming into a box. There is a duty cycle
3 arrow and a phase arrow and sync pulse arrow, correct?

4 A Yes.

5 Q That is 104A through 104C?

6 A Yes.

7 Q At the bottom we have a serial power bus
8 103, correct, bottom left?

9 A Yes.

10 Q And then we have a capacitor C1 which is
11 105; is that right.

12 A Yes.

13 Q And a diode D1 which is 107; is that right?

14 A Yes.

15 Q And then we have an SCMC 109, correct?

16 A Yes.

17 Q What is that?

18 A It is an acronym for integrated circuit.

19 Q What is the acronym, the whole thing or part
20 of it?

21 A I did not write that down. I may need to
22 go back. I remember reading about an acronym for
23 electronic circuit and I believe that SCMC represents
24 electronic circuit that was called local management
25 unit and also link management unit.



1 Q SCMC 109, I am asking what that is?
2 A I will have to go back and check.
3 Q Please do. I will wait for you to do that.
4 A Single chip microcontroller.
5 Q It is a microcontroller; is that fair?
6 A Yes.
7 Q Okay. And right below that we have a Q1.
8 What is Q1?
9 A A transistor.
10 Q Okay. Is that a transistor up to the
11 left-hand side of the text of Q1?
12 A Yes, controlled by SCMC.
13 Q Right. And, as you indicated, that has an
14 acronym LMU and it has 2.1 next to it?
15 A Yes.
16 Q Does that LMU acronym stands for local
17 management unit?
18 A There are two definitions.
19 Q Okay. What are those two definitions?
20 A Local management unit and link management
21 unit.
22 Q So LMU can support either local management
23 unit or link management unit, correct?
24 MR. MARSH: Objection. Form.
25 A The support is what I am -- it is an



1 acronym.

2 Q To mean? What word do you want me to use?
3 Should I use LMU equals either?

4 A Equals local management unit or link
5 management unit.

6 Q Okay. Fair enough.
7 Please go to the '218 patent, Figure 10.

8 A I am there.

9 Q So Figure 10 looks identical nearly to
10 Figure 1 of the Exhibit 1019 to me.

11 A Yes.

12 Q What are the differences to you between
13 Figure 1 of Exhibit 1019 and Figure 10 of the '218
14 patent?

15 A I will need to read the description of
16 Figure 10.

17 Q Please do so. And, if you don't mind, while
18 you do that, I am going to take a bathroom break, and I
19 will be right back.

20 A All right. I am ready.

21 Q Okay. Thank you for doing a detailed
22 review.

23 When we left off my question was, what is
24 the differences to you between Figure 1 of Exhibit 1019
25 and Figure 10 of the '218 patent?



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1 A They are identical.

2 Q Okay. So would you agree then that Figure 1
3 of Exhibit 1019 provides written description support for
4 Figure 10 of the '218 patent?

5 A Yes.

6 Q Okay. Do you want to change your answer on
7 Figure 2 of Exhibit 1019 versus Figure 13 of the '218
8 patent?

9 A I am sorry. That is a little too fast for
10 me.

11 Q Would you like to change your answer on
12 Figure 2 of Exhibit 1019 versus Figure 13 of the '218
13 patent now that you have had time to read more of the
14 document?

15 A I did not read Figure 13.

16 MR. MARSH: Objection.

17 MR. BRIGGS: Your counsel tried to object.
18 Give him a second.

19 MR. MARSH: Objection.

20 MR. BRIGGS: Did the court reporter get the
21 objection?

22 THE COURT REPORTER: I heard objection. Was
23 there anything else?

24 MR. MARSH: I said objection. Form. Thank
25 you.



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1 Q No worries, Mr. Dunton. This happens
2 occasionally during these things. So do not worry about
3 it.

4 So if you would not mind then, can you
5 please refamiliarize yourself with Figure 2, the text of
6 Exhibit 1019, and let me know when you are finished and
7 compare that to -- I am sorry. Strike that.

8 Could you please look at Figure 2, the text
9 that is associated with that in Exhibit 1019 and compare
10 that to the disclosures in Exhibit 1001, the '218
11 patent, as it relates to Figure 13?

12 A I will, yes.

13 Q Thank you.

14 A Ready.

15 Q Thank you for doing that detailed review.

16 Again, just to reorient, we are looking at
17 Figure 2 of Exhibit 1019 versus Figure 13 of the '218
18 patent.

19 My question to you was, what are the
20 differences, if any, between Figure 2 of Exhibit 1019
21 and Figure 13 of the '218 patent?

22 MR. MARSH: Objection. Form.

23 A The functionality of these blocks are
24 identical.

25 Q When you say "these blocks," you mean like



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1 if I look at Figure 2 I have a module block and I have
2 three module blocks, correct? Is that you what mean by
3 block, the rectangle?

4 A Yes.

5 Q Okay. So would you then agree that if the
6 functionality of those blocks are identical that
7 Figure 2 of the 1019, Exhibit 1019 provides written
8 description support for Figure 13 of the '218 patent?

9 MR. MARSH: Objection. Form.

10 A In large they are identical functions.

11 Q Which make sense because, if we go to page
12 17 of your declaration, which is Exhibit 1002 --

13 A What page? I am sorry.

14 Q Page 17, starting at paragraph 38.

15 A Paragraph 38 I have.

16 Q If you look at paragraph 38, below that you
17 have some figures and then paragraph 39.

18 Do you see that?

19 A Yes.

20 Q So in paragraph 38 of Exhibit 1002 you are
21 relying on Figures 10 and 13 of the '218 patent,
22 correct?

23 MR. MARSH: Objection. Form.

24 A I am relying on the figures to describe --
25 let me answer that question in a minute.



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1 Q Yes. Take your time.

2 A I am relying on the figures, that is
3 correct, to describe the information in paragraph 38.

4 Q Right. In fact, you go so as far to say at
5 the very last sentence of paragraph 38, Below is a
6 representative embodiment of the '218 patent.

7 Do you see that?

8 A I do.

9 Q And you are referring to Figures 10 and 13
10 in doing so, correct?

11 A Yes. Yes.

12 Q We have been going about another hour. Do
13 you need a break, Mr. Dunton? It is a good stopping
14 point for me for a break; otherwise I will go for a
15 little while.

16 A I can go a little further, about a half
17 hour, but I am willing to take a break as well.

18 MR. BRIGGS: Phil, how are you doing?

19 MR. MARSH: I am fine for at least a half
20 hour.

21 Q Let's keep going then.

22 So if you can go then back to page 9 of your
23 declaration and look at row two of that table. We have
24 been talking about the '601 provisional and what it
25 discloses.



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1 A Okay.

2 Q And in that table you have several things
3 listed, the first of which is master management unit,
4 correct?

5 A Correct.

6 Q We just saw that Figures 10 and 13, in your
7 words, are basically identical to Figures 1 and 2 of the
8 provisional, which I agree with.

9 Why, if they are identical, does the '601
10 provisional not disclose a master management unit?

11 MR. MARSH: Objection. Form.

12 A Paragraph 38, page 17 of Exhibit --

13 Q You can say your declaration and we will
14 know what you mean.

15 A My declaration.

16 Q Paragraph 38; is that you what said?

17 A Right. I think the key point here is in
18 the event of an anomaly in the operation of the
19 photovoltaic system. That is the key aspect that is
20 missing in the prior art.

21 Q Okay. Maybe I didn't ask a very good
22 question. I asked, the very first bullet point said
23 master management unit in row two of page 9. I am not
24 asking about anomaly, which is two below that.

25 I am asking whether the '601 provisional



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1 discloses a master management unit?

2 MR. MARSH: Objection. Form.

3 A It discloses an acronym and it discloses a
4 function that I would characterize as optimizer.

5 Having read through both Figures 1 and 2 and 13 and 10
6 of the two patents and so far all that has been
7 described is optimization of the power output.

8 Q So let's look at Figure 2 of Exhibit 1019,
9 please.

10 A I am there.

11 Q And at the bottom we have management unit
12 204. Those are the exact words on the page, correct?

13 A That's correct.

14 Q Why is management unit 204 not a master
15 management unit?

16 MR. MARSH: Objection. Form.

17 A Why is it not a master management unit; is
18 that your question?

19 Q Right. Because in row two of page 9 of your
20 table you say master management unit is not disclosed by
21 '601 provisional.

22 My question is, well, I have master
23 management unit here 204, and why is that not a master
24 management unit?

25 MR. MARSH: Objection. Form.



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1 A So my answer is the same as before. These
2 are very broad terms and now that I have read the body
3 of both inventions, Exhibit 1001 and 1019, figures, the
4 figures that we compared so far they are identical in
5 that aspect and I have no objection to using the
6 definition of management unit in both cases.

7 The issue is, what are we managing? If it
8 is just power point tracking and optimization of the
9 power output, then I believe that this is identical
10 between the two.

11 Q Okay. I don't want to interrupt you. Are
12 you done?

13 A I am done.

14 Q Okay. if the word master had occurred in box
15 204 of Figure 2, would you have then agreed that it
16 disclosed a master management unit?

17 A No.

18 Q And is that because the functionality is not
19 of a master management unit as claimed in the '218
20 patent?

21 A Correct.

22 Q Okay. Let's continue on in page 9, row two,
23 and the next word you say or limitation that you say is
24 not disclosed is sensor.

25 Do you see that?



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1 A On page 9?

2 Q Page 9 of your declaration.

3 A Yes.

4 Q Right under master management unit, my
5 interpretation of your tables is that you are saying
6 sensor is not disclosed by the '601 provisional; is that
7 a correct interpretation?

8 A Yes.

9 Q Okay. So let's go back to Exhibit 1019 and
10 if you can please go to page 55. If you can just read
11 the first paragraph.

12 MR. MARSH: To yourself.

13 Q Thank you. To yourself, please.

14 A Page 55.

15 Q Exhibit 1019, the very first paragraph.

16 A Just to make sure I am on the right page
17 here, this is page 54 of 64?

18 Q 55?

19 A 55 of 64. Thank you.

20 I have read the first paragraph.

21 Q And this time read the last sentence of that
22 paragraph out loud.

23 A The management unit 204 further discussed
24 below may have sensor inputs for lights, sensors,
25 temperature sensors, one or more for each ambient



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1 module or both.

2 Q So this time we actually have the word
3 sensors in the text?

4 A Right.

5 Q Can you please explain to me why the '601
6 provisional does not disclose sensors?

7 MR. MARSH: Objection. Form.

8 A As I mentioned before, the word sensor is
9 an extremely broad term. In the case here that we just
10 discussed, the temperature and light are being measured
11 by the sensor which has to do with the power
12 regulation; and so these would be expected to do what
13 is known as maximum power contracting or energy
14 production optimization, but that is not the heart of
15 the matter for the claims in '218.

16 Q Can you explain to me a little bit more
17 about the sensors though in Exhibit 1019? You said they
18 are used for optimized management tracking; is that what
19 you said? I do not want to put words in your mouth.

20 A Sure. So maximum power point tracking.

21 Q Power point tracking?

22 A Maximum power point tracking. It is a
23 fundamental concept in solar power plants. Would you
24 like me to elaborate on that?

25 Q I was about to ask you that same thing.



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1 Please do. Please elaborate. I am sorry.

2 A Solar modules, as they are known, when I
3 say the word module, I mean a photovoltaic module or
4 most people call them panels, but that is a misnomer.
5 A panel again is a broad term.

6 A photovoltaic module, and I will call it
7 just modules going forward, is extremely dependent on
8 irradiance from the sun and temperature, the ambient
9 temperature and the output power therefore will change
10 drastically throughout the day. Irradiance is
11 constantly changing because of the location of the sun.
12 The temperature, the ambient temperature will change
13 considerably throughout the day.

14 The characteristic of a solar module or
15 solar cell is such that to extract the maximum amount of
16 power from the cell, you have to vary the load that is
17 attached to this module. The load in this case can be
18 an inverter based on what we have discussed so far, but
19 it could be other things as well.

20 But sticking to just inverters, the current
21 is the only thing that the inverter can control. The
22 equivalent is a spigot on a faucet. As you open the
23 faucet, more current can flow. But using that same
24 analogy, if you open the spigot too much, the water
25 pressure would drop and then the flow of water would



1 slowdown.

2 In the case of the photovoltaic systems, if
3 the current is too high, the voltage drops and the
4 product of the voltage and the current is what
5 determines power. That is the fundamental formula,
6 power equals current times voltage. And this is
7 typically shown as a curve. On a graph where voltage is
8 on the Y axis, I am sorry, on the X axis and the current
9 is on the Y axis. And there is a knee in this curve
10 where the product of the current and the voltage is
11 maximized and that is called maximum power point
12 tracking.

13 Let me stop there for any clarifying
14 questions.

15 Q That is very helpful. I like the knee of
16 the curve.

17 You are saying that I am going up a hill and
18 the other side of the hill there is a backside and the
19 knee at the top is where you get the maximum output of
20 power, is that correct?

21 A Correct.

22 Q So sticking in Exhibit 1019 and talking
23 about these sensors that are disclosed, we have a light
24 sensor and temperature sensor that are disclosed in that
25 paragraph, correct?



1 A Yes.

2 Q Just sticking with the light sensor, what is
3 the light sensor doing for maximum power point tracking?

4 A In theory in this particular case it can
5 measure the irradiance of the sun if the sensor was
6 positioned in the parallel plain to the solar module
7 itself.

8 Q So it is detecting the amount of ambient
9 light that it is receiving?

10 A Yes, also known as irradiance.

11 Q Okay. Are those light sensors that are
12 disclosed in that paragraph used for any other function?

13 A I don't know.

14 Q But you think they are at least used for
15 irradiance detection?

16 A So hypothetically they could be used. In
17 all practice there are no sensors. The actual -- there
18 are much more practical ways of doing maximum power
19 tracking and that is what is used today, but in this
20 particular patent and in this concept it would
21 potentially make the maximum power point tracking
22 faster, quicker and easier.

23 Q By tracking the amount of ambient light
24 hitting it?

25 A Right.



1 Q Okay. Temperature sensor, sticking in that
2 same paragraph, what are the temperature sensors at page
3 55, top paragraph, what are those being used for the
4 record maximum power point tracking?

5 A Voltage is directly dependent on
6 temperature. There is a so-called temperature
7 coefficient that every module has and based on
8 temperature, the voltage will drop.

9 And so, again, in theory here, a temperature
10 sensor would give maximum power point tracker. What I
11 mean by that, when I say maximum power point tracker, I
12 am talking about a little microcontroller running an
13 algorithm and it would be the one receiving the input
14 above the sensors and based on the temperature it would
15 then be able to have an expectation on what the voltage
16 should be and, again, it could optimize the algorithm
17 for maximum power point tracking.

18 Q So it is tracking the temperature of the
19 solar modules; is that fair?

20 A I am assuming that is what the inventor had
21 in mind.

22 Q Does it use a thermal couple typically for
23 this or what is a typical method for tracking
24 temperatures in these types of situations?

25 A I do not believe that actually anyone does



1 this temperature tracking.

2 Q So you have never seen temperature sensors
3 used with panels?

4 A No. In fact, I have seen temperature
5 sensors and light sensors attached to arrays, not
6 individual panels, and they are considered part of the
7 acquisition system for the overall power plant. This
8 is giving a predictive value for the overall power
9 plant.

10 These are fairly expensive to install and
11 complex to connect to an overall system. They are
12 typically connected through the inverters. And it is
13 giving a picture of the overall system, not the
14 individual solar panels.

15 Q Okay. But we would agree, you and I, that
16 the words the management unit may have sensor inputs for
17 light sensors, temperature sensors, one or more ambient
18 module or both is disclosed in this paragraph of 1019,
19 right?

20 MR. MARSH: Objection. Form.

21 A Let me get there. So 1019.

22 Q I am sorry. It is the same paragraph that
23 we have been discussing in 1019. The very first
24 paragraph of page 55, the last sentence.

25 So having been around patent law for a long



1 time and 38 patents and understanding that a POSITA
2 would read this and understand how this functions, my
3 question is, in that context, what type of sensors,
4 temperature sensors would be used with these modules?

5 My specific question was, a thermal couple
6 or something else, what would be, what would your
7 expectation be for this disclosure?

8 A Let me jump back here real quick.

9 Q Sure.

10 A Can you direct me back to the paragraph,
11 what page?

12 Q That would be page 55 of Exhibit 1019, the
13 very first paragraph, please.

14 A Thank you.

15 So a POSITA would understand that these
16 temperature sensors and light sensors could be coupled
17 to a management unit for the purpose of maximum power
18 point tracking.

19 Q Right. That was a very helpful discussion.

20 My question is, what would be examples of
21 those types of temperature sensors? Thermal couple?
22 Something else? What would you think that would be?

23 A I would believe -- so going back to the
24 time frame that we are talking about here, this
25 generally was done with, I would think the most



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1 accurate would be a calibrated diode transistor would
2 give you accurate temperature measurements.

3 Q Okay. So that would be integrated probably
4 into a panel then?

5 MR. MARSH: Objection. Form.

6 A So, no, this would not be integrated.

7 Q Okay. But let me just look at your
8 explanation. Give me a second, please.

9 She has realtime, but I don't know that I
10 actually have the right language. It says calibrated.
11 I think that you said diode and something else. Can you
12 please --

13 A Transistor.

14 Q Transistor, okay. And those calibrated
15 diodes and transistors could be used to detect the
16 temperature?

17 A Correct.

18 Q Okay. And then I have the same question for
19 light.

20 What type of sensors would be used to detect
21 the light?

22 A So a photovoltaic diode would be probably
23 the best choice.

24 Q Anything else that could be used in this
25 situation to detect, I think you called it irradiance?



1 A Irradiance, yes.

2 Q Is there anything else beside a photovoltaic
3 diode that you would use?

4 A There are resistors that react based on
5 light.

6 Q Okay. It has been a long conversation, but
7 I will go back to my original question which is at page
8 9, '601 provisional. You say it does not disclose a
9 sensor. I am trying to figure out why you say it does
10 not disclose a sensor.

