

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUM INDUSTRIAL TECHNOLOGY, INC.,
Petitioner,

v.

AMSTED RAIL COMPANY, INC.,
Patent Owner

IPR2023-00538 (Patent 9,365,223 B2)
IPR2023-00539 (Patent 9,981,673 B2)

Record of Oral Hearing
Held: June 10, 2024

Before JAMES P. CALVE, KEVIN W. CHERRY, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

IPR2023-00538 (Patent 9,365,223 B2)

IPR2023-00539 (Patent 9,981,673 B2)

APPEARANCES:

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P R O C E E D I N G S

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JUDGE CALVE: Good morning, everyone. Looks like everyone's got their game face on today. Welcome to the hearings for IPR2023-538, 539, and 540, and this morning's hearing will be from 10:00 a.m. to 12:00 p.m. Eastern, and we'll be handling 538 and 539, and then we'll pick up at 1:00 p.m. to do the 540. So, this -- inter parties' review is between Hum Industrial Technology, the Petitioner, filed against Amsted Rail Company, Patent Owner. And I guess we should -- the panel today is Judge Woods, Judge Cherry, and myself, Judge Calve. And if counsel could introduce themselves for each party, and I guess we'll begin with Petitioner if that's all right. Please enter your appearance.

MR. RAKESTRAW: Judge, Eric Rakestraw of Husch Blackwell on behalf of the Petitioner, Hum Industrial Technology.

MR. MILLER: And Ryan Miller of Fox Rothschild representing Patent Owner, Amsted Rail Company Incorporated. With me is also lead counsel, Jeff Schwartz, and Gary Hecht.

JUDGE CALVE: Welcome everyone. You haven't seen Jeff in a while. He's -- we're classmates from West Point, so we go back many years. Jeff used to tutor me on patent law and hopefully I learned something. We'll see. Okay. Well, welcome everyone. Each party has one hour this morning and you could of course reserve rebuttal time if you'd like. So, when you start your argument, if you would just let me know how much time you'd like to reserve, I'll make a note of that and we'll give you like a five minute warning. But I think we'll start with Petitioner counsel. Mr.

1 Rakestraw, you're welcome. You got the floor for one hour or borrowing
2 any, or reducing any rebuttal time you'd like to retain.

3 MR. RAKESTRAW: Thank you very much, Judge. I'll reserve
4 15 minutes for rebuttal this morning. If we can move to slide 2. Judge, can
5 you confirm that you're seeing slide 2 for me, okay?

6 JUDGE CALVE: Yes, that's great. And if you could just
7 please do as you did, just mention what slide number it is as well for the
8 people on the public line as well.

9 MR. RAKESTRAW: Sure. Thank you, Judge. So, as you
10 know, the '223 patent and the '673 patent share the same specification. Both
11 patents are directed to a system for monitoring operational parameters of a
12 railcar and particularly directed to monitoring the temperature of the rail
13 car's wheel bearings. There are sensor units that are sometimes referred to
14 as sensor devices or motes that are attached to the rail car to monitor areas of
15 interest. For example, they can be mounted near a wheel bearing to monitor
16 the temperature of the bearing. The sensor units wirelessly transmit their
17 collected data to a central node on the railcar called a communication
18 management unit or we'll refer to it as a CMU for short. The CMU
19 processes the sensor data and if it detects something problematic, it sends an
20 alarm message to a central location or to the locomotive.

21 We can move to slide 6, please. None of what I just covered is
22 actually new. LeFebvre is a patent filed in 2007 by one of the same
23 inventors, and it describes essentially the same system that performs the
24 same functions using the same components in the same way. There's a
25 plurality of sensors that LeFebvre describes. They attach to the railcar.
26 They monitor the wheels and the wheel bearings. They communicate with

1 the CMU and the CMU analyzes the collected data using heuristics and it
2 determines if there's a failure condition, for example, if the wheel bearing is
3 failing or is about to fail. In the institution decision, the Board correctly
4 found that LeFebvre, as a single reference 103, discloses every feature of
5 each independent claim challenge across both proceedings. Patent Owner's
6 arguments presented during the trial post institution are substantially the
7 same as what it presented prior to institution. So, if anything, I believe the
8 evidence should leave you even more firmly convinced than you were at the
9 outset that your preliminary findings regarding LeFebvre were correct.

10 We can move to slide 7, please. Armitage is the second primary
11 reference that we rely on for our second set of grounds, and it also discloses
12 a very similar system. As you can see in Figure 1, there are sensor nodes
13 mounted on a railcar. They monitor various parameters.

14 JUDGE CALVE: Well, let me interrupt, Mr. Rakestraw,
15 because obviously there's some dispute or we wouldn't be here arguing. But
16 what's your position on the housing issue? Because that's plain term and
17 Patent Owner has taken the position that these instrument pads are not
18 housings, they're not notes.

19 MR. RAKESTRAW: Absolutely, Judge. If we could move to
20 slide 24. So, Judge, our position is that LeFebvre clearly discloses that it has
21 a housing. And if you look at Figure 3, it describes an instrumented pad 16
22 that is constructed of a polymer. That pad has an extended attachment
23 portion 17, okay, so a kind of a portion of the overall structure. And
24 between those two, they enclose all of the components that are required by
25 the claims at issue, particularly Claim 2 and Claim 5. And so, our position is
26 that if it does have a housing, it clearly discloses a housing and the housing

1 is pad 16 which includes extended attachment portions 17 and they're all part
2 of the single overall structure.

3 And we'll go to the next slide, slide 25. Patent Owner proposed a
4 construction of housing as an enclosure. And our position is that no
5 construction is necessary that housing can be given its plain and ordinary
6 meaning. That's the position that the Board took in the institution decision.
7 But even under Patent Owner's construction, instrumented pad 16 encloses
8 the electronic components that are contained and embedded inside of it.
9 Their -- Patent Owner has also attempted to draw a distinction between the
10 instrumented pad 16 and the extended portion 17.

11 Our position is that LeFebvre is very clear. Portion 17 is exactly
12 what it says. It is a portion of the overall structure 16, and Patent Owner has
13 also raised this argument that those two structures are divided, right, that
14 they're separate units and something we wanted to emphasize is that there's
15 nothing in the claim language that requires a housing that's free of internal
16 partitions or divisions or even that it's constructed from a single unitary
17 body. LeFebvre certainly appears to disclose all those things, right? There's
18 no indication that there's a division of any kind between pad 16 and what
19 they refer to in the figure as extended portion 17. But even if there were,
20 there's nothing in the claim language that would rule that out.

21 Go to the next slide, please.

22 JUDGE CALVE: So, Mr. Rakestraw, let's focus on the claim
23 language. What does the claim language require the housing to do? It has to
24 encase or enclose there have to be components within the housing. So, can
25 you walk us through how LeFebvre has the same components within what
26 you're calling a housing?

1 MR. RAKESTRAW: Absolutely, Judge. Let's go to slide 22.
2 There we go. So, limitation 2(c) requires the housing and 2(e), 2(f), and
3 2(g), as we've labeled them, explain what needs to be contained within the
4 housing, right? So, 2(e) requires electrical circuitry position within the
5 housing, 2(f) requires a power source within the housing, and 2(g) requires a
6 communication device within the housing. And if we go back to slide 24, I
7 believe. So, you can see there, there's a power source 18, there's a
8 communications unit 20, and forget the other one that needed to be in there.
9 And go back to slide 22. The electrical circuitry. And so, sorry I'm making
10 you flip back and forth between the slides. Going back to slide 24 now.
11 There's a signal conditioning means and a microprocessor 19. And so,
12 collectively all those are clearly labeled here in Figure 3. They're all within
13 the overall housing 16. And so, LeFebvre discloses this limitation.

14 If we move to slide 26. So, another argument that Patent
15 Owner raised is both sides are actually citing the same paragraph at the end
16 of the specification. It's in both the '223 patent and the '673 patent that talks
17 about alternative embodiments of the invention and actually incorporates the
18 LeFebvre patent by reference. The exhibit that we cited is actually the
19 publication that later issued as the '218 patent that is referenced there. And
20 so, here at the end of the specification, the adapter pad that LeFebvre
21 discloses is expressly referred to as an embodiment of the invention that's
22 directed to alternative houses. I know Patent Owner is trying to read this
23 language as actually distinguishing LeFebvre.

24 From my perspective as, you know, a practitioner who drafts
25 patents on occasion, if the goal were to distinguish LeFebvre this would be a
26 very odd way to go about that. When I draft a patent application and want to

1 distinguish prior art I might discuss it in the background section. I might
2 identify deficiencies in the prior art, explain how the present invention
3 overcomes those deficiencies takes a different approach. I certainly
4 wouldn't incorporate it by reference, describe it as an embodiment of the
5 invention, and state that it could be adapted for use with the present
6 invention, right?

7 From my perspective, even if you were to agree with Patent
8 Owner that what LeFebvre discloses isn't a housing under their construction,
9 and again, we think it is, the last sentence there of that paragraph where they
10 admit that it could be adapted for use with the present invention, that's an
11 omission at the very least that LeFebvre could have been readily adapted or
12 changed to contain a housing that would fall within the scope of the claims.

13 And that's exactly what our expert testified, which is that a
14 POSITA would have understood that you can vary the shape, the size, the
15 material of the housing as needed, for example, to mount it in a different
16 location on the railcar, or to deal with different types of environmental
17 conditions that you might be expecting based on, you know, what type of
18 railcar it is or where it might be expected to travel. All of this is routine and
19 predictable. There's nothing unexpected about selecting a housing.

20 JUDGE WOODS: Okay. Mr. Rakestraw, if I could
21 interrupt to ask a question, I would appreciate that. So, I understand that in
22 the alternative, if LeFebvre doesn't disclose a housing, Petitioner submits
23 that it would have been obvious to modify LeFebvre to have a housing as
24 recited in the claims. And if you could direct me to the petition or the brief
25 to support that, including, you know, what exactly is the reason for that?

26 MR. RAKESTRAW: Absolutely, Judge. So, it's page 22

1 of the petition. And what we argued there was a POSITA would have
2 understood that the shape, size, or material of LeFebvre's housing could be
3 changed, for example, to accommodate mounting the sensor device in a
4 different location of the railcar without affecting the operation of the sensors
5 or the circuitry contained within it.

6 JUDGE WOODS: But would there be like, what would be the
7 reason? Would it be to protect from debris that might fly as the railcar's
8 rolling down the tracks? Or are there reasons for making the modifications?

9 MR. RAKESTRAW: Yes, Your Honor. So, the purpose of a
10 housing in general is to protect from all the environmental dangers, you
11 could call them, that this is going to experience. This is sitting on the
12 outside of a railcar that's traveling at a high speed down the railway, right?
13 And these are sensitive electronic components that are inside. And so, the
14 purpose of the housing is to protect those from the environment, from wind,
15 from rain, from dust, from rocks that fly up. And so, depending on the
16 environmental conditions that are expected, it would have been obvious to
17 design the housing and to choose appropriate materials and kind of a shape
18 and configuration as needed for that. We discussed that in the petition and
19 additionally in our reply brief at pages five through six, as you can see on
20 the slide.

21 JUDGE CALVE: Thank you. And Mr. Rakestraw, this is
22 Judge Calve again. Before you pick up again, thank you for the answers, by
23 the way. Do you have a position regarding the citation that you've provided
24 on slide 26 that says one or more motes may be housed in alternative
25 housings or built into the railcar. And then the next sentence is motes can be
26 built as an adapter pad. Do you have a position, you, or your expert, that is

1 the adapter pad then? We'd understand that to mean the adapter pad is an
2 alternative housing.

3 MR. RAKESTRAW: Yes, Judge, that's exactly what we
4 argued in the reply brief and our expert, Mr. Ricca, agreed with that as well.
5 And I think just from a textual standpoint, it says motes can be built into the
6 form of an adapter pad, and LeFebvre discloses a housing that's in the form
7 of an adapter pad. So, I think this paragraph very much supports and is
8 consistent with Mr. Ricca's testimony that a POSITA would understand the
9 adapter pad to be a housing.

10 JUDGE CHERRY: Mr. Rakestraw, would it, or could it be
11 that, I mean, I guess I'm, I just wanted to push back and see what about, or
12 built into the railcar itself, would the pad be considered something you've
13 built into the railcar, or would it be considered something more? I guess I'm
14 trying to see where the line is between that or alternative houses or built into
15 the railcar itself and where the pad would fall between those two.

16 MR. RAKESTRAW: Yeah. Thank you for that question,
17 Judge. Just from looking at the text, I don't think it's clear. I think you could
18 read it either way. And this is a point on which the expert witnesses had
19 disagreed. Our expert, Mr. Ricca, testified that a POSITA would understand
20 this to be a housing. But I think if you look at it from the perspective of
21 LeFebvre, it describes the instrumented pad as having a polymeric body that
22 sort of into which the sensors and the electronic circuitry is, is enclosed,
23 right? And so, that body acts as a housing. It performs the function of a
24 housing. It protects the components from environmental damage and keeps
25 them from getting rained on and from, you know, dust from falling on them
26 and getting hit by rocks.

1 And so, it performs the function of a housing. It is incorporated by
2 reference in a paragraph that is discussing a housing, and I understand Patent
3 Owner's argument that you can try to read the language in a particular way
4 that would distinguish it. But again, from my perspective, if the goal was to
5 distinguish LeFebvre, this is a very strange way to do that, right? Describing
6 it as an embodiment of the invention and incorporating it by reference.
7 Typically, when we distinguish prior art in patent applications, we would
8 talk about it in the background and clearly explain what is different about it.

9 JUDGE CHERRY: Thank you.

10 JUDGE CALVE: Well, yeah, to further what Judge Cherry
11 said, you've pointed out that the instrument pads, they sit on top of the
12 bearing adapter. So, is that more like something that's built into the railcar
13 itself by being laid on top of the bearing adapter? Or is that not really
14 relevant either?

15 MR. RAKESTRAW: I don't see that that's relevant, Judge,
16 because the adapter pad that LeFebvre describes is -- its function is to
17 monitor the vibrations and the temperature and other factors emanating from
18 the bearing. Right. It has a bunch of sensors embedded into it. It has
19 electronic circuitry and a processing unit and a radio that communicates
20 those readings to the CMU on the railcar. And the purpose of the housing,
21 right, the elastomeric add that surrounds these components is to protect those
22 components to keep them in place to ensure that they don't become damaged
23 in the harsh environment of a railcar. So, it acts as a housing. Whether it
24 also has some other function, it sits in the load path, that may be true. But I
25 don't think those things are mutually exclusive. Right. I think it can act as a
26 housing, even if it's sitting on the top of the bearing adapter. Certainly, that's

1 not excluded from, if you look at the language of the claim.

2 JUDGE CHERRY: Are you aware of anywhere in the
3 challenged patent where it, or in LeFebvre, where it provides some reason
4 for selecting one housing over another? Or do you see this as kind of a
5 design choice by the, you know, a POSITA?