11 Can you please explain to me after this long
12 discussion why you believe the '601 provisional does not
13 disclose a sensor?

14 MR. MARSH: Objection. Form.

15 A So in the context of the '218 patent, in
16 the context of the safety control, which is the heart
17 of this patent, the sensors describe for maximum power
18 point tracking are not the same sensors that would be
19 used for detecting a safety situation. The concept of
20 safety and the concept of maximum power point tracking
21 are not overlapping.

22 Q Okay. So the sensors that we just talked
23 about are for maximum power point tracking and since
24 those sensors are not being used to assess a safety
25 situation, you did not consider them to be "the claimed



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1 sensors;" is that a fair understanding of why your
2 opinion is what it is?

3 A Yes.

4 Q Okay. This is right below sensor anomaly on
5 page 9.

6 A Yes.

7 Q Do the sensors that we just talked about in
8 Exhibit 1019, do those detect anomalies?

9 MR. MARSH: Objection. Form.

10 A No.

11 Q What is your definition of a sensor that
12 detects an anomaly in the context of the '218 patent?

13 A Paragraph 38 on page 17.

14 Q Are you going to provide me a definition or
15 are you showing me something?

16 A I am pointing to you my definition of the
17 sensors required for detecting anomalies.

18 Q Can you point me to something specific? I
19 don't know what you are pointing to in paragraph 38.

20 A Let me do that. Sorry.

21 So paragraph 38, page 17, Exhibit -- I am
22 sorry, the declaration, the systems described in the
23 '218 patent may shut down or modify the operation of all
24 of the system in the event of an anomaly. So this is
25 the beginning of the description of what I would



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1 consider anomaly in the context of the '218.

2 So, for example, reduce the safety risk
3 during a shipment, installation, maintenance of the
4 photovoltaic system.

5 Q Okay.

6 A So that would be the system is not
7 operational, therefore they need to be shut down.

8 Maintenance would be, if a module is being
9 replaced, it would be important to shut down any
10 dangerous voltages and the temperature sensor and the
11 irradiance or light sensor would not help in this at
12 all.

13 Q Okay. That answers a slightly different
14 question. Maybe I did not ask a good question.

15 My question is, what types of sensors, what
16 is the definition, your definition -- strike that.

17 What is your definition of a sensor that
18 detects an anomaly in the context of the '218 patent?

19 MR. MARSH: Objection. Form.

20 A One very commonly used one would be the
21 presence of the grid.

22 Q So a sensor that detects the presence of a
23 grid is a sensor that detects an anomaly?

24 A Correct.

25 Q Okay. Let me just check my stuff here.



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1 Did you propose a definition of anomaly in
2 your report? The reason that I am asking is that I
3 could not find one.

4 A I don't have an answer. I would have to do
5 more research.

6 Q Okay. That is fine. Just thinking about
7 the '218 patent and its disclosures in safety, what are
8 some examples of anomalies you would consider to be
9 within the scope of an anomaly that is covered by the
10 '218 patent?

11 MR. MARSH: Objection. Form.

12 A I am sorry. I will have to ask you to
13 reask that question one more time.

14 Q Sure. My question is, what type of
15 anomalies would be in the scope of the '218 patent
16 claims?

17 A Okay. Thank you.

18 All right. I think that I am ready to
19 answer the question.

20 Q Great. Do you still remember the question?

21 A Yes.

22 Q Go ahead.

23 A So it is not an exhaustive search, but I do
24 think that I have about eight different types of
25 anomalies. Some of them are outlined in paragraph 80.



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1 Q Paragraph 80 of your declaration?

2 A I am sorry. Yes, of the declaration. But
3 I will read them to you right here.

4 So we have this concept of a watchdog
5 timeout. That would be a type of sensor that is more of
6 an algorithmic one.

7 There is the concept of polling the actual
8 modules, solar modules or the PV in the case of theft or
9 breakage if that was missing.

10 Typically these systems have to be
11 configured so the overall monitoring system understands
12 how many solar modules are hooked up to the overall
13 system. If one is missing, that would be an anomaly.

14 As I mentioned earlier, the grid being
15 present can be, can be detected in many ways. At a high
16 level concept, if the grid is not present, generally
17 that is an anomaly. What I mean by the grid is not
18 present, I mean the grid has failed.

19 There is this general concept of just normal
20 operating system, that the overall system is operating
21 in a normal state. An anomaly can be considered if any
22 part of the system is not working for whatever reason.
23 And this is, again, more protocol or some kind of
24 communication that would be taking place that would be
25 considered an anomaly.



1 Some examples that are given here in this
2 paragraph here are smoke, voltage, fire and then it
3 broadens it to just other emergency conditions.

4 So this is probably a reasonable amount of
5 anomalies that I would expect to see disclosed in
6 earlier prior art reacting to this type of, these types
7 of conditions.

8 Q Okay. I am looking at paragraph 80. Just
9 give me a minute, please.

10 It is 12:15 Pacific. I could use some food.
11 I don't know if we want to take a 20- or 30-minute break
12 or something like that to grab something and come back?

13 A I will second that.

14 MR. MARSH: That is fine for me.

15 Q Let us agree on -- I guess that would be
16 12:45 Pacific time to restart. Will that work?

17 A That sounds reasonable.

18 Q All right. I will see you then.

19 A Thank you.

20 THE VIDEOGRAPHER: We are going off the
21 record at 12:15 p.m. Pacific standard time.

22 (Recess was taken.)

23 THE VIDEOGRAPHER: We are back on the record
24 at 12:46 p.m. Pacific standard time.

25 Go ahead, Counsel.



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1 Q Thank you. Welcome back, Mr. Dunton.

2 I am assuming that you did not speak with
3 counsel during the break; is that correct?

4 A I did not speak. I exchanged one text
5 message which read, if I would like to talk, he was
6 available and that is it. I responded, I am fine
7 without.

8 Q Okay. Good.

9 When we left off you were explaining to me
10 in the context of the '218 patent what an anomaly is.

11 Do you remember this?

12 A Yes.

13 Q The reason I ask is can we now look at the
14 '218 patent, claim 1 which begins on column 19? I want
15 to start asking some questions about claim 1 and some of
16 the limitations in there. If you can just tell me when
17 you get to that location of the '218 patent.

18 Do you see that?

19 A Yes.

20 Q So claim one is a system claim, correct?

21 A I am sorry. Repeat the question. What
22 type of a claim is?

23 Q Claim 1 is a system claim, correct?

24 A Correct. Yes.

25 Q And that differs from claim 15 which is in



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1 column 20 which is a method claim, correct?

2 A Yes.

3 Q Do you know what the difference between a
4 system claim and a method claim is?

5 MR. MARSH: Objection. Form.

6 Q Do you understand my question?

7 A I understand the question.

8 From my intuitive understanding of a method
9 and system, I would interpret it a certain way. I am
10 not sure that would mean a legal definition though.

11 Q So why don't tell me what your understanding
12 is of the difference between a system and a method claim
13 based off of your report. I mean your report includes
14 and invalidity analysis for claim 1 and 15. So I am
15 just wondering what you thought the differences were
16 between a method 15 and a system of claim 1, how those
17 differ?

18 MR. MARSH: Objection. Form.

19 Counsel, you are asking for all of the ways
20 those claims differ?

21 MR. BRIGGS: I am just asking what his
22 understanding is of the difference between a system
23 claim and a method claim.

24 A I would have to do more research to give
25 you a definitive answer on that.



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1 Q Okay. Let us look at the system claim 1 and
2 it has several limitations listed. I am going to begin
3 at the limitation that is on line 44. That limitation
4 reads, Where the MMU is connected to at least one
5 sensor, the sensor configured to detect an anomaly.

6 So I am concerned about the second part of
7 that, the sensor configured to detect an anomaly.

8 Before we left for our lunch break we were
9 talking about sensors and we were talking about
10 anomalies and now we have the language, the sensor
11 configured to detect an anomaly.

12 Do you see that?

13 A Yes.

14 Q Do you know what the words configured to
15 mean in claim 1 in this context?

16 A As part of the system it is coupled in so
17 sense and it can be either through wiring or through
18 protocols and software exchange of information in
19 various ways.

20 Q So this sensor has to in Figure 2 detect
21 anomaly, right? Do you see that?

22 A In Figure 2 detect anomaly is in my mind
23 very broad. It could.

24 Q I understand. I am asking if you see the
25 language.



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1 A I do see it, yes.

2 Q So if a sensor is not configured to detect
3 an anomaly, it does not fall within the scope of the
4 claims, right?

5 A It would not be part of this particular
6 claim, yes.

7 Q Okay. So we are on the same page then. The
8 sensor has to be configured to detect an anomaly, and we
9 talked about the types of anomalies in your
10 paragraph 80.

11 Can you describe to me the type of sensors
12 that are configured to detect the anomalies listed in
13 your paragraph 80?

14 MR. MARSH: Objection. Form.

15 Q Do you understand my question?

16 A I understand your question, yes. I am
17 jumping back to paragraph 80.

18 So the first one listed as an example is
19 detecting an overvoltage condition. There is two cases
20 where, that I can think of offhand where overvoltage
21 could be a condition that would be considered an anomaly
22 for a solar power plant and that would be on the grid,
23 and there is a number of reasons why the grid voltage
24 would be too high. From the grid itself or bad
25 connections to the grid or things like that. Wrong size



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1 wires. There is a number of reasons why an overvoltage
2 condition can exist. At that point the safest thing is
3 to disconnect the system from the grid.

4 The other option for voltage is, if it is
5 poorly designed, this is what I do all day, and its
6 considerations are not taking into account cold
7 temperatures or things like, then the voltage on the DC
8 side of the inverter for the string itself will exceed
9 the operating voltages of, in this case, the optimizers
10 or the inverter itself or the voltage rating of the
11 wiring, a number of system components on the DC voltage
12 to be maintained within a certain window and overvoltage
13 is by far the most lethal condition that can destroy
14 equipment and cause fires.

15 And also the installation can be poorly done
16 by untrained individuals, which is a common problem in
17 the solar industry unfortunately. And so during
18 original commissioning of the system, as the system
19 comes up, it would measure voltage on the DC side. Also
20 on the AC side it could be hooked up to the wrong type
21 of system. There are quite a few systems out there on
22 the AC side. When I say AC, I mean alternating current.

23 There are 480 volts, 208, 240, all types of
24 different voltages. In Canada there is 600. In Europe
25 there is all kinds as well. The inverters are again



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1 typically very limited on how much voltage rate they can
2 tolerate.

3 So all these voltage conditions are measured
4 with a D to A converter would be -- I am sorry analog to
5 digital converter would be a simple way to do it. There
6 are many other ways to do it quicker and more
7 bulletproof potentially just using references and up
8 amps, things like that to actually detect the voltage
9 and create a condition that would actually shut the
10 whole system down and disconnect it. So that is one
11 example.

12 Q So that was a very long answer, which I
13 appreciate, but a digital to analog converter is one
14 type of sensor; is that what I heard you say?

15 A I misspoke. I meant to say analog to
16 digital converter.

17 Q My bad. Analog to digital converter is one
18 type of sensor that would be used for an overvoltage
19 condition.

20 Is that what you were indicating?

21 A Yes.

22 Q Okay. And you were about to, I think, give
23 me some other types of sensors that would detect an
24 overvoltage condition. Again, the reason that I am
25 asking is that is what claim 1 requires.



1 If you can just please give me some
2 additional sensors that you can think of that relate to
3 it detecting an overvoltage condition, I would
4 appreciate that.

5 A There is an analog device called a
6 comparator, and it basically is a very simple device.
7 It detects two voltages and if one is higher than the
8 other, the output of this comparator goes a certain
9 logical way, either one or zero. And we can hookup a
10 reference on one that would be our constant and then
11 the other would be measuring the DC or AC voltage that
12 we are concerned with and that would be using a
13 resistor divider circuit you would bring the voltage
14 down to something, let us say, if it is a 600-volt
15 system, you would bring the voltage down to some small
16 value that the comparator can tolerate.

17 And so it would all be calibrated and
18 therefore if the comparator sees a voltage above a
19 certain value based on the reference, the comparator
20 would trigger and this could have all kinds of
21 implications in the system.

22 Q Comparator. What else?

23 A As far as detecting it?

24 Q Yes. Detecting an overvoltage. Sensors
25 that detect overvoltage conditions.



1 A Those would be the first two that come to
2 my mind.

3 Q I think further in your report in
4 referencing to Adest you reference a Hall-effect sensor
5 for doing this; is that correct?

6 A A Hall-effect sensor is brought up,
7 correct, but Hall-effect sensors sense current.

8 Q Give me a second, please.

9 Okay. If you can, since we are talking
10 about Hall-effect sensors, can you open up Adest which
11 is Exhibit 1005?

12 A I am there.

13 Q If you can go to column 9 and starting at
14 line 5 is where a majority of what you rely on in your
15 report starts. And if you can read that paragraph and
16 probably the paragraph below it just to refamiliarize
17 yourself with this part of Adest and then we can have a
18 chat, I would appreciate that.

19 A You are saying column 9 and line 9?

20 Q Line 5.

21 A Five. Thank you.

22 Q Through 50 basically.

23 A Okay. I am familiar again. Thank you.

24 Q Sure. So at line, I think it is 19, it
25 looks like 19 to me, the Adest reference says, The tap



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1 432 may be, e.g., a Hall-effect sensor. Then it says,
2 Series connected resistor across which the voltage drop
3 is measured, et cetera.

4 Is your reading of that sentence that two
5 different things are disclosed, a Hall-effect sensor and
6 a series connected resistor across or are those the same
7 thing?

8 A It is part of the same system.

9 Q I am sorry. I didn't ask a very good
10 question.

11 Does a Hall-effect sensor include series
12 connected resistor or is that something different than a
13 Hall-effect sensor?

14 A So a series connected resistor is simply a
15 current limiting device that once the voltage is
16 present will have a particular type of current flowing
17 through it. I mean, the basic operation of a resistor,
18 and in this particular context, the Hall-effect sensor,
19 as I read this, is going to measure the current in that
20 particular resistor.

21 It seems more a complex way of doing it then
22 I would do it, but it is definitely a way for it to
23 work. The interesting thing about a Hall-effect sensor
24 is it creates a voltage based on the current. So we are
25 back to actually measuring voltage again.



1 Q Okay. That is helpful.

2 What do you make of the et cetera word at
3 the end of that sentence? What do you think the POSITA
4 would understand why that is there? What was Adest
5 trying to indicate?

6 MR. MARSH: Objection. Form.

7 A I read this over and over, yes. It is not
8 very clear language.

9 Let me see what 432 is real quick.

10 Q Sure. And Figure 4B also kind of
11 illustrates the functionality. 432 is Tap.

12 A Okay. I understand now. I would like to
13 go back to your earlier question of is this the
14 Hall-effect sensor and the resistor, the relationship
15 between the two?

16 Q Yes. My question was, are those the same
17 thing or different things?

18 A Those are in fact different things. There
19 are two ways to measure. What they are trying to
20 measure is actually 412, the DC string. And we can
21 measure the voltage through this A to D converter,
22 which I mentioned earlier. The reason there is a
23 resistor there is to bring this voltage from this very
24 high voltage that is used in the solar plant down to
25 something that A to D can actually read. So that is



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1 just the basic -- it is not drawn correctly, but the
2 idea is understood that you have a ladder logic or
3 ladder resistor network that would bring the voltage
4 down.

5 The Hall-effect sensor, the way it is drawn
6 there and based on the language would imply that you are
7 measuring the current that is flowing through what is
8 shown as the DC string 412 and you can from the current,
9 again, that current would then through the Hall-effect
10 sensor create a proportional voltage, and proportional
11 voltage is meaningful to someone that is trying to
12 understand the current that is flowing on the DC string
13 412. They are slightly different ideas here. In one
14 case we are trying to measure current, and the other we
15 are trying to measure voltage.

16 Q Okay. Now going back -- that answers my
17 question on Adest in the contest of the overvoltage
18 because we were discussing paragraph 80 of your
19 declaration, and I would like to go back to paragraph 80
20 of your declaration.

21 A I am there.

22 Q And so we talked about overvoltage condition
23 and the sensors that you could think of for measuring or
24 detecting overvoltage conditions was an A to D
25 converter, a comparator and what I am hearing is you



1 would not put the Hall-effect sensor in that bucket
2 because it is actually detecting current and not
3 voltage. Did I hear you correctly?

4 A Well, it could be more complex than that.
5 There is a relationship between voltage and current of
6 course. So an overvoltage condition could
7 theoretically be measured by measuring the current,
8 although it seems like a fairly -- it is one way of
9 doing it if you know what the current -- the current
10 and the voltage are related to each other of course.
11 And so if the voltage goes up and we are trying to
12 drive a load that is resistive, the current will go up
13 as well.

14 There is other reasons to be measuring
15 current, and it could be that an engineer is trying to
16 value engineer and use less components. If they already
17 have the need for measuring current for whatever reason,
18 the Hall-effect sensor could in theory also provide some
19 measure of safety controls. So I would have to give
20 some more thought to this. It all depends on how this
21 thing is operating.

22 A more direct method is just to measure a
23 resistor directly, but it is not impossible to measure
24 an overvoltage condition by measuring current. It is an
25 indirect measurement.



1 Q Okay. The next anomaly that you have listed
2 in paragraph 80 is fire.

3 Do you see that?

4 A Yes.

5 Q What are some sensors that would be used in
6 the context of the '218 patent to detect fire?

7 A All right. So if I really take a big step
8 back and look at the state that we are in today and
9 also go back to the time that these inventions were
10 being created back in 2011 and earlier, there was
11 actually very little discussion of what we know now as
12 rapid shut down and the firefighters having issues
13 trying to put out fires on solar power plants.

14 Also, worker safety was not a large concern.
15 This is the really early days of solar power plants.

16 So fire, to defect that directly seems to me
17 almost as completely unproblematic to directly measure
18 fire. I have seen patents that talk about high
19 temperatures underneath the array and then those
20 temperatures sensors would then detect extremely high
21 temperature that can only be related to a fire and not a
22 hot day here in Phoenix at 125 or whatever. So,
23 obviously, this is a threshold where a temperature
24 sensor could detect something far higher than even a
25 normal operating day in the summertime.



1 So a temperature sensor would be a good
2 example of how to detect fires directly. It would have
3 to be installed in a very particular place in the array.
4 It is not impossible. None of these sensors today exist
5 in any installation that I have ever seen but, again,
6 that is not what we are talking about.

7 So the other way to detect fire is to know
8 that the National Electric Code and the response of
9 typically a first responder like a firefighter what they
10 do to a system or to an electrical system on a house or
11 a commercial building. If a firefighter approaches a
12 building that is on fire, they are going to have to be
13 you know, typically spraying water on this building.
14 The combination of wire and high power systems
15 electrical systems is potentially very dangerous or
16 lethal for firefighters.

17 So the approach for a firefighter is to shut
18 down what we call a service disconnect which are the
19 wires coming from the transformer from the utility. And
20 we have to be very careful to label all the service
21 disconnects on a building with solar on the building,
22 and firefighters are trained to go to those disconnects
23 and open the disconnects. And we have to actually list
24 how many there are and by law there is only so many. If
25 they are not in the same location, we have to actually



1 show maps for where single service disconnect is located
2 on a building.

3 So once the firefighters have shut the power
4 plant and the building down, when I talk about power
5 plant, I am talking about the solar power plant, that is
6 also detectable by the solar power plant.

7 Since the solar power plant is actually to a
8 large extent operational independent of the grid, it is
9 still powered by the sun, and so it is able to detect
10 that the grid is no longer present. And if the grid is
11 no longer present because the firefighter shut it down,
12 then at that point it is imperative actually, it is
13 required by AAA testing and UL standard testing and by
14 Electric National Code standards that at that point the
15 inverter, although it has DC power coming in from the
16 array, the inverter itself would detect that the AC
17 voltage is no longer present. It would infer from that
18 that the grid is down for whatever reason. And at that
19 moment what we would probably call the MMU or the system
20 controller here would issue a command to all the modules
21 or any related controls around the modules to actually
22 turn off the modules down to a voltage that is
23 acceptable for firefighters which tends to be a fairly
24 low voltage.

25 So it is a long-winded answer, but that is a



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1 way to detect fire is through indirect measurement of
2 what the status is of the grid.

3 Q So what I heard is there is basically two
4 ways, direct way, not nearly used, you would have
5 temperature sensors in the ground which would or under
6 the grid which would communicate that there was an
7 abnormal temperature relative to ambient; is that what I
8 heard?

9 A No.

10 Q Okay. Explain that first one, the direct
11 measurement then.

12 A The direct measurement would require a
13 temperature sensor mounted in the array.

14 Q In the array.

15 A It would be underneath typically one of the
16 solar PV modules. It would have to be placed in a very
17 particular location. It would be probably on the top
18 edge of a sloped roof.

19 If you are talking about a commercial power
20 plant, it would be extremely difficult to locate these
21 sensors in the right places so that a fire would be
22 detected. Again, this is why it is not measured
23 directly.

24 Q Okay.

25 A You can imagine a Walmart situation with



1 tens of thousands of solar panels on the roof and you
2 are trying to figure out where I am a going to measure
3 directly if there is a fire. You are almost guaranteed
4 to not be able to do this.

5 Now, if every single module had an optimizer
6 and a micro-inverter, which means that there is local
7 electronics to every module, theoretically then you can
8 place a temperature sensor at the micro-inverter like
9 what we call the LMU here and the LMU could then detect
10 a very high temperature on that particular module, and
11 then that high temperature could be reported back to the
12 MMU, and then that would be the reasons for the MMU to
13 issue the command to shut everything down.

14 So it is possible, although I have never
15 seen it, that every single, every single module would
16 have its own sensor.

17 Q Thank you. So that is a great clarification
18 of the direct method.

19 The indirect method, what I heard was in the
20 inverter there is a detection of the absence of AC
21 current which indicates the inverter the grid is down;
22 did I hear that?

23 A It would be voltage, not current.

24 Q AC voltage. I did write down voltage. I
25 just said it wrong. Okay.



1 So to restate, one way to detect a fire is
2 to realize the absence of AC voltage to the inverter
3 which indicates the grid is down?

4 A Yes.

5 Q Okay.

6 A Now, using the Hall-effect sensor, if the
7 inverter has no voltage on the AC side, the standards
8 for the inverters require that the inverter of course
9 cease operation. It is something called islanding.
10 And the issue is that if an inverter continues to
11 provide a voltage into a grid that does not exist, then
12 a photovoltaic inverter goes into a state that is
13 called islanding. It thinks it is hooked up to a grid
14 but it isn't and then firefighters would still be
15 electrocuted.

16 So assuming that islanding detects that it
17 is not connected, the islanding controller and the
18 controls inside the inverter detect that the voltage is
19 no longer present, what immediately would happen is that
20 the islanding control of the inverter would require that
21 the inverter be shut down as far as the conversion from
22 DC to AC.

23 There is a lot going on inside an inverter,
24 but the most important thing is converting direct
25 current to alternating current. And the moment that the



1 inverter is no longer converting DC to AC, the DC
2 conductors going into the inverter would also have still
3 potentially voltage across them, but the current would
4 drop to zero or something close to zero. And going back
5 to the Hall-effect sensor, the Hall-effect sensor would
6 then read zero current. So that is yet another way of
7 detecting indirectly that the grid is gone, the
8 islanding controller is turned on and it has shut down
9 the inverter and that results in the DC current dropping
10 to zero and, obviously, the inverter at that point
11 already knows it is shutting down because the
12 microcontroller inside the inverter triggered the shut
13 down in the first place. So the Hall-effect sensor
14 would just confirm that, in fact, the system is shut
15 down at that point.

16 Q Okay. The last definitive anomaly you have
17 here is smoke.

18 Can you give me some smoke sensors in the
19 context of the '218 patent?

20 A So within my house today I purchased, I
21 have two electric cars and a solar power plant and of
22 course this technology is relatively new. Every so
23 often you hear about electric car fires during charging
24 or there is a lot of power flowing in my house
25 suddenly, especially into the garage.



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1 So one of the first things that I did is I
2 installed new smoke detectors. And these smoke
3 detectors networked together through a wireless network.
4 So the one in the bedroom would trigger at the same time
5 the one in the garage would trigger.

6 And so using that example, smoke detectors
7 of course can be inside the building or at any strategic
8 place where it makes sense and, in theory, it would be
9 possible for an inverter to be or an MMU to be
10 configured to be part of that network in the fire
11 detection or smoke detection but it would have to be
12 inside the building. It would have to be part of an
13 overall system and they would have to be compatible with
14 each other.

15 Q Okay. So what I am hearing is, just tell me
16 if I am wrong, is a typical household smoke detector
17 could be used in this context as long as it was
18 connected correctly with the system? Is that what I am
19 hearing?

20 A The PV system, yes.

21 Q So just going back to claim 1 then of the
22 '218 patent, if we look at the limitation just below the
23 one we were discussing, it says, Whereupon detection of
24 the anomaly by the sensor, now there has to be detection
25 of the anomaly by the sensor, the claim requires that,



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1 the MMU sends a command to the LMU to alter the state of
2 an associated solar module.

3 Do you see that?

4 A Yes.

5 Q What is your understanding of the phrase
6 "sends a command"?

7 A It is extremely broad. As far as I recall
8 reading through all these patents generally, when we
9 are talking about sending commands, we are not limiting
10 ourselves to anything in particular. In fact, a lot of
11 times what is mentioned is you can have a separate
12 control signal over a wire. You can use wireless. You
13 can use modulated signals over the DC conductors
14 themselves.

15 So sends a command is extremely broad. The
16 word command itself is extremely broad too. It can be a
17 coded message or it could just be as simple as 01 state
18 and everything in between.

19 Q Can you please turn to page 19 of your
20 declaration and read paragraph 41?

21 A I have read the paragraph.

22 Q So the very first sentence you say, When
23 detecting anomaly, and you have a parenthesis, e.g. via
24 the local sensor shown in Figure 22, end parenthesis, a
25 master management unit may send a command to the LMU to



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1 alter the state. It looks like you are referring to
2 Figure 2 in this context -- Figure 22. I apologize.

3 A Yes.

4 Q In the context of Figure 22, how is the MMU
5 sending a command?

6 A We would have to go to the '218 patent to
7 look at an exhaustive list.

8 Q I don't think that we have to. I think it
9 is spelled out pretty well in column 19, if you just
10 want to go to column 19.

11 A Column 19?

12 Q Column 18 starting at line 6 through column
13 19 at line 29 is where the discussion of Figure 22 and
14 23 are which are tied together. If you want to read
15 those two paragraphs and let me know when you are
16 finished.

17 A I am sorry. Column 19 and what were the
18 lines?

19 Q Let me start over. You have Figure 22 on
20 page 19. So to start you off, on Figure 22, that
21 discussion begins at column 18, line 6 and the operation
22 of Figure 22 is discussed in the context of Figure 23,
23 which means that to get a full understanding of what the
24 '218 patent is talking about in the context of Figure 22
25 you need to read lines 18.6 through 19, basically 29 of



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1 the '218 patent.

2 A Okay. Understood.

3 Q Thank you. Just let me know when you are
4 ready.

5 A I have read through 18, 6 through 19, 29.
6 I looked at Figure 22 and 23. I am familiar with it
7 again.

8 Q So going back to paragraph 41 of your
9 declaration which is on page 19, my question was, how
10 does the master management unit send a command to the
11 LMU as recited in this paragraph 41?

12 A How does it send?

13 Q Paragraph 41 says, When detecting anomaly, a
14 master management unit may send a command to the LMU.

15 How does it send that command?

16 A So as I read 18, 6 through 19 29 in the
17 patent, it did not actually talk about the actual
18 sending of the command. It was mostly the types of
19 sensors and when anomalies would be detected and how
20 those anomalies would be processed and brought to the
21 attention of the MMU.

22 Now, from how it is sent between the MMU and
23 LMU, I did not read, at least right now, anything in
24 particular about how that signal is sent.

25 Q Let us look at column 19, line 8 for



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1 instance. So in operation --

2 A One second. I am not there yet.

3 Q I am sorry. My bad.

4 A Column 19. What line?

5 Q Line 7 or 8. I cannot tell which one. It
6 begins with the sentence, In operation 3027.

7 A Hold on. So you are talking about the '218
8 patent, column 19, correct?

9 Q Correct.

10 A Okay. And line number 7?

11 Q Or 8. I am not sure which one.

12 Do you not see the language, In operation
13 3207? I want to make sure we have the same document.

14 A Yes, In operation 3027 the program checks,
15 based on some preexisting values and rules, right. So
16 it does not explain at all how the LMU and MMU
17 communicate.

18 Q That is just the beginning of how this is
19 going because we are operating in safety mode and we
20 move to normal mode.

21 So in operation the program checks, based on
22 some pre-existing values and rules, including, for
23 example, it lists some stuff, whether any of the query
24 results indicate a shut down anywhere in or in all of
25 the solar array. If no, the program ends, so the



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1 software stops asking. If yes, the process moves to
2 operation 3208, where the program sends out commands to
3 the indicated units, which commands could shut down or
4 disconnect the inverter. That is where the sending
5 command language is recited in the '218 patent.

6 So I am asking in that context, how does the
7 master management unit send out commands?

8 As a person of ordinary skill in the art,
9 how do you interpret that?

10 MR. MARSH: Objection. Form.

11 A So a person, a POSITA in this particular
12 case would think of a number of ways of sending this
13 command. It is a very complex, it is a very complex
14 tradeoff, unfortunately.

15 If reliability is the most important aspect
16 as far as long-term reliability of a system, it is not a
17 good idea to have complex wireless technology when it
18 comes to sending commands anywhere.

19 So a wired, simple wired solution would be
20 one of the most simple low cost and most reliable ways
21 of doing it, most control circuits, would have to be
22 very reliable. It would be simple wires and simple
23 voltages occurrence would be what triggers, in this
24 case, a shut down.

25 And this is close and dear to me obviously



1 because in the inventions that I have this is exactly
2 the tradeoff that I chose is to keep it simple.

3 The downside of doing a wire is that the
4 installation becomes more complex. You have to now run
5 DC wires for power and also control circuits and wires.
6 And so that is one way of doing it.

7 The other way is to send it, I would call it
8 wireless, although I do not necessarily mean literally
9 wireless because, as it is done today, it would be using
10 a DC wire as a medium to actually transmit a signal in
11 addition to the power. So it is a very common method.

12 So power lines can be modulated with signals
13 and then receivers can filter those signals off or just
14 split those signals off and convert them to something
15 meaningful to a computer. Of course you can use
16 over-the-air wireless as well, like Bluetooth or WIFI.

17 But both of these wireless solutions that we
18 are talking about here require basically a full-blown
19 computer and networking capabilities. We are talking
20 millions of transistors as opposed to a wire solution
21 which will require a handful of transistors to make the
22 same operation.

23 So if you are concerned about reliability
24 and cost but not as much to the installation, you would
25 chose one method; and the other method would be to use



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1 some form of wireless technology. It is not spelled out
2 here. It does not explain which way the commands would
3 be sent?

4 Q Give me an example of a typical way to send
5 a command in this context.

6 MR. MARSH: Objection to form. Vague.

7 A Typical today to be clear?

8 Q Typical as of 2011 or 2007 or whatever you
9 want to apply as the priority date of the '218 patent.

10 A I got you. So it would be over the wire on
11 the DC conductors. It would be a signal that is
12 modulated on top of the conductors.

13 Q Okay. And the MMU would send that command
14 to the LMU per the claims, correct? I mean, the claims
15 require that is what I mean by that?

16 A In this particular moment, yes, the LMU and
17 the MMU are actually, as I understand it,
18 bidirectional. They can communicate with each other
19 but in this case the MMU talks to the LMU.

20 Q If we go down back to the patent, I am going
21 to go back to claim 1 now, please, if you can get back
22 to claim 1 yourself.

23 A I am there.

24 Q So under the send a command limitation we
25 were just talking about there is another wherein clause



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1 that says, upon receiving a command from the MMU. So --

2 A I am sorry. Hold on. Let me get there
3 first.

4 Q I am sorry. I thought that you said you
5 were there. My bad.

6 A So you are talking about claim 1 and you
7 said upon receiving?

8 Q It is line 49.

9 A There we go. Yes, I am there. Whereupon
10 receiving a command from the MMU, the MMU alters the
11 state of one or more solar modules in accordance with
12 command.

13 Q So this claim requires, you would agree, I
14 believe, that the MMU sends a command and the LMU
15 receives the command? Do you see that expressed
16 language in claim 1?

17 A I see that.

18 Q Okay. So just to continuing on with that --
19 I am sorry. Let me just check my note. I apologize.

20 All right. So going back to your
21 declaration, I am sorry to jump around so much, it is
22 page 19 of your declaration which we were just at.

23 A Yes.

24 Q In 41, I forgot to ask you, the very first
25 sentence I think there is a typo. I am not sure. It



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1 says, when detecting anomaly.

2 Do you mean to say when detecting an anomaly
3 or anomalies or I am not sure what you mean there?

4 A Your interpretation is correct. Either
5 would be correct.

6 Q Okay. And then just above paragraph 41 in
7 paragraph 40, in paragraph 40 you say, The LMU may
8 output signals via wire to wireless connection. And
9 then you say the LMU's controller may incorporate
10 watchdog code to perform shut down functions.

11 I am trying to understand what you mean by
12 watchdog code. Can you tell me what you mean there?

13 A I think we established that the LMU could
14 be implemented with a microcontroller. So in that
15 context the code that would implement a watchdog
16 function, as a watchdog is defined back, and that is
17 why we have the definition of watchdog included as part
18 of the exhibits, this can be implemented numerous ways.

19 A watchdog can be implemented with software
20 or with circuits as we have also talked about in length
21 with Kronberg.

22 So this is a different issue actually than
23 we have been talking about so far. The watchdog code
24 would be in the LMU for a different purpose than we
25 discussed so far.



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1 Q So there is two things there that I want to
2 discuss. The first one is this different purpose, but
3 we will get there. The second is you said the word
4 code.

5 When you say the word code in paragraph 40,
6 are you indicating a software instance?

7 A Yes.

8 Q Okay. So why don't you then talk about this
9 second one which is use for a different purpose.

10 What did you mean by that when you were
11 speaking just a minute ago?

12 A So the watchdog function is a safeguard for
13 the LMU to understand that it is still connected to an
14 MMU is one possible reason the watchdog would exist.

15 So the LMU could go AWOL so to speak and the
16 MMU can be communicating to the LMU that it should shut
17 down if there was a fire for example, but the LMU is no
18 longer receiving any signals from the MMU and it would
19 then continue to operate which would create a danger.

20 Q Maybe I not following. How does that relate
21 to the watchdog code of paragraph 40? I was not
22 following that logic.