6 MR. RAKESTRAW: The latter, Judge. I'm not aware of any
7 place in, certainly in the challenged patent specification that recommends a
8 particular type of housing. And I think the silence on that is actually very
9 telling. If you look at this paragraph, you know, it recommends and it states
10 that a POSITA could select alternative housings for use with this claimed
11 invention. Right. The LeFebvre housing could be readily adapted for use
12 with the present invention. It doesn't provide any follow up. There's no
13 additional guidance that's provided to a POSITA about how you would go
14 about selecting a housing material or shape or size or configuration. And
15 frankly, that's because that guidance is not necessary, because all of this is
16 well within the ordinary skill of a person in the art.

17 JUDGE CHERRY: Okay.

18 JUDGE CALVE: And, Mr. Rakestraw, you said one purpose is
19 obviously to protect the components, and another may perhaps overarching
20 purpose is this creates a discrete self-contained unit that can be attached to
21 various portions of a railcar. So, it serves the function of a housing in your
22 estimation, and then like the claims, it can be attached, well, LeFebvre can
23 be attached to the wheel bearing adapter, this on top rather than on the side,
24 as we have seen in the revised motion. But is -- what's your position on
25 that?

26 MR. RAKESTRAW: That's, I agree with you, Judge, is I think

1 our position. The claim language doesn't require the housing to be attached
2 in any particular location. And let's pull up slide 22 again so we can look at
3 the claim language directly. So, the claim just requires a housing. There are
4 other claims that require it to be mountable on a railcar. Let's pull up slide
5 23. So, Claim 23 states that the housing must be mountable on a railcar. It's
6 limitation 23(a). But there's no specific location on the railcar that's
7 specified, right?

8 Certainly, the top of the bearing adapter is on a railcar. And there's
9 also no requirement that any particular housing is suitable for mounting at
10 multiple locations, right? So, it's not a requirement that LeFebvre's housing,
11 as it currently is constructed and described in LeFebvre, would be able to be
12 mounted on the side wall or on, you know, some other part of the railcar.
13 It's sufficient that it's mountable on a railcar, which clearly it is. But I do
14 think that what a POSITA would understand and what our expert testified to
15 is that it would have been obvious to design an appropriate housing for
16 wherever you wanted to mount sensors on a railcar. And you would design
17 the housing so that it was compatible with the particular location, right?

18 So, a housing mounted on a side wall of an adapter might look a
19 little bit different than a housing mounted on the top of an adapter. But
20 making those changes is well within the ability of a POSITA and wouldn't
21 require inventive effort.

22 JUDGE CALVE: Thank you.

23 MR. RAKESTRAW: Let's move to slide 30. Unless there are
24 any further questions on housing, I'll move on to our next LeFebvre topic.
25 So, LeFebvre discloses the use of heuristics. This is something that the
26 Board found correctly in the institution decision. It doesn't use the word

1 heuristics, per se. It uses the word inference. It calls its system an inference
2 engine. But from reading the disclosure of LeFebvre, it's clearly doing the
3 same thing. The CMU is collecting information from all the sensors on the
4 railcar, and then drawing inferences from that data as to the status of the car.
5 And so, our position is that that is heuristics, even though it doesn't use the
6 exact language of the '223 or '673 patent.

7 Move to slide 31. We also identified several examples where
8 LeFebvre uses heuristics to detect actual failure conditions on a railcar. So,
9 flat wheels, wheel derailments, truck hunting, which is when the truck is
10 kind of waving and wiggling back and forth as it goes down the railway, a
11 displaced roller bearing adapter a serious condition for sure. If we move to
12 slide 32.

13 JUDGE CHERRY: What's the difference between an actual
14 failure and a potential failure? I mean, I was kind of --

15 MR. RAKESTRAW: That's a great question.

16 JUDGE CHERRY: Where do we draw the line there? Do
17 we --

18 MR. RAKESTRAW: That's a great question, Judge, and I think
19 the specification of the challenge patents isn't entirely clear on that. Our
20 position is that because LeFebvre, and also Armitage, disclose all the same
21 types of conditions as the challenged patents that they necessarily disclose
22 both actual failures and potential failures. And so, it's not necessary for the
23 Board necessarily to make that distinction or to formally make that
24 distinction because the disclosure of the prior art and the challenged patent is
25 virtually identical.

26 Move to slide 32. I wanted to briefly touch on statistical

1 analysis here because I know that's another issue that came up in the
2 briefing. LeFebvre discloses several techniques that utilize statistical
3 analysis, you know, identifying periodicities in a time series in paragraph 54,
4 calculating long-term trends from collected data in paragraph 58, frequency
5 spectrum analysis in paragraph 59, detecting high amplitude loads that
6 repeat periodically in paragraph 60. One thing that our expert testified to is
7 that, you know, he's really unaware of any method, for example, that you
8 could use to generate a long-term trend from a large collection of data points
9 without the use of statistics, right? So, even though LeFebvre doesn't use
10 the word statistics, it is describing examples of statistical analysis throughout
11 its specification.

12 If we move to slide 33.

13 JUDGE CHERRY: I didn't see anywhere in the patent that it
14 said what some specific statistical method, right? It just says statistical
15 analysis generally. Is that the --

16 MR. RAKESTRAW: Are you talking about the challenged
17 patents, Judge?

18 JUDGE CHERRY: Yeah, yes.

19 MR. RAKESTRAW: I agree with that. Yeah, from our
20 perspective, LeFebvre provides at least the same level of detail with regard
21 to the statistics as the challenged patent does.

22 If we move to slide 33. LeFebvre also discloses that it uses
23 these methods to identify potential failures. So, for example, in the claims,
24 Claim 12, Claim 21, Claim 22, all those reference vibration levels, values
25 that are indicative of potential failure. And so, Judge to your point,
26 LeFebvre clearly does disclose that it is capable of detecting potential

1 failures precisely what counts as a potential failure versus an actual failure
2 when you cross that line from potential to actual. That's murky but I don't
3 think the Board needs to resolve that to find that LeFebvre discloses both.

4 If we move to slide 37. Just wanted to cover one more topic on
5 LeFebvre this morning. In terms of assigning a severity level to deviations
6 from nominal operating conditions, that's another argument the Patent
7 Owner has raised. The first thing I want to point out is that LeFebvre
8 expressly discloses the use of alarm levels, plural, they can be used to infer
9 the well-being of a roller bearing. As both LeFebvre describes and the
10 challenged patents describe, alarm levels, if there's multiple alarm levels,
11 then they're based on different levels of severity. And so, while LeFebvre
12 doesn't expressly say the word severity levels, again, there's a lot of
13 disclosure that indicates that it is doing the same thing.

14 If you move to slide 38. Again, LeFebvre clearly discloses that
15 it looks at the data that comes in, right, meaning the CMU, and it identifies
16 one, if there's some data that indicates that a component is performing out of
17 specs, right? And then it makes a determination, okay, is this this deviation
18 from what we expect sufficient to cause alarm, right? Is it sufficiently
19 severe? Is the magnitude of the deviation sufficiently large that it warrants
20 raising an alarm? And from our perspective, that discloses a severity level.
21 It is looking at deviations that are being detected using the sensors and it is
22 determining are these deviations severe enough to warrant raising alarm or
23 are they not? And so, in that sense it is assigning a severity level as required
24 by Claim 1 of the '673 patent. Any other questions about LeFebvre before
25 we move on to Armitage?

26 Okay. Move to slide 47. So, with respect to Armitage, Patent

1 Owner has attempted to swear behind. Armitage is a 102(e) reference.
2 Other than the swear behind, which we're going to talk about now, the
3 remaining arguments that Patent Owner presented post-institution are just
4 literally verbatim identical to those that it filed in its preliminary briefing.
5 So, if you look at this timeline, the alleged date of conception asserted in the
6 Patent Owner responses is March 2010.