23 A I am glad to explain.

24 So an LMU, if it is to be robust, we and are
25 talking about all forms of communication, even wired, so



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1 an LMU is out there. It is either connected with a thin
2 little control wire or at the end of very long wire
3 trying pick up signals or it is receiving commands over
4 a wireless interface and any of those three conditions
5 can cause interruption of the ability for the MMU and
6 the LMU to communicate either direction.

7 So to safeguard the LMU as it is operating,
8 it would have to make sure that it is always in some way
9 connected to the MMU. And the way that an LMU would
10 make sure that it is connected to an MMU is through a
11 watchdog circuit or a piece of code in this particular
12 case.

13 Q Okay.

14 A If the watchdog were to trigger, it would
15 imply that the communication has been broken and at
16 that point the default condition for the LMU is to shut
17 down.

18 Q Okay. Are you done?

19 A Yes.

20 Q All right. Thank you.

21 We have been going about an hour. I am
22 about to move into a different module. Are you okay if
23 we take a five-minute break and then start?

24 A If we can make it ten, that would be even
25 better.



1 Q Ten minutes is fine. We will see you in ten
2 minutes.

3 A Okay.

4 THE VIDEOGRAPHER: We are going off the
5 record at 1:45 p.m. Pacific standard time.

6 (Recess was taken.)

7 THE VIDEOGRAPHER: We are back on the record
8 at 1:55 p.m. Pacific standard time. Counsel.

9 Q Great. Welcome back, Mr. Dunton. If you
10 can please go to page 28 of your declaration, paragraph
11 62.

12 A I am there.

13 Q Okay. So in paragraph 62 you have a table;
14 is that correct?

15 A Correct.

16 Q And there are four different grounds listed
17 which I understand to be your proposed grounds of
18 invalidity of the '218 patent; is that right?

19 A Yes.

20 Q The first ground relies on Adest in view of
21 Kronberg, correct?

22 A Yes.

23 Q And the second is Adest in view of Kronberg
24 and then Goldack, correct?

25 A Yes.



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1 Q And then the third is Moine in view of
2 Adest, right?

3 A Yes.

4 Q And then fourth and last ground that you
5 propose is Moine in view of Adest and/or Goldack,
6 correct?

7 A Yes, that's correct.

8 Q So let us go through ground one which begins
9 on page 29. Why don't you refamiliarize yourself with
10 paragraphs 65 through 70 and let me know when you are
11 ready.

12 A I am done.

13 Q Great. So this part of your declaration
14 relates to limitation 1B of the '218 patent, correct?
15 Let me direct you to page 30, the header which says 1B,
16 a master management unit.

17 Mr. Dunton, do you understand the question?

18 A I understand the question. I am checking
19 my answer here.

20 On page 30 of my declaration?

21 Q All I am trying to tie is that you just
22 reviewed paragraph 65 through 70 and that is because I
23 am going to ask you about limitation 1B which is the
24 header for this particular section. No trick questions.
25 I am just trying to make it clear for the record.



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1 A A master management unit; and.

2 Q Right. Right below that you say, in
3 paragraph 65, Adest discloses/suggest this feature.

4 When you say "this feature," I understand
5 you to mean limitation 1B.

6 Is that a correct understanding?

7 A Yes.

8 Q Okay. So paragraph 65 through 70 contain
9 your opinions as it relates to limitation 1B at least in
10 this context, correct?

11 A Yes.

12 Q And so after your review, my understanding
13 of your report is that you are proposing the signaling
14 mechanism of Adest to disclose the claimed MMU. Am I
15 right in that understanding?

16 A I am sorry. I have another phone here that
17 just went off. Let me get rid of it.

18 Q Sure.

19 A Sorry.

20 Q I will repeat the question.

21 A Yes, please.

22 Q For limitation 1B, which is the master
23 management unit, my understanding is that you are saying
24 Adest signaling mechanism discloses the master
25 management unit.



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1 Am I correct in that understanding?

2 A I need a moment.

3 Q Sure. If you want some help, you can look
4 at paragraph 70 towards the end.

5 A That's correct.

6 Q Just to be clear, it is correct that you are
7 proposing the signaling mechanism of Adest is the MMU
8 that we are claiming in the '218 patent, correct?

9 A Correct.

10 Q Okay. So then similarly, and we will do
11 this for the next several limitations, if you can look
12 at limitation 1C and refamiliarize yourself with that
13 and refamiliarize yourself with the opinions on
14 Limitation 1C which go through paragraph 72 through 76
15 and just let me know when you are ready.

16 A I am ready.

17 Q Great. If we look at limitation 1C, which
18 is on page 33, if I am reading your declaration
19 correctly, it appears that you are proposing that the
20 power module of Adest discloses the claimed LMU.

21 Am I right in that?

22 A The power module -- let us make sure. Four
23 or five, yes.

24 Q Right.

25 A That is correct.



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1 Q Okay. We have the signaling mechanism that
2 you are saying is the MMU and we have the power module
3 of Adest which what you are saying is the LMU.

4 In that context, what is your definition of
5 signaling mechanism?

6 MR. MARSH: Objection. Form.

7 A The mechanism consists of, in the case of
8 Adest would be an example given at 100 Hz signal and it
9 would be transferred over the DC wires, which is shown
10 as 412 and 410. And then the receiver 207 and the
11 combination of the signal generated near 420 traversing
12 the wire 412 and 410 being received by 207 would be the
13 mechanism.

14 Q Can you turn to page 12 of Adest which shows
15 Figure 4B?

16 A What is the exhibit number for this?

17 Q I am sorry. It is Exhibit 1005.

18 A Thank you. I am sorry. What page and what
19 column?

20 Q Page 12 of the PDF just illustrating the
21 Figure 4B.

22 A I am there.

23 Q And so if you look at Adest disclosure,
24 signaling mechanism is defined to be 420, correct. And
25 that was disclosed when we reviewed column 9 of Adest



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1 and you can go back and look at that if you want.

2 A 420 is the signaling mechanism, correct.

3 Q So then I just asked you what your
4 definition of signaling mechanism is, and you added a
5 bunch of things that are outside of 420.

6 So are you adding stuff to your signaling
7 mechanism or are you just relying on the signaling
8 mechanism 420 as shown in Figure 4B? For instance, you
9 put receiver 207 as part of the signaling mechanism,
10 which I do not understand that to be part of your
11 opinion. Am I misunderstanding?

12 A I took the literal sense of signaling
13 mechanism, not the block, so let me go back here.

14 Q Okay.

15 A Yes, I misunderstood. When you said
16 signaling mechanism, I understood the system which
17 signals between the various components and all the
18 components required to make that signal transmitted.
19 As far as I understand, you meant the signaling
20 mechanism 420.

21 Q Right. I am relying on your --

22 A Yes.

23 Q -- opinion of 420 because that is what you
24 used for limitation 1B.

25 When you say signaling mechanism, what does



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1 that mean in the context of Adest and 420?

2 A Correct. Okay. So now I am back.

3 So 420 is the signaling mechanism. All
4 right.

5 All right. So I will need you to get me
6 back on track here.

7 Q My question is, what is your definition of
8 signaling mechanism because you are using it to go after
9 limitation 1B and you are using Item 420 which is a
10 signaling mechanism, so I am wondering if you have a
11 definition of signaling mechanism that you are applying?

12 MR. MARSH: Objection. Form.

13 A I understand the question.

14 So, yes, the 420 is the equivalent of the
15 MMU as in 420 is defined as a signaling mechanism would
16 be equivalent of the MMU in the, in the patent Exhibit
17 1001.

18 Q Okay. Do you know what it means in the
19 context of patent law to be your own lexicographer?

20 A To be what?

21 Q Your own lexicographer.

22 A No.

23 Q Okay. If you can please turn to column 2,
24 line 65 of Adest, Exhibit 1005, and read that.

25 A I am sorry. I am on Exhibit 1005. What



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1 column?

2 Q Column 2, line 65.

3 A Line 65?

4 Q Yes.

5 A Okay. I am there, and I agree.

6 Q So you agree that provides a definition of
7 signaling mechanism; is that what you mean by I agree?

8 MR. MARSH: Objection. Form.

9 A So a signaling mechanism is a very broad
10 term here as defined in Adest. As you can see, it
11 talks about the modulated or large magnetic carrier
12 signal of the two wireless techniques that I mentioned
13 earlier where the unmodulated signal is the on/off
14 signal and typically would be transmitted over a wire
15 as I mentioned earlier. So the signaling mechanism is
16 kept very broad here under Adest and it includes the
17 three that I mentioned earlier.

18 Q So when I say a patentee is their own
19 lexicographer, that means that they get to define their
20 terms.

21 Do you know what that means now?

22 A Yes.

23 Q So that means that Adest has specifically
24 defined what his signaling mechanisms are, correct?

25 MR. MARSH: Objection. Form.



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1 A They have defined a few examples. I am not
2 sure if it is a finite list or let me keep reading this
3 a little bit further.

4 Q Let me just read it to you out load. It
5 says, The term signaling or signaling mechanism as used
6 herein refers to -- there is no wiggle room in that
7 language -- to either a signal modulated on an
8 electromagnetic character signal, option one, or option
9 two, a simple unmodulated signal such as and it goes on
10 to list the options, correct?

11 MR. MARSH: Objection. Form.

12 A It goes on to say that the modulation
13 method may be -- they are examples and it shows further
14 detail on over-the-air transmissions and then the
15 coding techniques like PSK are brought up and QAM, and
16 then it says or any other method of modulation. So it
17 is very broad. It is over the wire in this particular
18 case but also wireless in the sense of transmitting it
19 over air.

20 So I would agree that we have covered pretty
21 much everything that is possible via a wire, like the
22 keep alive signal or dry contact or over the air or over
23 the wire signaling.

24 So, as I mentioned earlier, those are the
25 three techniques that I am familiar with, and this



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1 particular Adest terminology is fairly clear and he is
2 defining it that same way.

3 Q Okay. So again we agree, I think, that
4 Adest in column 2, line 65 provides a definition for
5 signaling mechanism, correct?

6 MR. MARSH: Objection. Form.

7 A It does define it as a, as a method, yes.

8 Q Do you have a different understanding of the
9 words "as used herein" refers to other than defining?

10 MR. MARSH: Objection. Form.
11 Argumentative.

12 A I am struggling to --

13 Q So the language says that signaling or
14 signaling as used herein refers to.

15 A Right.

16 Q Do you believe that that is not defining
17 what a signaling mechanism is?

18 MR. MARSH: Objection. Form.

19 A So I will try to explain my reluctance to
20 answer that so directly.

21 The block diagram calls out a signaling
22 mechanism as a block and it is connected, in the
23 description of this particular invention it is described
24 as something that is attached to an inverter.

25 And, in fact, that is how many inverters



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1 today actually work and in the past that was not the
2 case. This was forward-looking. So this was actually
3 very smart of them to include it that way.

4 And then it is a block in the block diagram
5 in the figure. But here in this definition on line 65,
6 column 2, they are giving a very detailed spectrum of
7 ways of implementing this and they are emphasizing the
8 ways that this signal can be transmitted. It is more
9 of, I guess an implementation or method instead of a
10 block.

11 So if we keep it broad and loose, I think if
12 you are going to call 420 everything that is encompassed
13 within this line 65 down, then 420 you can call it a
14 signaling mechanism and it could be described as a block
15 and in a block diagram figure. It is understood that
16 everything here that is described from line 65 down
17 would be contained within the block. So I could agree
18 to that.

19 Q I am not sure what you are agreeing to.

20 Can you tell me what you are agreeing to,
21 that if 420 is subsumed within the definition of
22 signaling mechanism you agree? I am not following what
23 you are saying.

24 A Subsumed? Can you say that a different
25 way? I am not sure I understand subsumed?



1 Q All I am trying to point out is that Adest
2 literally defines signaling mechanism by using the words
3 as used herein refers to. I am just wondering if you
4 agree that is a definition provided by Adest, and you
5 are not sure that you can agree is what I heard.

6 Am I hearing this wrong?

7 MR. MARSH: Objection. Form.

8 A So it is clear that their definition of
9 signaling mechanism is a number of forms of
10 transmitting a signal. That is very clear.

11 Going back to the figures, the block that
12 shows the block signaling mechanism would contain these
13 methods. I can agree to that.

14 Q Okay. Fair enough.

15 Did you apply this definition of signaling
16 mechanism when you were comparing Adest to the claims of
17 the '218 patent?

18 MR. MARSH: Objection. Form.

19 A I would need to go look at the '218. Let
20 me think about this for a second.

21 Q Take your time.

22 A All right. I am ready.

23 Q Do you remember the pending question?

24 A Right. So the '218 patent describes
25 communication and forming of commands and the signaling



1 mechanism in Adest is a much more narrower portion. I
2 do believe it is the carrier, if you will, of this
3 command.

4 So a full system comprises of different
5 pieces here. There is something in the 420 signaling
6 mechanism from Adest that would also need to be, I guess
7 it would need to be distinguished between different
8 types of commands to be sent, and that is not in the
9 definition here on line 65 onwards. This is more just
10 how the signal is transmitted.

11 Q Okay. Let me ask it again because maybe
12 when you were reviewing you did not quite understand
13 what I was asking.

14 My question was, when you are comparing the
15 prior art of Adest to the limitation, did you apply the
16 definition of signaling mechanism used by Adest in that
17 analysis?

18 MR. MARSH: Objection. Form.

19 A Is there another approach that you can take
20 to make it, maybe break it down a little bit more for
21 me here? I am bouncing around with some concepts here
22 and I am struggling to --

23 Q I think it is a very basic question. The
24 patent Adest provides a definition of signaling
25 mechanism. I am asking if you applied it when you



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1 compared it to the prior art?

2 MR. MARSH: Objection. Form. Assumes
3 facts.

4 A If I compared it to the prior art?

5 Q I am sorry.

6 A This is the prior art.

7 Q Let me rephrase the question.

8 The Adest patent has a definition of
9 signaling mechanism. You used signaling mechanism in
10 your analysis to argue that limitation 1B was disclosed
11 by Adest.

12 My question is, did you use this definition
13 that is listed in Adest in that analysis?

14 MR. MARSH: Objection. Form.

15 A 1B. We are jumping between 1B and 1C and
16 that is where I am tripping up.

17 Q I am not. 1B is the one that says signaling
18 mechanism. 1C relates to the power module which is why
19 I made sure what the differences were. Limitation 1B is
20 where you tie signaling mechanism to the MMU.

21 A Okay.

22 If we go to paragraph 69 of my declaration,
23 Adest discloses a signaling mechanism 420 which
24 superimposes a signal on serail string 423. And this
25 over the wires, as I mentioned, 412 and 410. This is



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1 the, I believe that this is, in my opinion, the
2 equivalent to the communication between the MMU and LMU
3 or, in other words, the MMU is the signaling mechanism
4 in the case of '218.

5 Q Sorry. Are you on page 32, paragraph 69 of
6 your declaration?

7 A Yes.

8 Q And are you reading from the text there or
9 what are you doing?

10 A No. I started and then I went on.

11 Q So if we look at paragraph 69 though, you
12 say, the signaling mechanism 420 refers to either.

13 Do you see that?

14 A Yes.

15 Q So did you apply the definition of signaling
16 mechanism in your analysis?

17 MR. MARSH: Objection. Form.

18 Q The reason I am saying that, if you look at
19 your pen cite, which is 263 to 31, that appears to me to
20 be the definition of signaling mechanism.

21 MR. MARSH: Objection. Form.

22 A I am sorry. Can you point to the second
23 part of your thought there?

24 Q Sure. Just look at paragraph 69.

25 Are you seeing that?



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1 A Yes.

2 Q In the middle of the page it says, The
3 signaling mechanism, and that is in color, and then you
4 have a quote and it says refers to, and at the end of
5 the quote there is a pin cite to 2:66-3:1?

6 A Yes.

7 Q Isn't that the definition of signaling
8 mechanism?

9 MR. MARSH: Objection. Form.

10 Q Mr. Dunton, I don't want to hurry you. It
11 has been, in my calculation, over five minutes since I
12 last asked my question. It is relates to the pin cite
13 in the Adest patent and whether you applied that or not.

14 Do you have an answer for me?

15 A If I apply that definition?

16 Q In your analysis.

17 MR. MARSH: Sorry, what is the question that
18 is pending, Counsel?

19 Q I am looking at the transcript. Hold on.

20 MR. MARSH: Okay.

21 Q I can just scroll back up. So my question
22 was, did you apply the definition of signaling mechanism
23 in your analysis?

24 MR. MARSH: Sorry. Just to be clear, which
25 definition?



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1 Q The definition that Adest provides, starting
2 at column 2, line 65 through line 3, it looks to be like
3 eight?

4 MR. MARSH: Objection to form.
5 Mischaracterization. Go ahead.

6 A So did I apply that to the definition of --

7 Q Let's just take this slow. We agreed
8 earlier referring to your report that limitation 1B you
9 are using signaling mechanism 420 of Adest to read on
10 the master management unit, correct?

11 A Correct.

12 Q So my question from there is a simple one.
13 Did you apply the definition of signaling
14 mechanism as recited in Adest at column 2, line 65
15 through column 3, line 8 in that analysis? That is my
16 pending question.

17 A In the analysis of?

18 MR. MARSH: Wait a minute. Objection.
19 Form.

20 Go ahead.

21 Q Of limitation 1B.

22 MR. MARSH: Same objection.

23 A I did.

24 Q And that is because you cited herein
25 paragraph 69, correct?



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1 MR. MARSH: Objection. Form.

2 Q Do you understand the question?

3 A I am not at 69 yet.

4 Q For the record, that is paragraph 69 of your
5 declaration.

6 A So it is in quotes actually in paragraph
7 69. The signaling mechanism is defined, as you pointed
8 out. And so I am not sure I understand the question
9 still because I am declaring that that is how I defined
10 it.