7 And something I want to point out is that they actually revised that
8 in their sur-reply to assert April 2010. I have March 2010 up here because
9 that's what they said in the response, but just wanted to point that out for the
10 Board that that did change between the Patent Owner response and then the
11 sur-reply briefing. There's a gap of nearly a year between the alleged
12 reduction of practice in August 2011, and then the actual provisional
13 application filing in June 2012. Okay. So, there's a long gap there that
14 occurred that is sort of unaddressed in the exhibits.

15 And then one more thing I wanted to point out on this timeline,
16 I listed the '713 application, which has a filing date of August 23, 2010. You
17 might recall from the preliminary briefing, the '223 and '673 patents claim
18 priority as a continuation in part of the '713 application. That was addressed
19 during the preliminary briefing and the Board correctly found that the '713
20 application does not provide support for the challenged claims. It's solely
21 directed to a handbrake sensor.

22 Move to slide 46. So, Armitage is prima facie prior art under
23 both 102(a) and 102(e) because its U.S. non-provisional filing date is prior
24 to the U.S. non-provisional filing date of the '223 and '673 patents. And
25 what we showed in our reply is that Armitage is prior art as of its provisional
26 application filing date. And according to the MPEP, we have to show that at

1 least one claim of the 102(e) reference is supported by the disclosure of its
2 provisional application. We showed that Claim 1 is supported by those
3 paragraphs two, seven, and nine of the Armitage provisional. Having made
4 that showing, the entire disclosure of Armitage is available as prior under
5 102(e). And that's MPEP 2136.02.

6 JUDGE CALVE: Okay. But, Mr. Rakestraw, if I can interrupt.
7 So, we still have the issue, even if we concede or allow you to claim the
8 provisional, Patent Owner still is arguing conception prior to May 11th,
9 2010, right?

10 MR. RAKESTRAW: That's correct, Your Honor.

11 JUDGE CALVE: Okay. Well, so --

12 MR. RAKESTRAW: Go to slide 46. I'm sorry. Go ahead,
13 Your Honor.

14 JUDGE CALVE: Yeah. So, just with the '673 patent, the
15 Claim 1, what is missing from their conception evidence, either Mr. Martin's
16 declaration or the slides it's based on, where they show the monitor in the
17 railcar locomotive receiving ambient clear. So, it seems that it received data.
18 Now that seems to be a heuristic that was applied and cleared. And that's
19 one of their assigned severity levels. What have they not conceived in
20 Claim 1 with that PowerPoint slide?

21 MR. RAKESTRAW: Which slide are you referring to, Judge?

22 JUDGE CALVE: All right, let's pull it up here. It's in several
23 places, Mr. Rakestraw. Could you take a look at Amsted's Exhibit 2020?
24 That's one of the instances. And it's attached to an email dated April 4th,
25 2010. So, I think that's one of the bases for that April date of conception.
26 And let's see here.

1 JUDGE CHERRY: Yeah, I think it was the Martin Declaration
2 talks about it.

3 JUDGE CALVE: Exactly. And the Martin Declaration
4 incorporates this as well. But either source, Mr. Rakestraw, if you want to
5 go to the original source material that Mr. Martin refers to, this would be one
6 illustration. And page 8 of 11 of Exhibit 2020 shows above ambient is clear,
7 which seems to be one of the heuristics as I understand it. And the next
8 slide, 9 of 11, gives the bearing temperature. So, that seems to be that beside
9 the severity level, and they have applied heuristic and they've determined an
10 alarm and we actually have evidence that this is the alarm in the locomotive.
11 So, that seems to be conceptual, at least of the Independent Claim 1.

12 MR. RAKESTRAW: Yeah, Judge, let me kind of address that
13 from a big picture perspective first, and I'll zoom in and tackle Claim 1.

14 JUDGE CALVE: Sure. Yeah, it's a big issue. There's a lot of
15 material to get through. Thank you.

16 MR. RAKESTRAW: It is, yeah. So, let's move to slide 48.
17 So, there are two primary issues that we pointed out in our briefing. The
18 first is, you know, there's this requirement that conception must include
19 every feature or limitation of the claimed invention. And in the Patent
20 Owner response, Patent Owner presents this lengthy sort of research and
21 development timeline, right? And they filed well over 100 exhibits,
22 thousands of pages of exhibits that they went through. What they didn't do
23 was actually map any of that evidence that they presented in the timeline to
24 the specific claim limitations.

25 In particular, they didn't do what you just asked me about, Judge,
26 which is say, here is the specific part of this very long timeline and all these

1 exhibits that would provide support and show prior conception of Claim 1.
2 And our position is that that was their burden to do that, to meet their burden
3 of production. Because otherwise, what that really put on us was the burden
4 of pouring through hundreds of exhibits with respect to each claim, right?
5 Between these two proceedings, Judge, there's 50 challenged claims in total.
6 There's 29 in the '223, there's 21 in the '673. And eight of those claims are
7 independent, right?

8 So, there's four independent claims in each patent. That's a very
9 large number of different combinations of claim limitations that they would
10 need to show prior conception for, and that we would be on the hook to pour
11 through all the evidence and try to piece out, okay, if I read through all
12 hundred pages, can I figure out what they might have been arguing as
13 support for Claim 1, right? What they might have been arguing as support
14 for Claim 2. And then coming back and explaining and basically knocking
15 down my own argument, right, saying this is what they could have argued
16 with objective Claim 1, and here's why that would not have been correct.
17 That wasn't our burden to do that. That was their burden to clearly point that
18 out. I'm sorry, Judge, I think you're muted.

19 JUDGE CALVE: Very good. I am. Thank you. I did. We
20 checked it. We checked the ability in the patent bar to see if you do lip
21 syncing and lip reading. I guess, okay we won't add that to the new
22 requirements. We'll have to check that on rule making. All right. Thank
23 you very much. So, if we look at the revised motion to amend, and that was
24 paper 32, I'm just picking a page, page six they seem to be providing a fair
25 amount of support here in the patent itself. Now, you're saying they haven't
26 correlated the actual material until they came back with what their reply?

1 JUDGE CHERRY: And I think it's in the sur-reply. No, I
2 mean --

3 MR. RAKESTRAW: Yeah, let's --

4 JUDGE CHERRY: I mean I hear what you're saying but I
5 guess we have -- they have provided some mapping I guess. I mean it
6 seems like you have an argument at least it for the, what's this the '230 -- the
7 '223 patent, you know, you have an argument about Claim 5 and the claims
8 that depend from that. But I was looking for it through your briefing. I
9 didn't really see an argument specific to such, like Claim 2 and Claim 23.
10 Can you point me to what in the evidence have you pointed as missing for
11 Claim 2 and Claim 23? And my understanding is Claim 1, they're not
12 contending an earlier priority date, or is that correct? As best you
13 understand, I'm not trying to make the argument.

14 MR. RAKESTRAW: As best I understand it, yeah. In the
15 original '223 Patent Owner response, they asserted that all claims were
16 entitled to this date. And then they came back in the sur-reply and said,
17 actually not all claims. There's only a subset, not Claim 1. That's in addition
18 to changing the alleged date of conception from March 2 to April.

19 Judge, let's go to slide 55, if we could. So, in both of the sur-
20 replies, okay, they included this new table that actually maps or attempts to
21 map the evidence of conception to the challenged claims. And this is what
22 we can contend that they should have done in the Patent Owner response.
23 Move to the next slide, please. So, this is a portion of the table that they
24 presented for the first time in their sur-reply. And if you think about this, I
25 think it'll become clear why this is new argument that was presented for the
26 first time improperly in sur-reply.

1 And also, should have been presented in the Patent Owner
2 response, okay. What this table does is it says or Claim 5. And by the way,
3 I don't know why there's a 5(a) and a 5(b), they don't appear to correspond to
4 limitations 5(a) and 5(b). I think it's two alternative ways of mapping Claim
5 5. Regardless, what this table does is it says, or Claim 5 out of the hundreds
6 of exhibits that were filed. Here are the exhibits. Here's a page number that
7 actually provides support for Claim 5, right? And here's the portions of our
8 inventor's testimony and declaration that actually provides support for Claim
9 5. That was missing in the Patent Owner response.

10 And they put the burden on us to comb through, again, well over
11 100 exhibits that were filed on this issue, thousands of pages. I mean I
12 printed them all out and it's a giant banker's box full of paper. To go through
13 all those and to try to discern what they could be relying on support to
14 support each claim limitation. And had they presented something like this in
15 the Patent Owner response, yeah, we could have responded to it. And we
16 could have said, for example, for Claim 5(a), you haven't shown in any of
17 these cited exhibits where the heuristics or statistical analysis actually takes
18 place on the CMU as it's required. Right. It appears to be taking place in
19 the cloud or somewhere else.

20 But they didn't provide that evidence in the Patent Owner response.
21 And so, we didn't have anything to respond to. And now it's filed for the
22 first time in sur-reply and it's too late. We haven't had a chance to respond
23 at all. And so, I think that's the primary issue that we have with that
24 evidence is it wasn't presented in a way that clearly showed how each claim
25 limitation was conceived of as the law requires. And it put us in a position
26 where we, for practical purposes, couldn't prepare a substantive response

1 without first constructing a whole argument from scratch ourselves and then
2 knocking it down.

3 What we did do and what we tried to do is actually respond to
4 the timeline as they presented it. And I want to make sure it's clear what we
5 were doing there. If you go to slide 51. So, because all they gave us was a
6 timeline, we did go through the timeline and we were able to identify what
7 appeared to be very key developments directly related to claim limitations
8 that were occurring after the date of conception. Okay? So, the level two
9 and level three algorithms, as they're called in the patent specification, those
10 weren't even proposed until November of 2010. As of November, they were
11 still figuring out where they were even going to mount the sensors. It wasn't
12 until Summer of 2011 that they were still working on the manner in which
13 the nodes collect data at periodic intervals.

14 Judge, when you think about the language of these claims, these
15 are the features predominantly that they're relying on to distinguish the prior
16 art, right? These are the claim limitations that they're arguing as providing
17 novelty and non-obviousness for the presently challenged claims. And so,
18 the fact that these were still under active development, in some cases over a
19 year after the alleged conception date, that doesn't meet the standard for
20 conception, which requires a permanent and definite idea in the mind of the
21 inventor as of the date of conception of how these are going to be
22 implemented in practice. They simply didn't have that.

23 So, we can go through the timeline and identify some of these
24 deficiencies and what was presented, but that's kind of a second issue. The
25 first and most important issue is they didn't meet their initial burden of
26 clearly showing how the evidence they provided supports each and every

1 limitation of each and every challenged claim as is required to show
2 conception.

3 JUDGE CHERRY: I did have a question. What is your
4 understanding of why are some of these, you know, from 2009 and others
5 are from 2011? Is the 2009 was that what -- I mean they're saying the
6 project was this was conceived in 2010 but it looks like there was some
7 other project going on in 2009. Do you have any knowledge of what is
8 going on here?

9 MR. RAKESTRAW: Judge, that's exactly the type of question
10 that we would have been in a better position to answer had they actually
11 mapped the evidence to the claims in the Pat Owner response.

12 JUDGE CHERRY: I mean, I do have a question. Did you take
13 the deposition of Mr. Martin or any of the -- doesn't look like Mr. LeFebvre
14 submitted anything and I understand Dr. Wilson works for your company
15 now, but were you able to take the deposition of Mr. Martin, who seems to
16 be their main witness?

17 MR. RAKESTRAW: We did not, Your Honor. Although,
18 Patent Owner does bear the burden of production on this issue, right? So,
19 they -- our position is that they failed to meet that burden.

20 I'd like to briefly touch on one final question.

21 JUDGE CALVE: Mr. Rakestraw, I apologize. This is Judge
22 Calve. I apologize twice for interrupting, and also I neglected to let you
23 know, but your 45 minutes is actually up. But I -- if you'd like to just wrap
24 up quickly with a few more minutes, I apologize. I didn't get to that five
25 minutes warning.

26 MR. RAKESTRAW: That's perfectly okay, Judge. I

1 appreciate the heads up. I will, I will wrap up here. Thank you.

2 JUDGE CALVE: All right. Mr. Miller, it looks like the stage
3 is yours. How much time would you like to reserve if any for the rebuttal?

4 MR. MILLER: Yes, Your Honor. I'd like to reserve 10
5 minutes for sur-rebuttal on the motion to amend if I may.

6 JUDGE CALVE: Okay. So, your argument, principal
7 argument, will be 50 minutes. Okay. You may begin when you're ready.

8 MR. MILLER: Sure, and thank you very much, all of you, for
9 being here today. We appreciate it. I'm going to kind of start backwards a
10 little bit, because I think it's important to talk about, since it's fresh in
11 everybody's mind, some of the stuff that was just discussed at the end of my
12 colleague's presentation with regard to the prior invention evidence. One
13 thing I would like to note just with respect to what he referred to as the
14 timeline narrative evidence that we provided, we did provide a lot of
15 evidence there. We provided a declaration by one of the inventors
16 describing the development process. And as he noted, we submitted quite a
17 bit of evidence to support that timeline. So, I'm not quite sure how we failed
18 a burden of production on our claim. Secondly, --

19 JUDGE CHERRY: Wait, stop.

20 MR. MILLER: Yes.

21 JUDGE CHERRY: I mean, there is Federal Circuit case law,
22 the Parus v. Google case that was handed down, I think, in the last year. But
23 the Federal Circuit explained that, you know, you can't just dump a lot of
24 evidence in to meet your burden of production. So, you have submitted a lot
25 of exhibits, but, you know, where have you explained? I think what we need
26 to see is some explanation of what, of how this timeline is working and

1 when the conception was and when, you know. So, there does have to be
2 some explanation in the briefing.

3 So, I am sympathetic to your, you have some analog stuff and a lot
4 of evidence of work that was going on, but I do think there is, you know,
5 that is not enough and I don't, you know, I do want to hear some explanation
6 of how this evidence fits together. And I think that that's within the case law
7 to expect, so.

8 MR. MILLER: Understood, Your Honor, and I don't disagree
9 with that at all. I was about ready to say that, you know, we provided the
10 timeline evidence. In that narrative we discuss claim elements. Perhaps we
11 didn't do as good a job at identifying them at the time. However, one thing I
12 will note, which my colleague didn't bring up, is that the expert for his own
13 benefit created a chart in his declaration. We did not cite to that chart. So, I
14 don't think you can say this is inappropriate incorporation by reference. But
15 at the very least, that's additional evidence for you, the Board, to look at in
16 terms of whether we met our burden.

17 Secondly, in our in our sur-reply the table that Mr. Rakestraw
18 mentioned in our sur-reply, we have citations to the Patent Owner response
19 in that table that direct both Mr. Rakestraw, and you to where in the Patent
20 Owner response, we did discuss the individual claim elements. You know,
21 that in our view, meets our burden. You know, it's up to you, the Board, to
22 determine whether we, you know, we are successful in arguing that this
23 evidence, you know, supports conception, of course. Along those lines, one
24 thing I want to note is there's several -- there's one slide that Mr. Rakestraw
25 put up that listed out different elements that he stated were conceived later.

26 First thing I want to say is there seems to be some confusion about

1 the difference between conception and reduction to practice. You know,
2 conception requires proof that the inventor formed in his mind a definite and
3 permanent idea that is later applied to practice. The reduction to practice
4 must prove that there's an actual construction of an embodiment and that it
5 worked for its intended purpose. All the evidence he cited to in that slide,
6 most of it anyway, was related to the reduction to practice trying to figure
7 out where is the best place to put it on. We know we want to put it on the
8 adapter, where's the best place. That is all part of the typical work that goes
9 into reducing to practice.