11 Q Okay. We will move on.

12 If you can please, now let us look at
13 limitation 1D which begins on page 36 of your
14 declaration. If you can please look at that and the
15 corresponding paragraphs below that which appear to be
16 paragraphs 77 through 81.

17 A I am ready.

18 Q Okay. So for limitation 1D it looks as if
19 you are proposing to use the Hall-effect sensor as the
20 sensor of limitation 1D; is that correct?

21 A One embodiment.

22 Q Why do you have the Hall-effect sensor in
23 paragraph 79 then?

24 A It is an example.

25 Q So it is one example of a sensor that you



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1 are applying in the context of limitation 1D?

2 A As it says, one embodiment of the sensor is
3 a Hall-effect sensor, can monitor components and detect
4 anomalies. It is just one example.

5 Q Okay. And one of the conditions that Adest
6 discloses as being an anomaly is the overvoltage
7 condition; is that correct?

8 A Correct.

9 Q If you can now look at limitation 1E of your
10 opinion and refamiliarize yourself with paragraphs 82
11 through 87 and let me know when you are ready.

12 A 82 through where?

13 Q It looks like 87 in your report.

14 A Okay. Yes.

15 I am ready.

16 Q All right. So in looking at your
17 declaration, let's walk through Adest and what it
18 discloses.

19 So in paragraph -- let me be clear here. So
20 looking at your paragraph 83, you cite Adest at
21 column 9, 34 through 49.

22 Do you see that?

23 A Yes.

24 Q Then that flows into column five or, excuse
25 me, a discussion of Figure 5 which you start discussing



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1 and you refer to actually Figure 5A, excuse me, and it
2 might be helpful to go through Figure 5 first and just
3 help me with my understanding.

4 So if we look at column 9, line 60 of Adest;
5 do you see that?

6 A Let me jump over to that.

7 Q Let me begin at line 50, Figure 5.

8 A So I am in Adest right now?

9 Q Yes.

10 A In column 9?

11 Q Yes.

12 A And down to?

13 Q Line 50.

14 A Reference is now made to Figure 5 which
15 illustrates the simplified method, et cetera?

16 Q Right. In step 501, active control
17 circuits, microcontroller are turned on.

18 Do you see that?

19 A Yes.

20 Q The module 205 and 405 begin operation in
21 safety mode.

22 Do you see that?

23 A Yes.

24 Q And that safety mode continues because no
25 signal is being received, correct?



1 A Yes.

2 Q So if we go down, it says, Controller
3 maintains safety mode until a communication signal is
4 received from either the inverter 204 or the signaling
5 block and the signaling block is what I understand you
6 are using as the MMU, correct?

7 A Yes.

8 Q All right. So when the signaling
9 communication is received indicating inverter 104 or 204
10 is connected and converting power; safety mode of
11 operation ends, right?

12 A Yes.

13 Q And we go to normal mode when the
14 communication signal is received, module 405 preferably
15 enters a normal mode, typically with a maximum power
16 point tracking, right?

17 A Yes.

18 Q The normal mode of operation -- excuse me.
19 I should not have said mode.

20 The normal operation of transferring power
21 is maintained as long as the communication signal, e.g.
22 100 Hz is received from the inverter or signaling
23 mechanism and no other warning condition is present,
24 right?

25 A Yes.



1 Q So the way Adest functions, it starts in
2 safety mode because there is no signal being sent,
3 correct, from the signaling mechanism or the inverter to
4 the controller, right?

5 A During power up, yes.

6 Q Right. It starts in safety mode and to get
7 to normal mode it will only go to normal mode if it is
8 getting the communication signal which can come from
9 either the inverter or the signaling mechanism, right?

10 A Yes.

11 Q If it does not detect that signaling
12 mechanism, then the controller shuts off and goes back
13 to, I guess, safety mode; is that right?

14 A It does not turn off. It just stays in a
15 benign state.

16 Q Well, I am going to read what it says in
17 column 10. If the communication signal is not detected
18 or another warning condition is present, the normal mode
19 is typically ended and power conversion of modules is
20 typically turned off.

21 A The power conversion, yes.

22 Q The power conversion is turned off, okay.

23 So --

24 A That assumes it is in a different state to
25 start with. It was already converting. It was passing



1 safety mode. It did not receive the signal and then
2 the power mode is turned off at that point.

3 Q So the Adest system works safety mode, I am
4 not getting a signal, I get a signal and I can go to
5 normal mode and that signal goes away, I am going to
6 turn off power to the conversion modules.

7 Is that what he is describing here?

8 A That's correct.

9 Q If we can please look at page 38 of your
10 declaration.

11 A I am there.

12 Q And so in limitation 1E the requirement is
13 that MMU sends a command to alter this state.

14 I am not following you how turning off a
15 signal, which we just agreed which would have to happen
16 to alter the state, is sending a command.

17 Can you please explain that to me?

18 MR. MARSH: Objection. Form.

19 A So the absence of a signal is the
20 equivalent of sending a command.

21 Q Okay. That is what I was understanding from
22 your report.

23 So your opinion is the absence of a signal
24 is the same as sending a command?

25 A Correct.



1 Q Okay. So if we can move on then to claim 2
2 which is page 42.

3 I am sorry. Page 42 of your report. I
4 should be more clear. So can you just read claim 2,
5 please, to yourself.

6 A Okay.

7 All right. I am ready.

8 Q Okay. So claim 2 reads, The system of claim
9 1, wherein the MMU queries the sensor for the anomaly.

10 Do you see that?

11 A Yes.

12 Q Can you show me in your report where you
13 explain how the MMU queries the sensor?

14 I am not seeing anything about query in
15 paragraphs 96 through 96.

16 A So the way a sensor is connected to the
17 MMU -- it is a language definition issue. Queries --
18 for example, today in the system there is something
19 called an i squared C serial bus. In fact, you would
20 have a sensor and it would communicate, it would query
21 over this bus. The sensor could then send information
22 back to the CPU or microcontroller that is querying the
23 sensor, right.

24 So that is one way of querying a sensor. It
25 is typically how it is done today, and the words queries



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1 the sensor can be interpreted many different ways.

2 You can read simply a resistor with an A to
3 D and that would be considered a query, and that would
4 be an extremely simple query. It would just be
5 measuring voltage. The A to D is hardwired or with a
6 selector it could select a particular resistor to
7 measure voltage, and the A to D would then essentially
8 read the voltage on the resistor and that would be
9 considered a query, to use this example of overvoltage,
10 right.

11 So, as we discussed earlier, if there was an
12 overvoltage on the AC or DC side, an MMU would query
13 some input sensor and look for particular signals that
14 are anomalies.

15 It could also be something much more complex
16 like going over the internet and figuring out if there
17 was an earthquake nearby and shutting the system down
18 before the shock point hits.

19 Querying a sensor can be this gigantic broad
20 spectrum of what the MMU potentially can do here and,
21 obviously, you do that in a claim, you keep it very
22 broad.

23 Going down to paragraph 95, it is one simple
24 example where the microcontroller here is measuring a DC
25 voltage and then using that is a query into the system.



1 An overvoltage condition would be concluded from this
2 query. The word query I guess is very broad.

3 Q So in your mind does the definition of query
4 include monitoring? So monitoring an overvoltage
5 condition is the same thing as querying?

6 A Querying in this context is literally more
7 the MMU is a logical block going off and having an
8 interaction with the system component that would be
9 considered a sensor. And so if you do that frequently,
10 that would be considered monitoring, yes.

11 Q So monitoring the condition of a resistor is
12 the same thing as querying the resistor?

13 A It could be interpreted that way in my
14 mind, yes. The word query is very broad.

15 Q Okay. I think that I understand your
16 opinion. Let me continue on then, please.

17 If you can please go to page 44 of your
18 declaration where you start talking about claim 6.

19 A Would you like me to read it?

20 Q Yes. I am just looking at my note here. If
21 you would not mind giving me a second. I think that I
22 am going to have you go through these, it looks like,
23 paragraph 106 -- why don't you read 106 through 118 and
24 we will start there. At least skim them to make sure
25 that you familiarize yourself with them, whatever you



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1 think is best.

2 A All right. I am ready.

3 Q Great. My first question is -- it relates
4 to earlier when we were talking about knowledge of a
5 path and how you relied on that. If you can please go
6 to paragraph 118 of your declaration, which is on page
7 49.

8 A I am at 118.

9 Q So I read all of 106 through 117 over and
10 over and I can never figure out how the tie in of
11 knowledge of a person of ordinary skill in the art
12 discloses.

13 So what you say in 118 is, Accordingly,
14 Adest and combination of Adest and knowledge of a person
15 of ordinary skill in the art discloses, and you quote,
16 The system of claim 1.

17 I understand your opinion as it relates to
18 Adest because you laid it out pretty extensively above.

19 What I do not understand is what you are
20 using for knowledge of a person of ordinary skill in the
21 art here.

22 Can you please explain that to me?

23 A All right. So 118, The system of claim 1,
24 further comprising: A watchdog unit to monitor a
25 communication in a solar array, which implies really



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1 that the LMU is in the solar array in this case,
2 between the master management unit and the LMU.

3 So there is obviously communication going on
4 between the MMU and LMU and a POSITA having read through
5 everything that I explained in 106 through 118 would
6 realize that the detector receiver, for example, the
7 207, is dependent on 420, the signal generator, and the
8 moment that the signal generator ceases to send a
9 signal, the detector receiver will basically force the
10 logic within the power module 405 to go to the safety
11 mode and that is, in fact, how in this particular case
12 the watchdog works.

13 The software, the code that we talked about
14 earlier of a watchdog circuit is embodied in this logic
15 diagram from Adest shown here as Figure 5A on page 46.

16 So if you look at logic block 509. Are you
17 there in Figure 5A?

18 Q Yes.

19 A So receiving communication, that is not the
20 case that we are talking about here. That is not how a
21 watchdog works in the sense of actually receiving a
22 direct command or other warning condition. In this
23 case the fact that we have lost connection to the 420
24 block, it would be in this case a warning condition and
25 the watchdog would then at this point go off to state



1 501, which is the beginning state, and assuming it was
2 just a glitch and the signal between the 420 and this
3 particular module here resumes, it would then
4 immediately jump back into the receiving communication
5 and continue operation.

6 If for some reason, let us say the
7 firefighters came in and shut everything down, then
8 obviously it would continue to stay on safety mode from
9 that point onward where it would not receive the
10 communication shown in 505.

11 So this is code that implements a watchdog.
12 It is just very clearly spelled out. There is obviously
13 a bunch more detail. This is a super high level logic
14 flow diagram how quickly decisions are made.

15 For example, if you are at 409. I am sorry.
16 509, how quickly it would jump to the conclusion that
17 there is a warning here. That would be something that
18 would be decided in the code as well.

19 So these things are -- it is a very high
20 level diagram and very broad.

21 So, as I read this, this is basically the
22 logic condition in 509, the decision to stop normal
23 operation based on some kind of warning condition is the
24 equivalent of a watchdog.

25 Q Okay. I get that. Let's look at the



1 wording of paragraph 118 because it seems to be broken
2 in two pieces.

3 So 118 says, Adest and a combination of
4 Adest and knowledge of a person of ordinary skill in the
5 art. So it appears that you have two prongs here. You
6 have one prong that Adest discloses, and then you have
7 another prong that Adest plus knowledge of a person of
8 ordinary skill in the art discloses.

9 Is that how I am supposed to read this?

10 A So Adest by itself maps fairly clearly in
11 my mind at least and the knowledge of a POSITA only
12 reinforces it in addition to Adest.

13 Q So are there two prongs here, Adest alone
14 and Adest plus the knowledge of a POSITA, two different
15 ways to get to claim 6?

16 MR. MARSH: Objection. Form.

17 A Yes.

18 Q Okay. That is what it reads to me.

19 My question is, I don't see anywhere what
20 you are relying on for knowledge of a person of ordinary
21 skill in the art. I see what you are relying on for
22 Adest. That is very, very clear.

23 A Okay.

24 Q So can you please tell me what you are
25 relying on for knowledge of a person of skill in the art



1 for prong two, please?

2 A Sure. So if we look at the definition of a
3 watchdog, right. So the claim calls for a watchdog, am
4 I correct? Let us go back there.

5 Q The claim, it says, comprising a watchdog
6 unit.

7 A Right. So what I am getting at I guess is
8 that if someone does not know what a watchdog is, then
9 they would look it up and they would find in a broad
10 sense how a watchdog operates.

11 Q So are you relying on Exhibit 1009 which has
12 the definition of watchdog in it? And you can verify
13 this, if you would like.

14 A Correct. Let me check the 1009. I don't
15 have it up here. I did look at it yesterday. I will
16 assume that the definition of watchdog is in Exhibit
17 1009; is that correct?

18 Q It is in there, that is correct.

19 A Then, yes, I do agree.

20 Q So now with that understanding let's kind of
21 talk about a few other things here.

22 So paragraph 109.

23 A I am there.

24 Q It says, In particular, power modules 405A
25 through 405D of Adest in whole or in part perform(s) as



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1 the watchdog unit described by the '218 patent.

2 Do you see that?

3 A Yes.

4 Q So the claim requires an LMU and a watchdog
5 because 6 is off of claim 1, and now you are using power
6 modules for both the watchdog and the LMU; am I right in
7 understanding that?

8 A I am not following you there. I am sorry.

9 Q So claim 6, if we look at claim 6, it says,
10 The system of claim 1, further comprising: A watchdog
11 unit --

12 A Right.

13 Q -- to monitor communication a communication
14 in a solar array between the master management unit and
15 a respective local management unit, right?

16 A Yes.

17 Q And we established earlier that you were
18 using the power modules for local management unit of
19 claim 1, right?

20 A Local management of claim 1, yes. Yes.

21 Q So you are also using the power modules 405A
22 through 405D as the watchdog, correct?

23 A Watchdog is part of 405. It is embodied
24 inside the 405.

25 Q So yes is the answer?



1 A Well, it is not just --

2 MR. MARSH: Wait. Wait. Objection. Form.
3 Asked and answered.

4 Go ahead.

5 A So can I rephrase then?

6 Q Yes. I would like to understand why you
7 think power modules discloses both an LMU and a
8 watchdog.

9 A I understand. So if you look at Figure 4A
10 there.

11 Q Yes.

12 A The 306 controller, that also runs the code
13 that we talked about earlier, the logic code shown
14 in -- let me find the figure here -- in Figure 5A. So
15 the watchdog is embodied in this code. The code is
16 part of the controller. The controller is part of 405
17 as shown in Figure 4A.

18 Q Okay. I got it now.

19 So let's now move to the next part in your
20 opinion as it relates to claim 6, and if you can look at
21 paragraph 119, please.

22 A I will read it real quick.

23 Q Sure. Do you need a break?

24 A It depends on if you want to keep the
25 thought process flowing here for another short period,



1 I am okay for that.

2 Q Let us go for a little while. I know that
3 we have been going a while.

4 A Okay.

5 Q When we finish with claim 6, we will take a
6 break.

7 A Okay.

8 Q I don't have much more on claim 6.

9 A Okay.

10 Q So I understand 119, yes.

11 So it looks like you think Adest alone
12 discloses a watchdog unit.

13 Is that a fair assessment?

14 A That's right.

15 Q But you also think Kronberg discloses a
16 watchdog unit; is that right?

17 A That's correct.

18 Q So what is better about Kronberg than Adest?

19 MR. MARSH: Objection. Form. Assumes
20 facts.

21 Go ahead.

22 A It may be that if someone were looking at
23 the code in, I believe it was Figure 5, they would not
24 necessarily draw the direct conclusion that that
25 embodies the watchdog circuit.



1 So just to be careful and not assuming too
2 much of a POSITA at this point, I wanted to make it even
3 more clear and by using a direct definition of the word
4 watchdog as defined in this particular patent.

5 So, again, in 119 it is very clear it says,
6 to the extent that the patent owner or the board
7 disagrees, right, with the Adest alone, that we have
8 Kronberg as a backup. And Kronberg is clearly a very
9 old patent.

10 The concept of watchdogs is very clear to
11 me, especially as a system designer, but I cannot -- the
12 definition of POSITA is defined in my document here, but
13 it may be that someone has a slightly different
14 understanding of a POSITA and so just to be very clear
15 we explain what watchdog means based on the language at
16 the time and then implementation in more of a hardware
17 logic approach as shown here with Kronberg.

18 Q So is Kronberg better than Adest at
19 watchdog?

20 MR. MARSH: Objection. Form. Vague.

21 A Better from what point of view?

22 Q Well, does it improve on Adest in any way?

23 MR. MARSH: Same objection.

24 A From the point of view -- yeah, this is a
25 very difficult question to answer. The values -- I



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1 mean, engineers do this all of the time, right, they
2 have to value everything from cost reliability, ease of
3 implementation, ease of testing, reliability and we can
4 go on arguing that maybe a hardware implementation is
5 more or less reliable than software.

6 Cost wise, obviously, if you already have a
7 microcontroller inside the LMU or inside the power
8 module, adding a little bit of code is absolutely no
9 cost whatsoever, but you can argue that a cosmic ray can
10 knock the LMU out of balance and it can sit there and be
11 completely offline and that would be, maybe it would
12 take more cosmic rays to disable the Kronberg design, so
13 maybe this is more reliable over time.

14 You would have to test all of this to make
15 sure that this cost performance tradeoff is better in
16 one case or the other.

17 But from an explanation point of view, in
18 this particular case, I think it is even more obvious
19 because if it is still not clear what a watchdog is,
20 then this patent goes in great detail in explaining how
21 a watchdog works and how it can be configured. That
22 same configuration can take place in Kronberg as I
23 alluded to earlier.

24 So this particular block built-in hardware
25 can be implemented just as very easily in software as



1 well.

2 Q So which one of Adest and Kronberg does
3 hardware and which one of Adest and Kronberg does
4 software then?

5 A Well, in both cases -- in the case of
6 Kronberg, it is pure hardware. In the case of Adest,
7 of course it is a mix of hardware and software.

8 Q So does Kronberg's hardware improve on Adest
9 hardware?

10 A Again, the word improve is a very relative
11 term. I am having a hard time understanding.

12 Q Well, I am having a hard time understanding
13 too because usually if I am going to take a teaching of
14 a secondary reference, I am going to take that because
15 it gives me something, not because it gives me
16 equivalent.

17 What I am trying to find out is what
18 Kronberg gives you that Adest does not already have?

19 A It is spelled out in more plain language
20 more directly instead of, if the POSITA would look at
21 the code that we looked at in Figure 5 and realize that
22 this is a watchdog unit based purely on following the
23 logic of what the software is doing, you would come to
24 a conclusion if you are a software developer yes, this
25 is a watchdog.



1 Maybe a hardware person would rely more on
2 something like the Kronberg design to say yes, this is a
3 watchdog.

4 Q Okay. I got it. Let's move to paragraph
5 122 then, please.

6 Can you just read that for me and let me
7 know when you are ready?

8 A I am done.

9 Q The last sentence reads, A POSITA would
10 understand that the transition of periodic signals being
11 received are heartbeat signals.

12 Do you see that?

13 A Yes.

14 Q Why are you discussing heartbeat signals?

15 A Since it is in double quotes, it would have
16 to be something in part of the language of the patent
17 itself. So I don't have the ability to do a quick
18 search. It would take me a bit of time to find the
19 word heartbeat.

20 Q Do you remember the prior IPRs, Mr. Dunton?

21 A Yes, I do. I believe --

22 Q Are heartbeat signals a part of those prior
23 IPRs?

24 A I definitely remember talking about it
25 quite a bit.



1 Q Heartbeat signals -- let me make this fairly
2 easy.

3 Heartbeat signals is not discussed in any of
4 the claims of the '218 patent. You can do a quick
5 search if you want.

6 A I do not need to. I believe you. So that
7 is -- I would consider that a typo.

8 Q Okay. Then the other question on wording is
9 paragraph 125, please, if you can just read that.

10 A I am assuming that we are having the same
11 problem here with the word malfunction is not used, is
12 that correct?

13 Q That and you say, discloses this feature.
14 There is two problems, the malfunction problem and it
15 discloses this feature. I am unclear about both of
16 those items.

17 A Okay.

18 Q Can you explain them to me when you have had
19 a chance to think about?

20 A So anomaly would be the right substitution
21 for malfunction at this case.

22 Q What do you mean by "this feature"? Do you
23 mean the anomaly feature or do you mean something else?

24 A Hold on. Let me just write this down so we
25 can fix it.



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1 So we are talking in the context of
2 paragraph 124.

3 Q Right.

4 A If the watchdog receives no event pulse
5 before a specified number of timing pulses, then in
6 this case the alarm would trigger as an anomaly and
7 there is the connection there. It is in paragraph --
8 so I am talking about the watchdog not receiving an
9 event pulse.

10 Q So I should understand paragraph 125, the
11 last sentence to say, Therefore Kronberg discloses an
12 event pulse? I am not sure what you are asking me to
13 understand.

14 A Well, actually longer. It is the whole
15 first sentence really. So however if the watchdog
16 receives no event pulse before a specified number of
17 timing pulses, that would be equivalent to an anomaly.

18 Q Okay. I am not sure that I still
19 understand, but let us move on since we have a set
20 schedule today.

21 Paragraph 126 here you say, The watchdog of
22 Kronberg could be used as a part of the
23 receiver/detector of Adest to detect the absence of the
24 100 Hz communication signals taught therein, right?

25 A Yes.



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1 Q I was under the impression that Adest
2 already had a watchdog that detected the absence of that
3 signal; am I wrong?

4 A The detector 207.

5 Q Right, it detects the absence of that. And
6 so then, I am trying to figure out what you are adding
7 to Kronberg to the receiver/detector 207 here. I am not
8 following.

9 MR. MARSH: Objection. Form. Vague.

10 A So it says could be used as part of the
11 detector, receiver/detector and so Kronberg could be
12 the detector.

13 Q So, if I am reading this right, you are
14 adding the watchdog of Kronberg as part of the
15 receiver/detector of Adest?

16 A That's right.

17 MR. MARSH: Objection.

18 Q But to detect that 100 Hz signal, and I
19 thought the receiver/detector already did that?

20 A The details of 207 are not spelled out so
21 clearly.

22 Q Okay. So if you can please turn to page 55
23 of your declaration, and this is in relation to
24 limitation 6B.

25 Do you see that?



1 A Yes.

2 Q So here you say, In my opinion Adest
3 discloses/suggests this feature.

4 Do you see that?

5 A Yes.

6 Q And then throughout this section you never
7 mention Kronberg. So I am assuming that you are relying
8 solely on Adest for limitation 6B.

9 Is that a fair assumption?

10 A I would have to read through it again.

11 Q Go ahead and do that, please.

12 A That's correct. We do not need Kronberg
13 here.

14 Q And in paragraph 142, you say, In Adest, it
15 already contemplated polling of the receiver/detector to
16 detect the relevant signal, and possesses the relevant
17 technology.

18 Is seems like to me there is a typo, and I
19 am not quite sure what you mean right there.

20 Can you help me out?

21 A Let me read through it again.

22 MR. MARSH: Counsel, which paragraph?

23 MR. BRIGGS: That is 142.

24 MR. MARSH: Thank you.

25 A Go ahead. I understand 142 again.



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1 Q I am confused about the first sentence which
2 says, In Adest, it is already contemplated polling of
3 the receiver/detector to detect the relevant signal, I
4 get that, but then, and possesses the relevant
5 technology. I do not understand what you mean by
6 possesses the relevant technology. Adest possesses the
7 relevant technology?

8 A The way that I read it and the way it is
9 intended is the flow diagram that we talked about in
10 Figure 5, and I believe the code is the one that is
11 polling the receiver/detector, the logic diagram,
12 right, and that is the relevant technology that is
13 required.

14 Q Okay. Thank you. Just continuing on now to
15 limitation 6C which is the final limitation of 6 and
16 then we will take a break after this.

17 Paragraph 146, if you can just look at that.

18 A It looks like I have to go higher up here,
19 as described above.

20 Q You could do that. My question is going to
21 be, you say, the MMU and LMU of Adest, taught by Adest.

22 So when you say that, I am assuming that you
23 mean the signal mechanism and the power module taught by
24 Adest, because Adest does not actually use the words MMU
25 or LMU. So if you would confirm that and just let me



1 know.

2 A Okay. I am trying to get the English
3 straight in my head here, the meaning.

4 Q Sure.

5 A The MMU and LMU are not taught by Adest
6 obviously, but we have established further in this
7 document that we are mapping the MMUs and LMUs to use
8 technology that is disclosed in Adest.

9 Q Okay.

10 A There is a better way to write this,
11 obviously.

12 Q Okay. So we are on the same page. Adest
13 does not use those terms. We should understand this
14 paragraph to be in reference to what you have already
15 established as disclosing the MMU or the LMU relative to
16 Adest; is that fair?

17 A That is fair.

18 Q Okay. Let's take a five-minute break for
19 bio. I probably have, unfortunately it is going slower,
20 I probably have an hour more of questions. Where are we
21 on time, court reporter?

22 THE VIDEOGRAPHER: It is about -- about five
23 hours and 20 minutes, more or less.

24 MR. BRIGGS: Okay. Thank you. I will see
25 you guys in about five minutes.



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1 THE VIDEOGRAPHER: We are going off the
2 record at 3:46 p.m. Pacific standard time.

3 (Recess was taken.)

4 THE VIDEOGRAPHER: We are back on the record
5 at 3:53 p.m. Pacific standard time.

6 Go ahead, Counsel.

7 Q (BY MR. BRIGGS) Great. Let's continue on.
8 If you can please go to page 59 of your declaration, and
9 we will be talking about claim 9 for a few minutes.

10 A So I am on page 59. I am sorry. What are
11 we going to be talking about?

12 Q Claim 9. So I don't know how much you want
13 to do in terms of familiarizing yourself with it.

14 My questions are going to be more related to
15 limitation 9B which starts on page 61. So I am just
16 going to be confirming what you are using for
17 limitations, if you want to look at that real quick.

18 A Yes.

19 I am ready.

20 Q Great. Let's look at paragraph 163 which is
21 on page 63 of your declaration.

22 A Yes.

23 Q It says, Thus, a person of ordinary skill in
24 the art would have understood that the detector/receiver
25 207 together with the controller 306 disclosed by Adest



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1 is a "local controller."

2 So my understanding is the combination of
3 detector/receiver 207 plus controller, you are tying or
4 mapping that to the local controller claim 9, correct?

5 A That's correct.

6 Q Okay. Similarly, if we can look at
7 paragraph 167, you say, a person of ordinary skill in
8 the art would have understood signal mechanism 420 also
9 does perform the function of a central controller
10 described in the '218 patent, right?

11 I am asking you to confirm that that is what
12 the words on the page say.

13 A Yeah, that is what the words on the page
14 say, yes.

15 Q So then my question is, you are using the
16 signal mechanism for both the central controller and the
17 MMU in claim 9, correct?

18 A That is the conclusion that I would come to
19 as well.

20 Q Okay. And then staying on page 64,
21 limitation 9C; do you see it?

22 A I do.

23 Q It says, Means to poll the central
24 controller to determine if an interruption of the
25 communication is transient, right?



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1 A Yes.

2 Q Do you know what a means plus function claim
3 is?

4 MR. MARSH: Objection. Form.

5 A I would have to rely on counsel to explain
6 that to me.

7 Q So the answer to that is no, you do not
8 remember what a means plus function claim is?

9 MR. MARSH: Same objection.

10 A At this point, no.

11 Q Okay. Below that you say, In my opinion,
12 Adest alone or in combination with the knowledge of a
13 POSITA discloses/suggests this feature as discussed in
14 Section Roman Numeral X.B.5.b.

15 Did I read that correctly?

16 A You read it correctly.

17 Q Okay. And that is the extent of your
18 analysis on limitation 19C on this page, correct?

19 A I would have to read through it again and
20 see.

21 Q But you would agree there is one paragraph
22 under 9C labeled 169, correct? That is my only question
23 right now.

24 A Give me 30 seconds, please.

25 Q Sure.



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1 A I will be back. I am sorry. Give me 30
2 seconds.

3 Restate the question.

4 Q I don't need to because it is clear from the
5 page that you only have one paragraph under 9C, so I
6 will move on.

7 If you could go to -- we are going to skip
8 ahead a few pages to paragraph 194.

9 A I am there.

10 Q This is the analysis of claim 15 and if you
11 can just, it is only two pages, it is not actually a
12 full two pages, maybe it is, but just confirm for me
13 that in claim 15 you are relying solely on Adest. I am
14 not seeing any reference to Kronberg in relation to
15 claim 15.

16 Do you understand my question?

17 A I did, yes.

18 I am sorry. What page were you referring to
19 again?

20 Q I am at page 71 looking at paragraphs 194
21 through 199 of your declaration.

22 We can maybe go about this a different way,
23 Mr. Dunton.

24 A What I am doing. It may be helpful. I am
25 having to go back to look at my reference to Kronberg



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1 in the earlier chapters or earlier paragraphs and if I
2 relied on Kronberg or not.

3 Q Yes, I don't know that that is going to do a
4 lot of help. You are entitled to do that. I am going
5 to change my question because we are on the record and
6 we are running out of time. I want to make sure that I
7 get through everything that I need to today.

8 A Okay.

9 Q So if you can please look at page 71,
10 paragraph 194.

11 Do you see that?

12 A I am almost there. I am at 194, yes.

13 Q It says, In my opinion, Adest
14 discloses/suggests this feature, correct?

15 A That's correct.

16 Q And Kronberg is not listed, correct?

17 A That is correct.

18 Q Then below in 196 you say, Accordingly Adest
19 discloses a method comprising, correct?

20 A Yes.

21 Q And Kronberg is not mentioned, correct?

22 A That.

23 Q Okay. And in 197 you say, In my opinion,
24 Adest discloses/suggests this feature, correct?

25 A Yes.



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1 Q And Kronberg is not listed, correct?

2 A Yes.

3 Q Okay. Same thing 198, In my opinion, Adest
4 discloses this feature, correct?

5 A So here we go to X.B.1.e as well.

6 Q Sure. But it says, In my opinion, Adest
7 discloses/suggests this feature?

8 A Right.

9 MR. MARSH: Objection.

10 Q Kronberg does not appear in that paragraph,
11 correct?

12 A It might be implied by looking at Section
13 X.B.1.e.

14 Q Is that how you prepare your reports, you
15 have like a reference but if you have it in another
16 section you can use that as well even though you do not
17 mention the reference?

18 A As far as the style of the report, I rely
19 on counsel to create them in a format that is
20 meaningful for this type of affair.

21 Q Okay. 198 says, In my opinion, Adest
22 discloses/suggests this feature, correct?

23 A That is correct.

24 Q And the words Kronberg are not included in
25 paragraph 198, correct?



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1 A As I said, it may be implied by X Chapter
2 10.b.1.e. We can take a look real quick and answer
3 this carefully.

4 Q Okay. I am going to not do that in the
5 interest of time.

6 Paragraph 199 we have the same format. In
7 my opinion, Adest discloses/suggests this feature
8 limitation.

9 Those are the words on the page, correct?

10 A Correct.

11 Q And the word Kronberg does not expressly
12 appear in paragraph 199; is that right?

13 A Same issue with X.B.1.f and X.B.4.

14 Q I understand your opinion is that it might
15 be in Section X.B.1.f or X.B.4, but the word Kronberg is
16 not in 199, correct?

17 A Not verbatim.

18 Q Okay. As a Patent Owner I am trying to be
19 on notice about what your opinions are. If your
20 opinions are Adest discloses/suggest, I get it. But if
21 your opinion is Adest discloses/suggests or in
22 combination with Kronberg, I don't see Kronberg so I do
23 not understand how that is your opinion at that point in
24 time.

25 A Kronberg could be referred to in Sections



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1 10.B.1f as I said before.

2 Q I get what you are saying. I disagree that
3 that is allowed, but I understand what you are saying.

4 So if we can keep going. Paragraph 202
5 which relates to claim 18.

6 Can you please look at that?

7 A I am there.

8 Q So I am going to read it out loud. In
9 addition, a person of ordinary skill in the art would
10 have understood that this method, which is referring to
11 the method in 18 apparently, could be implemented by a
12 computer as a computer-based method. For example, local
13 controller claimed in claims 9, and 11 could be run by a
14 computer device.

15 And help me understand in claims 9 and 11
16 that you were referring to the controller 306, receiver
17 device combo 207 of Adest as the local controller,
18 correct?

19 A I would have to research that.

20 Q If we can go back and look at it. We just
21 did that. That was on page 63, your paragraph 163.

22 A One second.

23 Q Sure.

24 A I have read 163. All right.

25 Q So I will read it out loud. It says, A



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1 person of ordinary skill in the art would have
2 understood that the detector/receiver 207 together with
3 controller 306 disclosed by Adest is a "local
4 controller."

5 And then if you look at paragraph 202 of
6 your declaration, you say, For example, local controller
7 in claims 9 and 11 could be run by a computer device.

8 So since you are not pointing to anything in
9 Adest, my interpretation of paragraph 202 is that you
10 are tying it into the detector/receiver together with
11 controller 306; is that a fair assumption?

12 A I understand the question.

13 So claim 9 of the '218 patent calls out for
14 local controller.

15 Q Right.

16 A So I would agree that in 202, my document
17 that I am referring to as local controller in claim 9,
18 I am talking about the local controller defined in
19 claim 9.

20 Q Which you tie to detector/receiver 207
21 together with controller 306, correct? That is stated
22 verbatim in paragraph 163.

23 A Yes.

24 Q Okay. That paragraph is not a model of
25 clarity. I wanted to make sure that I understood your



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1 opinion. Thank you.

2 Continuing on, if you can please go to page
3 75 of your report.

4 A I am there.

5 Q So page 75 is where you start with your
6 second ground which is Adest, Kronberg and/or Goldack.

7 Do you see that?

8 A Yes.

9 Q And that section begins with the heading
10 called Claims 1 through 4, and right below that you have
11 paragraph 211. And it appears to me that you are not
12 changing any opinions on claims 1 through 4 based on
13 Goldack, you are just relying on your original opinions
14 on ground one, is that correct, for at least claims 1
15 through 4?

16 A Correct.

17 Q And if we go to the next page, page 76, at
18 the top we have claim 6 and you have limitation 6A. And
19 it appears that you are relying on your prior opinions
20 from ground one for limitation 6A; is that fair?

21 A Yes.

22 Q Okay. And then 6B is where the first use of
23 Goldack comes in, limitation 6B. And that limitation
24 is, wherein if the communication is interrupted between
25 the MMU and the respective LMU, the watchdog unit sends



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1 polls to the MMU up to a specified number of times.

2 That is what it says, correct?

3 A Yes.

4 Q And you argued in ground one that Adest in
5 combination with Kronberg discloses that feature as per
6 your paragraph 213 on this page, correct?

7 A Yes.

8 Q So I am going to have similar questions.
9 What is in Goldack that improves upon the
10 combination of Adest and Kronberg?

11 MR. MARSH: Objection. Form. Assumes
12 facts.

13 A So in the past declaration there were a lot
14 of questions about the way the watchdog behaved which
15 surprised me personally because as an engineer not
16 doing too much legal work here other than a few patents
17 I was surprised about that.