10 I also want to make specific mention of particular aspects that --
11 yes.

12 JUDGE CHERRY: I do have a question because, --

13 MR. MILLER: Sure.

14 JUDGE CHERRY: I mean, I look, you know, your client's
15 company makes these devices. So, they make them, I mean, I guess I'm
16 confused about, for example, for Claim 5 of the '223 patent, we have a
17 discussion of the analysis taking place on the CMU. And, you know, in all
18 the testing and then all, you know, and then the slide presentation that Mr.
19 Martin provided, you know, they're sending, it appears as best as I can
20 understand it, they're sending the data to some server, some central location
21 where they're doing the processing and then they're sending the alarms back.

22 And now I see like you were citing to things like from your, you
23 know, months before you claim that you conceived where some other
24 project appears to be doing a CMU, like, but I mean, I guess I'm confused.
25 What project are you relying on? Like, why are these other projects getting
26 tied in? Are we just supposed to mix and match from different projects you

1 were doing to assemble the claim?

2 MR. MILLER: So, I'm not 100 percent sure I know what you
3 were referring to when you say another project. Can you point me to an
4 exhibit that you're thinking of?

5 JUDGE CHERRY: Exhibit 2162.

6 MR. MILLER: Twenty-one --

7 JUDGE CHERRY: Exhibit 2162. So, an email from 2009 with
8 an attachment that you're saying is the conception of the CM, of doing the
9 analysis on the CMU?

10 MR. MILLER: That's the, Your Honor, that's the same project.
11 This is the project plan that was developed before. The SCT logistics project
12 occurred in Australia. The installations occurred in March of 2010. This
13 particular document was a test plan that was developed in December of
14 2009. They had to develop it before they could go and install it. So, that's
15 what this.

16 JUDGE CHERRY: So why isn't that the conception?

17 MR. MILLER: It's -- so, you know, I think the answer is what's
18 the conception of the full claim, right? Obviously, things could happen at
19 different times in terms of when particular aspects of it may have been
20 conceived. For example, power management was something that had been
21 around for a while. But in terms of the full scope of the claim, the final four,
22 you know, in the example of the Claim 5.

23 JUDGE CHERRY: I mean, I guess what I'm struggling a little
24 bit with is it looks like the final conception was not doing the analysis on the
25 CMU. And then later you went to the CMU. You know, I mean, I think we
26 can all agree that this was a known idea because the earlier LeFebvre

1 reference. So, as prior art does it that way. But, I guess for conception,
2 don't you have to have the claim as it's arranged or do you -- is it enough that
3 this idea was out there and then you went back to it or adopted it later?

4 MR. MILLER: Well, so I'm not quite sure. I mean, again, I
5 want to reiterate this document is from the same project. So, it's not like this
6 is some different project they borrowed from later. This is all part of the
7 same project.

8 JUDGE CHERRY: But they went away from that, right? At
9 least --

10 MR. MILLER: I'm not sure they went away from it. I think
11 they may have been trying to figure out how to do it, which is reducing it to
12 practice. But in terms of the initial pilot test in March through June of 2010,
13 it's true. They sent it. They sent the data to the servers because that's what
14 they had the capabilities with at the time. But they had the idea to do it
15 using the CMUs. And it was later, they actually were able to reduce that to
16 practice. That seems to be fitting with the requirements. So, I'm not, again,
17 I'm not entirely sure what the concern is.

18 JUDGE CHERRY: Well, I think I tried to express my concern.
19 I don't -- my concern is that does the conception have to be out the whole as
20 it is arranged in the claim or can you have conceived -- have all these ideas
21 and then you have one and then you start building it and then you decide to
22 change it. I mean, at what point does the conception -- does it have to be of
23 the whole thing? Or is it enough that these ideas are out there? And do you
24 have any good cases that you can point us to?

25 MR. MILLER: Sure, I mean, I don't -- so, I would agree that it
26 has to be the whole claim. I think the question is whether we are required to

1 present a single document where that is the case. I don't think that's --

2 JUDGE CHERRY: No, I'm not saying that, but it seems like
3 the thing that you're saying is the moment of conception, they were doing it
4 a different way and then they changed it to a different, then they changed.
5 So, that's why I'm trying to understand. Is it enough that, oh, they knew that
6 there was this other way they could do it, is that enough, and could you point
7 us to a case that says that which would be helpful? Because they're arguing
8 that you didn't have the -- you didn't have this system where the CMU was
9 doing the alarm calculation. So, that's my question and that's why I'm asking
10 it.

11 MR. MILLER: Sure, I mean, I don't -- the case law, I think,
12 wouldn't be any different than what we've cited in our briefing. As far as
13 the -- there are -- so, one thing I want to point out is that on paper 20, page
14 39, there's a discussion on the CMUs. Let me get to that as well so that
15 we're all looking at the same thing. Pardon me a second to make sure I got
16 the right. Okay, let me just. So, this is for the -- apologies, Your Honor.
17 So, again, page 39. There's a discussion of updating -- this is updating the
18 thresholds of all units to calibrate the sensors and on it, there's a citation here
19 to Exhibit 2031.

20 And if we go to that. Let me get that open. Yeah, there's a
21 discussion about the CMU above ambient inferences and axle difference
22 inferences. And this was from April 2010. So, again, I'm not quite sure
23 where there's this dividing line between what just was thought up and what
24 was changed later. I'd like to -- what we attempted to do is to show how the
25 development occurred throughout the process. There may have been fits and
26 starts. There may be things, and the way these things go from an

1 engineering perspective, sometimes certain issues need to be dealt with and
2 other things are dealt with at a different time. But in terms of the idea, the
3 idea certainly was there.

4 They were actively trying to reduce it to practice as of April 2010,
5 as shown in Exhibit 2031. So, you know, that's in reference to the CMUs. I
6 have others as well to talk about just to make sure that I get some on the
7 record in terms of, you know, predictive algorithms conceived by April
8 2010. That's from Exhibit 2022 at 16, discussed at paper 20 at 39. Sensors
9 installed at the precise location shown in Figure 3 of the patent by March
10 2010. That's Exhibit 2016 at 6, paper 20 at 30, and Exhibit 2162 at 4, paper
11 20 at 28.

12 Periodic intervals, which my colleague mentioned, this was
13 occurring prior to the changes in the sampling rate they identify. The
14 equipment installed in March 2010, sampled every 15 seconds, averaged
15 across one minute. That's at Exhibit 2022 at 15, paper 20 at 29, excuse me,
16 38 to 39. And then paper, excuse me, Exhibit 2047 at 5. And that has to do
17 with the power management.

18 And then I just want to note that unless there's something that I
19 missed, I do not believe there's any claim that requires the heuristic or
20 statistical analysis to occur in the sensing units. Which is something that
21 was mentioned in there on their slides. Nonetheless, the sensing units as of
22 April 2010 performed temperature thresholding analysis. And that's the
23 same Exhibit 2031 at pages 1 to 4 and page paper 20 at 39. So, you know,
24 again, --

25 JUDGE CALVE: Mr. Miller, let me interject.

26 MR. MILLER: Yes, sure.

1 JUDGE CALVE: Where's the description of the statistical
2 analysis? I wasn't clear on that. I understand the heuristics. Where is the
3 conception or reduction of practice of what you're calling statistical analysis
4 which you seem to differentiate from heuristics?