18 So this is an attempt to have suspenders end
19 belts when it comes to the issues that we ran into last
20 time.

21 What I mean by that is that the ability for
22 watchdog to be, to the way that watchdog behaves seems
23 to be controversial and so Goldack adds more flexibility
24 in the understanding of how a watchdog works. Again,
25 trying to make it clear back in this particular time



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1 period that some flexibility inside the way a watchdog
2 is built was obvious. And so this is an attempt to
3 bring in, make it even more obvious.

4 Q Okay. Can you look at paragraph 217,
5 please.

6 A I see it.

7 Q So you say, A person of ordinary skill in
8 the art would be motivated to combine Goldack with Adest
9 and Kronberg as all prior art is directed to solar
10 module handling and operational safety.

11 Is that what it says?

12 A That is what it says.

13 Q Is that your basis for figuring out how to
14 combine these references, is making sure that they are
15 all related to solar module handling and operational
16 safety?

17 A Kronberg does not mention solar. It is
18 purely about watchdogs. Adest is very clear. And
19 Goldack, we can go back to the definition of Goldack or
20 walk through it real quick, if that helps.

21 Q Sure. Please.

22 A So on paragraph 49 of my report, on page
23 23.

24 Q Okay.

25 A So if I can read that to help you. It



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1 says, Goldack is directed to a system for protecting a
2 solar module against theft or unauthorized use by an
3 authorized consumer.

4 So the basic concept here, if I can
5 paraphrase, is basically unless a solar module is
6 allowed to run, it will not run, and this is a mechanism
7 to describe how to make that work. And there is
8 communication between what is shown here as the enabling
9 device number 11 on Figure 1, Exhibit -- well, on the
10 top of page 24.

11 Q Yes.

12 A And then we have the disabling device
13 number three and it really boils down to mapping the
14 function between this enabling and disabling device
15 over to a safety system instead of just purely based on
16 theft or what is called out here.

17 So the idea is that this mechanism allows
18 for it to shutdown of a module and anything gleaned as
19 far as approach or technique from this particular patent
20 could help develop intellectual property to make patent
21 '218 possible. So this is prior art.

22 Q So stay on page 24, looking at Figure 1.

23 Are you taking the disabling device of
24 Goldack and adding it to Adest?

25 MR. MARSH: Objection. Form.



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1 Q Do you understand my question?

2 A Yes, I understand.

3 Q Is that how you are improving Adest is my
4 question?

5 MR. MARSH: Objection. Form. Assumes
6 facts.

7 A Let me read through that again and contrast
8 that to Adest.

9 Again, as I said earlier, I believe Adest
10 stand on its own. Again, if for some reason people
11 disagree with my opinion, this is just making it more
12 obvious. So it is just a different approach to doing
13 the same thing, which is disabling a module.

14 So if it is a clear definition of how to
15 disable or enable the solar module, maybe this would
16 help someone understand that better so in that sense it
17 is a way of teaching a method.

18 Specifically if you look at paragraph 50 and
19 if you look at the last sentence there, If there is no
20 response to the first signal and timeout of the first
21 predetermined time period, this was the big controversy,
22 this predetermined time period, making the watchdog more
23 resilient to noise and false triggering. So how that is
24 done in Goldack would help.

25 Q Okay. I understood. Let's keep going.



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1 If you can look at page 83, please, of your
2 declaration, specifically limitation 9E.

3 A I am there.

4 Q So in 238 you state your opinion that you
5 believe Adest discloses this limitation. I understand.

6 In paragraph 239, you say, To the extent
7 that Patent Owner or the Board disagrees that Adest had
8 knowledge to disclose a watchdog, Goldack discloses this
9 feature for the reasons provided above.

10 So am I now understanding that you are using
11 Goldack for the watchdog unit and not Kronberg for this
12 combination?

13 MR. MARSH: Objection. Form.

14 A Let me answer that real quick. I need a
15 moment.

16 Q Yes. Take your time.

17 A So there is a typo on line, in the third
18 line of paragraph 239. So it should read sections. I
19 am not sure what it should read there. That is
20 definitely a typo. There is no 1X.

21 Q Understood.

22 A So that is tripping me up here. It is the
23 wrong reference.

24 Your question was, is Kronberg required at
25 this point?



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1 Q I am confused about what, whose watchdog
2 unit you are using because you said Goldack discloses
3 this feature, and we are talking about a watchdog unit.

4 Below you say Kronberg, in paragraph 240,
5 discusses the situation of shutting off power versus
6 normal operation.

7 So my interpretation of your opinion is you
8 are using Goldack for the watchdog and you are using
9 Kronberg to say, hey, during normal keep the switches
10 close because we want it to stay powered.

11 If I am misunderstanding your opinion, I
12 would like to know that.

13 In the interest of time, I will move on.

14 A Okay.

15 Q So let's please now go to page 90 of your
16 declaration where ground three starts.

17 A I am there.

18 Q Okay. So at the top of page 90 it says,
19 Moine and Adest render obvious claims 1 through 5 and 15
20 through 17.

21 Do you see that?

22 A Yes.

23 Q Okay. And claim 1 starts on page 90 and if
24 we look at limitation 1B on page 90, it says a master
25 management unit.



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1 Do you see that?

2 A Yes.

3 Q And if you look at paragraph 277 of your
4 declaration on page 92, it says, A person of ordinary
5 skill in the art would have understood transmitter 7 of
6 Moine is the way that I understand that to mean, to be a
7 MMU. And then accordingly, in my opinion, Moine
8 discloses a master management unit.

9 Do you see that?

10 A Yes.

11 Q So am I correct in understanding that you
12 are tying transmitter 7 of Moine to the MMU of the
13 claims?

14 Let me ask a better question. Are you
15 saying transmitter 7 of Moine discloses the MMU of the
16 claims?

17 A Provides the equivalent function, yes.

18 Q Okay. I am just trying to figure out what
19 your opinion is so I am going through these in order.

20 So if we go to the next page, which is page
21 93, if we look at paragraph 280, it says, A POSITA would
22 have understood that receiver 5 and switch of Moine are
23 together the claimed LMU (watchdog unit) of the '218
24 patent.

25 Do you see that?



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1 A Yes.

2 Q So, again, I am understanding that you are
3 saying the combination of the receiver and switch of
4 Moine discloses the LMU, correct?

5 A One moment.

6 That's correct.

7 Q Okay. And then if we go to page 95 where
8 this limitation 1D is at 287, paragraph 287, you say, In
9 my opinion, Moine discloses/suggests this feature.

10 Do you see that?

11 A Yes.

12 Q And if you look at Moine, it never actually
13 uses the word sensor. What it does say, and you cite
14 this in paragraph 288 is, on page 6 of Moine, lines 1
15 through 5, Thus if the transmitter 7 detects a lack of
16 current in the domestic power supply network or a
17 failure thereof, it stops the periodic transmission of
18 the coded alternating signal through the circuit whose
19 absence identified by the receivers 5 causes the ladder
20 to open the corresponding switches such that the circuit
21 one powers down as does each of the branches 10, 11, 12
22 constituting it.

23 And if you go to paragraph 290, then you
24 say, A person of ordinary skill in the art would have
25 understood that at least one sensor would be connected



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1 to the transmitter for detecting the absence of that
2 current.

3 So my understanding is you are saying that a
4 sensor is implicit in Moine.

5 Is that what you are saying?

6 MR. MARSH: Objection. Form. Calls for a
7 legal conclusion.

8 A So I understand the question. I am a
9 little confused about when you were quoting 288. I
10 think that you used different words than I have in
11 front of me.

12 Q So what I did -- so in paragraph 288 at the
13 very, very last you say Exhibit 1008, 6:1-5.

14 A Oh, I understand.

15 Q Then I read exactly what Moine says so we
16 understand what it discloses, because I am not trying to
17 put words in anybody's mouth.

18 Moine says, If the transmitter detects a
19 lack of current in the domestic power supply.

20 And my understanding is then looking at
21 paragraph 190, is that you say, A person with ordinary
22 skill in the art would have understood that at least one
23 sensor would be connected to the transmitter for
24 detecting the absence of current.

25 Do you see that?



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1 A Yes.

2 Q My question is, you are arguing, it appears
3 to me, that a sensor is implicit in Moine.

4 Is that what you are saying?

5 A Let me check real quick. Let us see.

6 Yes, so if you go back to Figure 1 on page
7 91, right above paragraph 271.

8 Q I am there.

9 A You can see that there is a callout for
10 number 8 in the figure itself and it is defining
11 alternating signal as number 8.

12 Q Uh-huh.

13 A And the transmitter detects the absence of
14 current. So you can see that also is spelled out in
15 paragraph 273.

16 Q Yup.

17 A So by definition the transmitter has to
18 sense or there is a sensor that does this.

19 If I understand your question, you asked me
20 if there is a sensor implied in it; and the answer is
21 yes.

22 Q But a sensor is not required to detect the
23 absence of current.

24 There is lots of way to detect the absence
25 of current without sensors, right?



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1 MR. MARSH: Objection. Form.

2 A I cannot imagine how.

3 Q So your definition of a sensor is anything
4 that provides a signal as opposed to one that detects.
5 So there are sensors that detect, because the word
6 detect is here. The word detect is superfluous if it is
7 not detecting anything. So if a sensor is always there,
8 then it is not really detecting is what I am trying to
9 figure out here.

10 MR. MARSH: Objection to form.

11 A Oh, interesting. All right. Again, I am
12 using the normal, not normal, but what a POSITA would
13 consider what a sensor and what detection, what those
14 words mean.

15 Q That is called plain and ordinary meaning.

16 A Yes, the plain and ordinary meaning. Thank
17 you.

18 Q So if we stay on page 95, which is
19 important, the claim says, The sensor configured to
20 detect an anomaly, right? It has to detect the anomaly.

21 And so what I am hearing you say is that
22 Moine's transmitter would always have a sensor to detect
23 the anomaly of absence of current.

24 Is that your position?

25 A Would always have?



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1 Q A sensor to detect the absence of current,
2 which is what Moine says at the top of six.

3 A Yes.

4 Q Okay.

5 A So, yes, I would -- the receiver or, I am
6 sorry, the transmitter has to have a sensor that is
7 always present and it is always detecting if there is
8 current or not for it to function.

9 Q Okay. So then moving now to page 96, we
10 have limitations 1E again. And, again, we have the MMU
11 sends a command to the LMU. And earlier we established
12 that your understanding of sends a command also includes
13 stopping of sending a command, the absence of a command.
14 You made that clear during our discussion of Adest.

15 So my understanding of your position is that
16 Moine then also renders, sends a command for the same
17 reason because Moine functions identically to Adest in
18 that it stops sending the signal to the receiver when it
19 no longer wants power to be issued. So let us just walk
20 through that for a second here.

21 So if you can turn, if you can go to Moine,
22 page 7.

23 A So, I am sorry, the actual, the actual pin;
24 are you referring to that?

25 Q If you can go to Exhibit 1008 and it is



1 probably page 8 of the PDF, but it will say page 7 on
2 the actual page.

3 A I need to open up that file first. One
4 second.

5 Q Yes. Sure. Take your time.

6 A I have Moine open. Go ahead.

7 Q So at the top of page 7, it says, This
8 transmitter also transmits according to a set timing a
9 periodic alternating signal that can be detected by the
10 receivers acting on the switches connected to each of
11 the modules or to each of the branches.

12 Do you see that?

13 A I just got there. So on the top of page 7
14 you read the first paragraph, correct, This transmitter
15 7?

16 Q Yes. Do you want to read it yourself? That
17 is fine.

18 A Yes, please.

19 Okay. I am good.

20 Q And then the next paragraph says, If this
21 periodic alternating signal is not detected by the
22 receivers, either due to instructions received by the
23 transmitter or due to its power failure following an
24 overall power outage, the switches are opened and the
25 circuit is powered off.



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1 So is my understanding of Moine correct that
2 the periodic alternating signal sent by the transmitter
3 is received by the receivers during normal operation,
4 but during abnormal operation the transmitter 7 stops
5 sending that signal, the receivers figure that out and
6 then they stop allowing power; is that how Moine works?

7 A Yes.

8 Q Okay. So I think that you spell this out in
9 paragraph 293 of your declaration, if you want to go
10 back there. I am sorry to keep jumping around.

11 A 293, yes.

12 Q On page 96. It says, If the transmitter
13 detects the absence of current, it stops the periodic
14 transmission, correct?

15 A If it detects the absence of current on the
16 domestic electric network, yes.

17 Q It stops the periodic transmission. So I am
18 assuming that that is your -- you are saying that that
19 read on sends a command just like Adest reads on that
20 limitation then?

21 MR. MARSH: Objection. Form.

22 A So the absence of a signal --

23 Q Right.

24 A -- is a signal in itself, that is correct.

25 Q Okay. I have a few more questions and it is



1 mostly just trying to figure out what you are saying.

2 If you can please go to paragraph 301 of
3 your declaration on page 98.

4 A I am there.

5 Q In the middle of the paragraph it says, A
6 POSITA would have recognized that safety problem is
7 equally present in Moine and Adest, would have apply
8 some safety teachings. There has to be something in
9 there that is missing. I am not quite sure what the
10 typo is. There is something.

11 Can you kind of help me out with what you
12 are trying to say there?

13 A Sure. There is a comma that is in the wrong
14 place. So in that paragraph, I guess the way it should
15 read is -- let me high level paraphrase.

16 So Adest is a more sophisticated system than
17 Moine, and the point is that there is these improvements
18 that can be learned from Adest to improve on Moine.

19 Q Okay.

20 A Moine is a very simplistic and in many ways
21 does not work as we need it to work today. So it
22 fundamentally does do the shutdown based on a signal
23 being transmitted. So that part is very clear. That
24 was not so obvious back then at this time frame that we
25 are talking about. So Moine, his prior art, it is very



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1 basic.

2 Adest is obviously more sophisticated. So
3 the combination of the two would allow an inventor to
4 take the best of both worlds.

5 Q Okay. Paragraph 302 right below that. The
6 very last sentence I am confused about it. It says, A
7 POSITA would have a reasonable expectation of success of
8 utilizing a similar system with modifications.

9 I don't know what you mean by similar
10 system, and I don't know what you mean by modifications.

11 A I would need a little bit more context
12 here. One second.

13 Q Yes. Take your time.

14 A The intention of the last three lines of
15 302 is a POSITA would have a reasonable expectation of
16 success of utilizing a similar system, one that they
17 built, with modifications. In other words, to combine
18 the two patents together. So by combining the two you
19 are modifying them obviously.

20 And utilizing a similar system, we are
21 talking about the systems of Moine and Adest. Is that
22 clear enough?

23 Q A little bit. I am assuming Moine is your
24 starting point and you are adding on to it with the
25 Adest disclosures because Moine is your primary



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1 reference?

2 A I am not sure that defining either one as a
3 primary would be important. So I would, in that last
4 sentence, I would, to answer your question more
5 specifically, a reasonable expectation of success of
6 utilizing a similar system of modification; so we are
7 talking about using them equally, taking the best of
8 both, and combining them is basically what we are
9 saying here.

10 Q Okay. A couple more questions. Let's go to
11 page 100. Actually, 101 which is going to relate to
12 claim 3. So claim 3 begins in middle of 100 and
13 continues on through your discussion of it through
14 paragraph 313.

15 And 310 says, In my opinion, Moine
16 discloses/suggests this feature. And in 311 it says, To
17 the extent you disagree, a person skilled in the art.

18 The next paragraph 312, you say, Moine has
19 multiple different sensors.

20 Can you point me to where in Moine you
21 believe it has multiple different sensors? There is no
22 citation here. I don't know what you mean.

23 A Understood.

24 Well, go to Moine, Exhibit 1008.

25 Q Yes.



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1 A And if you look at lines 14 through 16.

2 Q Which page?

3 A I am sorry. I am sorry. Page 8, lines 14
4 through 16. Page 8 of 52.

5 Q Okay. I am there. It starts, According to
6 an advantageous version; is that what you are looking
7 at?

8 A Right. Is fitted with means of reception
9 or communication to receive paramount instructions,
10 right. So these instructions, next paragraph, can be
11 sent by radiofrequency or over the telephone.

12 For example, failure to pay maintenance
13 fees, right.

14 And then it goes on to say, The facility
15 also makes it possible to manage the charging or
16 discharging of the storage battery.

17 So it is going on to say that the
18 transmitters receives signals indicating the charge
19 level. So we have already introduced two different
20 types. One is the fact that we didn't pay our bills and
21 the other is the battery is full.

22 Q Okay.

23 A So it is just kind of really open. It just
24 gives two examples right here that I can find really
25 quickly.



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1 Q Okay. Let's go to claim 5.

2 A On page 102?

3 Q Yes. Actually, I think I maybe figured out
4 what you meant. Based off your latest answer, I
5 understand what did you in claim 5.

6 If you can please go to page 105, and at the
7 bottom we have ground four.

8 A I am there.

9 Q Ground four says, Moine, Adest and/or
10 Goldack renders obvious these claims.

11 Do you see that?

12 A Yes.

13 Q And below that we have claims 1 through 4.
14 Do you see that?

15 A Yes.

16 Q This is where I get confused. Paragraph 333
17 says Adest discloses. I am assuming that you mean Moine
18 because you were just in ground three and now you are in
19 ground four or are you really relying on Adest here? I
20 am not sure.

21 A So there is the and/or is part of the logic
22 here. So we are talking about quite a few claims here
23 on ground four. We are talking about claims 1 through
24 4 and 6 through 14 and 18 through 19.

25 Q I am only in claims 1 through 4.



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1 A Okay.