5 MR. MILLER: Sure, Your Honor. So, I think the, pardon me a
6 second. Let me make sure I've got the right document open. Here we go. I
7 may have to get back to you on that. But the, I think, again, in reference to
8 the conception, this is whether they had an idea, a plan, you know, to
9 perform it. So, --

10 JUDGE CALVE: And with the other limitation periodically,
11 which is the power management feature, one of the documents in the '539
12 cited to a glossary from 2009, and it talked about an edge device that awoke
13 or slept. Is that something the inventors came up with or is that sort of a
14 commercial off the shelf item that they incorporated into this whole system?

15 MR. MILLER: No. That -- my understanding is that that was
16 something they had developed and was at the time, at least proprietary to
17 them. At least that was -- that's my understanding from that document.
18 That document that you're referring to, I believe is the glossary that they
19 used internally to, you know, make sure everybody was talking about the
20 same thing when they would say, for example, power management.

21 JUDGE CALVE: Exactly. Yes.

22 MR. MILLER: Yeah. Yeah, that was something they already
23 had, you know, I think there's certainly some aspect of it that's disclosed in
24 the LeFebvre reference, which, by the way, is an Amsted owned patent and
25 actually shares an inventor to all the challenged patents in this proceeding.
26 To answer your question, though, on the statistical analysis, I'll point you to

1 Exhibit 2162. Again, that is cited on paper 20 at 28, I believe. On page 7,
2 where they talk about temperature gradients and then statistical outliers.
3 So -- I'm sorry, go ahead.

4 JUDGE CALVE: The example is a statistical outlier is what,
5 but it's one species or example of what you're trying to encompass with
6 statistical analysis in the claims.

7 MR. MILLER: Well, I certainly think that that would be part
8 of it. You know --

9 JUDGE CALVE: Well, let me ask you, does analysis of trends.
10 Like, the prior has, isn't that a statistical analysis?

11 MR. MILLER: It can be. I think the issue that we have there is
12 more about what is disclosed in the prior art. There are, you know, I, there
13 was, there was a mention, which I can't really quibble with that there's not a
14 lot of disclosure in the challenged patent regarding what is statistical
15 analysis, yet it does actually state the word. And so, I think you can have
16 trend. You can have, for example, a series of direct measurements that are
17 just taken over time. You don't perform any statistical analyses on, but that
18 still gives you information, right? Obviously, statistical analysis is one way
19 you can extract the information from that data. But I think it's more a
20 question of whether that is the statistical analysis referred to in the
21 challenged patent versus, you know, what is actually disclosed in LeFebvre,
22 which does not directly any way disclose.

23 JUDGE CALVE: Right. Well, one of the things that is striking
24 about all of this evidence we're discussing and the patents is how little of the
25 reduction of practice and even the conception appears in the description. I
26 don't know if it's the best mode issue or what, but we could turn to the

1 sidewall issue that seems so important in the substitute claims. The word
2 sidewall doesn't appear, at least in the '673. There's a figure of a housing on
3 what might be a sidewall of a bearing for a temperature sensor. How does
4 that provide any description or guidance to mount an accelerometer
5 anywhere on a train to measure vibrations of a bearing, for example?

6 MR. MILLER: Well, the patent does also disclose adapter
7 mounted accelerometers, and the only place that a sensor unit is attached to
8 the bearing adapter that is disclosed in the -- there's many ways to do that.
9 I'm not going to question that. But the one way that is actually disclosed is
10 on the sidewall of the bearing adapter. And I want to note that Figure 3, you
11 know, Figure 3 is its own description. It is a description of a sensor unit
12 attached to the sidewall of a bearing adapter. The description itself, the
13 written description, says that mote 10 includes sensor 20, which may be an
14 accelerometer. That is described in the written description.

15 So, you know, and I don't think this is really a case where we're
16 picking and choosing certain, you know, certain cherry-picked, you know,
17 snippets to piece together our written description support. I think it's very
18 clear the inventors had an idea of putting a sensor unit on the sidewall of a
19 bearing adapter, to use that specific term since that's in the motion to amend,
20 that could include any number of sensors where it makes sense to do so.

21 So, again, there's another aspect of the disclosure that talks about
22 the configuration and location of the sensor may vary depending on what
23 needs to be measured. Well, if you're measuring the vibration of a bearing,
24 the sidewall of a bearing adapter is a very logical place to put it, and it's
25 explicitly disclosed in Figure 3. So, you know, just I wasn't necessarily
26 going to go there, but since you asked the question, I mean, that's what I

1 would say to that.

2 JUDGE CALVE: Let me interject.

3 MR. MILLER: Sure.

4 JUDGE CALVE: What evidence do we have of an expert,
5 yeah, exactly. Your own patent says the location or configuration of
6 sensors depends on the type of sensor and what you're measuring. So,
7 connect the dots. Where's the evidence to take us from an accelerometer to a
8 sidewall? Just the evidence of the temperature sensor? Because remember,
9 that temperature sensor has a very different reason for being at exactly that
10 position on the sidewall, because you have that hole in the mote, and you
11 have the brass plate that's in contact, thermal communication with the
12 epoxies to the bearing.

13 So, it needs to be next to the bearing in thermal contact with the
14 bearing. I'm less assured how that evidence scales or is at all relevant to
15 how you might position an accelerometer. Then what do we have to help us
16 understand that this isn't -- remember, the standard isn't what's obvious. The
17 standard is what (INDISCERNIBLE)the inventors possessed. So, what can
18 help us out here?

19 MR. MILLER: Understood, Your Honor. Bear with me just a
20 second. Just trying to get the citation for you, Your Honor. Please bear with
21 me. So, yeah, I apologize Your Honor. I don't have our -- it's in our expert
22 declaration for the motion to amend. I'm just need to pull that up and I
23 apologize.

24 JUDGE CALVE: Okay. Well, rather than consume, maybe if
25 you have an associate, they can kind of take a look at that while we're on
26 other issues.

1 MR. MILLER: Sure.

2 JUDGE CHERRY: I do have some follow up questions. So,
3 you've --

4 MR. MILLER: Yeah.

5 JUDGE CHERRY: -- you pointed me to 2030 for this, the
6 CMU and let me -- just want to make sure we have the claim language.
7 Sorry, give me one second. So, the claim language says, wherein said
8 communication management unit applies heuristics to analyze data collected
9 from said one or more sensor units. A, to determine if an actual failure
10 exists, and B to predict actual or potential imminent failures based on
11 statistical analysis of the collected data. And I'm looking at 2030 and it talks
12 about temperature thresholds, but that seems to be when it transmits data to
13 the -- I mean, I, it doesn't explain at all -- it doesn't say anything about -- one
14 second, sorry, determine actual -- if an actual failure exists or predict
15 potential or imminent failures based on a statistical analysis of the collected
16 data.

17 I mean, it just seems to be, if it hits this threshold, then it does a
18 transmission, which seems to be what it as best as I can understand what
19 they're talking about in 2030. I mean, can you explain to me how that meets
20 the claim limitation?

21 MR. MILLER: Sure, your honor. So, the whole point of this
22 project was to develop a system.

23 JUDGE CHERRY: I know that, but I'm talking about what the
24 claim limitation actually talks about, which has the CMU performing certain
25 things. And why does this talking about the threshold, which seems to be
26 when it transmits data as best as I can tell, because it doesn't really explain it

1 here. I mean, they're talking, you know, when it wakes up, and why does
2 that meet the claim limitation?