2 Q Which is the paragraph 333 only. And 333
3 says, Adest discloses.

4 And if I go down to paragraph 334 right
5 below that, it says, Moine discloses.

6 I am trying to figure out, do you mean Adest
7 for 333, because you then cite sections X.B.1 through
8 X.B.4 or is that a typo and did you mean to put Moine
9 there?

10 A I would again, as I said before, I would
11 have to research X.B.1 and X.B.4 to rely on this.
12 Adest by itself relies on anything else.

13 Q Should we just look at the table of contents
14 real quick then. X.B is Adest grounds.

15 A Let me check that real quick.

16 Q So Roman Numeral I, which is page 2 of your
17 PDF of your exhibit, has your whole Table of Contents.
18 And on that Table of Contents Roman Numeral X is the
19 prior art and Roman Numeral B is ground one Adest and
20 Roman Numeral C is ground two, so on and so forth. So
21 perhaps you did mean Adest here, which is fine. I am
22 just trying to figure out if it is a typo or not.

23 A I am almost there.

24 Q Sure.

25 A Repeat what you just said just now.



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1 Q So what I said is in your Table of Contents,
2 which is Roman Numeral I, if you look at page Roman
3 Numeral I. I am sorry.

4 A Yes, I am there.

5 Q And then Roman Numeral X says, The priority
6 art discloses.

7 Do you see that.

8 A Yes.

9 Q And then Roman Numeral B is ground one.
10 Do you see that?

11 A Yes.

12 Q And ground one relates to Adest, right?

13 A And/or Kronberg.

14 Q Yes, but if you go through the whole thing,
15 you are only using Kronberg here and there. You don't
16 use Kronberg predominately for claims 1 through 4. We
17 can verify that.

18 A So, again, Adest is combined with Kronberg
19 when it is required through these claims. So I don't
20 have this at the tips of my fingers to be able to give
21 you a definitive answer unless we actually go look at
22 these claims again one more time on page 29 and 42 and
23 see if Kronberg was or was not required.

24 Q It is really not patent owner's job to try
25 to figure out what your opinions are. I am trying to



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1 help you out here.

2 A Right.

3 Q Just in the interest of time, unless you
4 have a different opinion, I am going to go with the
5 literal language on the page which is that you are
6 relying on Adest for ground four claims 1 through 4
7 unless you tell me different now?

8 A I would have to go back and look at the
9 combinations.

10 Q We don't have time for that. So let's keep
11 going.

12 A Right.

13 Q I have one more question here. Actually,
14 you have already answered that question.

15 I have some other stuff. Let me just check
16 my notes real quick, but I don't think that I am going
17 to have any more questions, Mr. Dunton.

18 A Understood.

19 MR. BRIGGS: Counsel, patent owner has no
20 further questions.

21 MR. MARSH: Okay. Thanks. I have just a
22 couple of questions, a couple short lines of questions.

23 Is everyone okay to stick around for a few
24 minutes now or do we need a break first?

25 THE WITNESS: Your voice is a little bit



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1 low.

2 MR. BRIGGS: I am good to stick around.

3 THE WITNESS: I can stick around.

4 MR. MARSH: Okay. Is this better on the
5 voice?

6 MR. BRIGGS: Yes.

7 MR. MARSH: All right. Great.

8 EXAMINATION

9 BY MR. MARSH:

10 Q In the interest of time, I am going to try
11 to put up the documents that I am asking you about just
12 so that we can get through them quickly.

13 Okay. So the document that is up right now
14 is Exhibit 1005. This is the Adest reference that you
15 have been talking about.

16 Do you see that, Mr. Dunton?

17 A Yes.

18 Q And you remember being asked about this
19 reference, right?

20 A Yes.

21 Q Okay. Do you remember in column 2 of this
22 reference that Mr. Briggs asked you some questions about
23 the language down here starting in line 65 of column 2?

24 Do you remember him asking you about that?

25 A Not specifically.



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1 Q Okay. Let's take a look at that language
2 for just a minute. The language says, The term
3 signaling or signaling mechanism as used herein refers
4 to either a signal modulated for an electromagnetic
5 carrier signal or a simple unmodulated signal such as an
6 on/off signal, keep alive signal or dry contents signal.

7 Do you see that?

8 A Yes.

9 Q And do you remember Mr. Briggs asking you
10 about this and referring to it as a definition by Adest?

11 A In 420?

12 Q Yes. He was asking you or referring to it
13 as a definition of the signaling mechanism.

14 Do you remember that?

15 A Yes, I do now.

16 Q Okay. And you remember there was some long
17 pauses and long exchanges in that set of questions; do
18 you recall that?

19 A Yes.

20 Q I want to take a look at the next column in
21 the summary of the Adest patent, in column 3. Let's
22 take a look at column 3 starting at line 32, and I just
23 want to take a look at the language here.

24 Do you see here that it also refers to the
25 signaling mechanism in column 3 of Adest?



1 A Yes, I understand this.

2 Q Okay. And the lines that I have highlighted
3 for you were lines 32 through 39 of column 3.

4 Do you see here, starting on line 36, the
5 sentence says, The signaling mechanism may include a
6 switch integrated with the inverter. The switch
7 modulating the signal onto an output of the power
8 module.

9 Do you see that?

10 A Yes.

11 Q Okay. So that says that the signaling
12 mechanism may include a switch that is integrated within
13 it, right?

14 A Yes.

15 Q Or, sorry, rather integrated with the
16 inverter, correct?

17 A With the inverter.

18 Q Right. Okay. So that is different than the
19 language we saw before about a signaling mechanism being
20 either a signal that is modulated or a simple
21 unmodulated signal, right?

22 A Correct. It goes into the --

23 Q Sorry. Go ahead.

24 A It goes into the mechanism of actually
25 creating the signal.



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1 Q Right. A modulated signal or a simple
2 unmodulated signal does not include a switch that is
3 integrated with an inverter, does it?

4 A No.

5 Q Okay. I want to take a look at, on this
6 same page, do you see the heading, Brief Description of
7 the Drawings in column 4?

8 A Yes.

9 Q Okay. And then first I want to take look,
10 do you see there is a description of Figure 4.

11 Do you see that?

12 A Yes.

13 Q And it says, it is a simplified block
14 diagram of another exemplary system according to an
15 embodiment of the present invention, right?

16 A Yes.

17 Q And then Figure 4B, do you see that it says,
18 Figure 4B is a simplified block diagram illustrating in
19 more detail a signaling mechanism attached to a
20 conventional inverter according to embodiments of the
21 present invention?

22 A Yes.

23 Q Okay. So if we want to see the simplified
24 block diagram that illustrates the signaling mechanism
25 in more detail, we can look at Figure 4B, right?



1 A Agreed.

2 Q Okay. Let me -- we will do that, but let us
3 come back to that. Let's go to column 9. And I want to
4 take a look in column 9 of Adest, Exhibit 1005, let us
5 take a look here at this section, lines 5 to 11.

6 Do you see that this selection, lines 5 to
7 11 of column 9 of Adest also refer to the signaling
8 mechanism.

9 Do you see that?

10 A Yes.

11 Q Okay. And that section tells us that the
12 signaling mechanism includes a relay, it gives it a
13 number, signaling mechanism 420, and it says the
14 signaling mechanism 420 includes a relay, 420A, which is
15 normally open and controlled by a microcontroller,
16 right?

17 A Agreed.

18 Q And then it gives some detail about the
19 relay and how it is switched -- and how it switches at a
20 given rate like 100 Hz and how it imposes, how it
21 superimposes a signal by action of the relay onto the
22 serial stream over the wireless, right?

23 A Agreed.

24 Q Okay. Now, the signaling mechanism 420 as
25 it is described here, that is different than either a



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1 signal that is modulated on an electromagnetic carrier
2 or a simple unmodulated signal, isn't it?

3 A Yes.

4 Q Is it normal for a signal that is modulated
5 on electromagnetic carrier or an unmodulated signal to
6 have a relay as part of it?

7 A No.

8 Q That is because relay is hardware, right?

9 A Hardware and it is super slow.

10 MR. BRIGGS: Objection. Leading the
11 witness.

12 Q Sorry. Is relay, is that something tangible
13 or is that or is it not tangible like a signal?

14 A It would be probably best if we looked, but
15 the ordinary meaning of relay generally means an
16 electromechanical device that can open and close
17 contacts.

18 Q Right. Okay. So an electromagnetic, an
19 electromechanical device rather like you said, that is
20 not either a modulated or unmodulated signal, right?

21 A It is not a signal. It is a physical
22 device.

23 Q Okay. So if we wanted to really define what
24 Adest means by signaling mechanism 420, we would have to
25 see more than just refer to signals whether they are



1 modulated or unmodulated, wouldn't we?

2 A We have to study the 420, yes.

3 Q Let's take a look at Figure 4. So we are on
4 page 11 of 23 of Exhibit 1005 which is Adest. It has
5 Figure 4 and 4A.

6 Do you see that?

7 A Yes.

8 Q And referring to Figure 4, do you see that
9 there is a block that has the number 420 on it?

10 A Yes.

11 Q What is that block?

12 A In the context of just what we read here,
13 Figure 4, I don't know offhand, but I imagine it is the
14 signaling mechanism.

15 Q Right. We saw where signal mechanism was
16 labeled 420 in the specification, right?

17 A Right.

18 Q And then we saw that selection that we read
19 earlier in the brief description of the drawing it said,
20 if we wanted more detail, a more detailed block diagram
21 of this signaling mechanism 420, we should look in
22 Figure 4B, right?

23 A Correct.

24 Q Okay. So now we are looking at Figure 4B,
25 and do you see that there is a designation that the main



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1 block is designated as Item 420?

2 A Correct.

3 Q Okay. So what is that? What is the main
4 block here that is shown?

5 A The signaling mechanism in the broad sense
6 again.

7 Q Okay. And what we see on the screen here,
8 that could not be either a signal modulated on an
9 electromagnetic carrier signal or a simple unmodulated
10 signal, could it?

11 A No. This includes the relay 420 that we
12 talked about earlier, the microcontroller that controls
13 the relay. And what is shown in series with the 420A
14 relay is a resistor to help modulate the signal onto
15 410 and 412.

16 Q Okay. So what is depicted in the box
17 labeled 420 in Figure 4B, are those tangible or
18 intangible elements?

19 A Tangible in the sense of physical presence?

20 Q Right.

21 A Yes, it is tangible.

22 Q Okay. So they are physical components in
23 other words?

24 A Yes.

25 Q Okay. So, in other words, the signaling



1 mechanism 420 is made up of physical components,
2 correct?

3 A Correct.

4 Q All right. Let's take a look at your
5 declaration for a minute.

6 And just briefly, do you recall being asked
7 by Mr. Briggs about paragraph 118 in your declaration?
8 I don't know if you remember or not.

9 A No, I am really struggling. I am trying to
10 remember if and when we talked about this, and I am
11 trying to absorb it.

12 Q Let me try to help. Do you remember, do you
13 remember Mr. Briggs asking you where it says,
14 Accordingly, in the first sentence of paragraph 118,
15 Adest and the combination of Adest and knowledge of a
16 person of ordinary skill in the art discloses the system
17 of claim 1?

18 A Yes.

19 Q And it goes on and it says the rest of that
20 part of the claim?

21 A I remember that discussion, yes.

22 Q Okay. And there was a question about what
23 you were referring to when you talked about the
24 knowledge of a person of ordinary skill in the art and
25 what that discloses, right?



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1 A Yes.

2 Q So I want to ask you, let's take a look at
3 paragraph 108. In paragraph 108 you say that Adest
4 discloses as a watchdog unit in the same configuration
5 as with the watchdog unit of the '218 patent and
6 understanding of a person of ordinary skill in the art,
7 right?

8 A Right.

9 Q All right. So is what you say in paragraph
10 118 part of what you were referring to when you were
11 referring to what the knowledge of a person of ordinary
12 skill in the art in paragraph 118?

13 A Can you jump back to 118, please?

14 Q Sure.

15 A So I mean the same thing here, person of
16 ordinary skill in the art here as well. Those are the
17 same.

18 Q Right. And I guess to drive the point home,
19 in paragraph 108 you are talking about a person of
20 ordinary skill in the art understanding something about
21 the watchdog unit that you referred to here in paragraph
22 118, right?

23 A Yes.

24 Q Okay. Now, I want to stay in the same
25 section as paragraph 118 and the paragraph that we just



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1 looked at and let's take a look at paragraph 112.

2 You say here that a person of ordinary skill
3 in the art would have understood that the power module
4 405 in whole or in part performs as a watchdog unit
5 described in the '218 patent, right?

6 A I state that, yes.

7 Q And then you give the reason, because it is
8 configured to monitor communication from a signal
9 mechanism 420, right?

10 A Yes.

11 Q Okay. Is that part of what you were
12 referring to in paragraph 118 when you referred to the
13 knowledge of a person of ordinary skill in the art?

14 A Right. It is a conclusion here. Yes.

15 Q Okay. So that relates to the watchdog unit
16 that you were referring to in paragraph 118 as well,
17 right?

18 A The way the watchdog works, yes.

19 Q Okay. Last one. In paragraph 113 you say,
20 A person of ordinary skill in the art would have also
21 understood that the solar panels of Adest are each a
22 solar module which was a common synonym at the time of
23 the invention.

24 Do you see that?

25 A Yes.



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1 Q Okay. Now, is that part of what you were
2 referring to in paragraph 118 when you were referring to
3 the knowledge of a person of ordinary skill in the art?

4 A So the reference of communication in a
5 solar array, right there, it is actually another term
6 that was not discussed above. Module solar panel,
7 solar array, they do mean -- an array of course is a
8 combination of modules or solar panels, and that was
9 understood at the time and a POSITA would know that.

10 MR. MARSH: Okay. Excellent. Thanks. No
11 more questions.

12 MR. BRIGGS: I don't have any recross.

13 THE VIDEOGRAPHER: Before we go off the
14 record, if we can get orders for the transcript and
15 video.

16 Mr. Briggs, do you want your video synced?

17 MR. BRIGGS: No, these usually do not get
18 submitted to the Patent Office. We just kind of keep it
19 for our records so no reason for that.

20 THE VIDEOGRAPHER: Is it standard
21 turnaround?

22 MR. BRIGGS: Standard for the video or
23 the --

24 THE VIDEOGRAPHER: The video.

25 MR. BRIGGS: Yes, standard is fine for the



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1 video.

2 THE VIDEOGRAPHER: Now I will ask you about
3 the transcript. Did you want that expedited?

4 MR. BRIGGS: A rough is fine. What is
5 normal delivery for a regular? I want whatever
6 transcript we are going to submit to the Patent Office,
7 the official, when am I going to get the official
8 transcript on a typical basis, regular delivery?

9 THE COURT REPORTER: Okay. It is probably
10 about ten days.

11 MR. BRIGGS: That is too short. I will do
12 expedited.

13 THE COURT REPORTER: When do you need it or
14 when would you like it?

15 MR. BRIGGS: Next Wednesday or Thursday
16 should be fine.

17 Speaking of which, Phil, we are going to be
18 requesting an extension of time just with some
19 inconvenient bandwidth issues. So we will get that over
20 to you.

21 MR. MARSH: In that case, we can take
22 regular delivery for everything. We don't need the
23 video synced.

24 THE VIDEOGRAPHER: But you do want a copy,
25 Mr. Marsh, correct?



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1 MR. MARSH: Of the video?

2 THE VIDEOGRAPHER: Yes.

3 MR. MARSH: Yes, please.

4 THE VIDEOGRAPHER: Okay. Standard delivery?

5 MR. MARSH: Standard.

6 THE VIDEOGRAPHER: Okay. Any other
7 questions or anything else for on the record?

8 MR. MARSH: Nothing for me. I mean, the
9 witness will want an opportunity to review and sign. I
10 forget what the rule is at the Patent Office about that.

11 MR. BRIGGS: I think the transcript stands
12 as is unless Mr. Dunton here fixes it.

13 MR. MARSH: Okay.

14 MR. BRIGGS: So what that it means is you
15 have to review the transcript and, if you disagree with
16 anything, you need to put it in an errata sheet.

17 MR. MARSH: Right. Okay. So we will want
18 to at least review it. I will just make a note of that.
19 We can talk about that offline, if you want.

20 MR. BRIGGS: Yes.

21 THE VIDEOGRAPHER: This concludes the
22 videoconference deposition of Randy R. Dunton. We are
23 going off the record on April 5, 2024 at 5:22 p.m.
24 Pacific standard time.

25 (The deposition concluded at 5:22 p.m.)



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C E R T I F I C A T E

I, MICHELE KOSS, a Shorthand Reporter and
notary public, within and for the State of Colorado, do
hereby certify:

That RANDY DUNTON, the witness whose
examination is hereinbefore set forth, was first duly
sworn by me and that this transcript of said testimony
is a true record of the testimony given by said witness.

I further certify that I am not related to any
of the parties to this action by blood or marriage, and
that I am in no way interested in the outcome of this
matter.

IN WITNESS WHEREOF, I have hereunto set
my hand this 10th day of April, 2024.

Michele Koss

Michele Koss, RMR, RPR



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ESQUIRE ERRATA SHEET

Esquire Job ID: J11079991
Case Caption: SMA SOLAR TECHNOLOGY AMERICA VS. TIGO
ENERGY

DECLARATION UNDER PENALTY OF PERJURY

I declare under penalty of perjury that I have
read the entire transcript of my Deposition taken
in the above-captioned matter or the same
has been read to me and the same is true and
accurate, save and except for changes and/or
corrections, if any, as indicated by me on the
DEPOSITION ESQUIRE ERRATA SHEET hereof, with the
understanding that I offer these changes as if still
under oath. Signed on the _____ day of
_____, 20____.

RANDY DUNTON



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25 RANDY DUNTON



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