3 MR. MILLER: Sure. You're referring to 2030, is that correct?

4 JUDGE CHERRY: 2031, sorry.

5 MR. MILLER: Thirty-one, okay.

6 JUDGE CHERRY: I guess, sorry, they're kind of.

7 MR. MILLER: Yeah. I think -- so, in terms of the predictive
8 algorithms, so for one thing, one thing I'll say the predictive algorithms are
9 based on the results of this data, right? So, they need to get the data off of
10 the units. In terms of the, you know, the predictive analysis that, you know,
11 again, I guess what I'll say is that, you know, that was the primary
12 opportunity they were looking to, you know, develop. And in terms of
13 applying, you know, I guess you're not asking, correct me if I'm wrong, but
14 you're not asking about where this is performed. You're asking more
15 directly about the performance of the analysis. Is that? I want to make sure
16 I got your question right. I'm sorry.

17 JUDGE CHERRY: I mean, I understand that there's some -- I
18 mean, that's separate. I mean, that whether that meets that other stuff. We'll
19 assume that this does that whatever they're doing to make the alarms does.
20 But where is it being performed here? In 2031 it looks like this just has to
21 do with when it's transmitting data as best as -- I mean, as best as I can tell.
22 I mean, it's not very clear and there's not a lot of explanation. So, I'm just
23 trying to figure out your point to that is whereas it's doing the analysis what
24 claim the last limitation of Claim 5 of the '223 patent requires that to do
25 certain -- the CMU do certain things. And you said you got kind of angry
26 with me, and you said that this was where it was. And so, I would like you

1 to tell me how this shows that.

2 MR. MILLER: Sure. So, I apologize, Your Honor, if I got
3 short, that was not my intention. What I would say to this, this is
4 specifically in reference to, let me get to the part of my notes where I was
5 talking about this. So, the CMUs provide, you know, performing analysis. I
6 mean, that's what they're doing. To answer your question, I'm not sure I was
7 necessarily thinking in terms of Claim 5. But the, again, I want to just go
8 back to the conception of the whole system here was designed to provide a,
9 you know, a system that can predict failures in these railcars. One aspect of
10 that is getting data and performing certain data analysis off of it. That's all
11 I'm suggesting is in this document. In terms of --

12 JUDGE CHERRY: And that may meet some of the claims.
13 That may meet the '673 claims. But we have to go claim by claim and try to
14 figure out what the priority dates for all these claims are. And I think you
15 have a strong case on some of these claims. For example, Claim 2, probably
16 Claim 23, but Claim 5 is different. It's a lot different than the other claims.
17 And so, I have to kind of look at, we have to look at these and try to figure
18 out where Claim 5 is. And so, that's why I'm asking these questions.

19 MR. MILLER: Sure. And I think one place I think you can
20 find it is in, let me get to this point. So, if you go to Exhibit 2050, this is
21 later on. So, this is where, this is sort of a, I guess I would call this to be
22 more indirect evidence. This is from, this is a report that was generated in
23 June of 2010, but was their final report on the initial pilot test where they,
24 you know, they discussed their -- the, you know, improving the predictive
25 algorithm. So, those predictive algorithms are what we're talking about, I
26 believe. And so that is referred to on page 5, and when it's discussing the

1 purpose of the project, and then, you know, discussing various ways to
2 improve on page 19 of that Exhibit. And that's cited on page 41 of our
3 patent of our Patent Owner response, paper 20.

4 So, if -- do you have any further questions on that, Judge
5 Cherry?

6 JUDGE CHERRY: No, no, I think, I think that. No, I think I'm
7 fine. Thank you.

8 MR. MILLER: Okay. Sure. So, I'm going to kind of go to the
9 beginning again to give a little bit of an intro into our Patent Owner's
10 position on this proceeding. Our view, as we, as, you know, I believe we
11 stated multiple times in our briefing is that the prior art positions that are
12 asserted here are primarily constructed of hindsight. They take the claimed
13 inventions and seek to, in some cases, shoehorn into references that don't
14 quite fit, in our view, LeFebvre. And then, of course, we have a reference
15 that we argue is in prior art in Armitage.

16 The Petitioner repeatedly refers to various sections of the patent to
17 justify their positions, including motivations. They support their arguments
18 with a conclusory, in our view, conclusory expert testimony that lacks
19 additional support, especially in the situations where they're reciting
20 motivations that are found in the challenged patent itself. We believe there
21 is an added burden to meet their burden of production with regard to --
22 excuse me, excuse me, their burden of persuasion with regard to
23 unpatentability if they're taking a motivation that's actually listed in our
24 patent. Furthermore, there's testimony, factual testimony, on several issues,
25 which I'll touch upon in a second, which has not been rebutted at all. And
26 that's evidence we have presented that's uncontroverted at this stage.

1 And so, Petitioner has not met its burden to show
2 unpatentability. And I'll go into a few issues that I want to focus on to
3 illustrate that. First off is the housing. There was a lot of discussion earlier
4 about the housing. So, I just want to note what our position is in terms of
5 supporting our construction of an enclosure. The specification repeatedly
6 refers to a housing in terms that make it clear that it is an enclosure. It's
7 something you put something into. The sensors are contained and deployed
8 in a self-contained housing. It's resistant to environmental damage and
9 waterproof.

10 There's several recitations about that it can assist in encapsulating
11 and environmentally sealed components. I want to specifically mention the
12 portion that both sides are pointing to in terms of the housing. And that's the
13 section on column 15 that was discussed earlier today. We have a Patent
14 Owner demonstrative Exhibit 3 that in our view kind of illustrates the main
15 issue here. There was a mention about the four built into the railcar. One of
16 the facts that we have from one of Patent Owner's witnesses is that the whole
17 idea of these smart pads was to use a pre-existing part of the car to place
18 these sensors into.

19 And what I'm referring to is the declaration of William LeFebvre at
20 Exhibit 2008. So, the pad of the '218 patent, which is the LeFebvre
21 reference as the publication, refers to the specific part component of the
22 railcar. This is adapter pads were part of the railcar before LeFebvre had his
23 invention of the smart pad. So, this is quite clearly an example of being built
24 into the railcar. It's also particular -- this particular configuration it can only
25 go in one place. It has to go on top of the bearing adapter on top of the truck
26 underneath the railcar. The only way you can put it in is by dismantling the

1 railcar. The only way you can take it out is by dismantling the railcar. It is
2 built into the railcar itself, which is exactly what's described in this section.
3 Now, you know, my colleague mentioned about, you know, it would be odd
4 to distinguish the prior art this way.

5 What I would say to that, one, I'm not sure his particular practice is
6 necessarily relevant to whether these claims are unpatentable, but in terms of
7 what is disclosed here, this is a disclosure of the '223 and '673 patents. So, it
8 is the inventors recognizing that you could adapt the adapter pad in a form
9 that could be used in this with this invention. It's not to say that the adapter
10 pad is an example of the invention. But it could be adapted to do so. I'm
11 sorry?

12 JUDGE CHERRY: It says it's an alternative embodiment of the
13 invention.

14 MR. MILLER: Yeah, that it could be adapted to do so. And
15 again, that's a recognition by the inventors.

16 JUDGE CALVE: Well, Mr. Miller, this is Judge Calve. What
17 is your position on Petitioner's contentions that that pad meets the limitations
18 that you have recited in the claim for a housing? The components, the
19 electric circuitry and whatnot are contained within this element.

20 MR. MILLER: Sure.

21 JUDGE CALVE: Does the claim say the housing can't be part
22 of the railcar.

23 MR. MILLER: Well, what that section in column 15 does say
24 is that it maybe has an alternative housing or built into the railcar. So, it
25 does, that does distinguish being built into the railcar from being a housing.
26 Nonetheless, the adapter pad is again, a pre-existing component of the car.

1 It's also in a load-bearing position. This is bearing the full weight of the
2 railcar. And in fact, there's evidence that one of the issues that was sought to
3 be addressed by the '223 patent was that the pads would experience these
4 extreme loads that were excessive enough to actually cause the sensors and
5 wiring to be damaged.

6 JUDGE CHERRY: Where does it say that?

7 MR. MILLER: That is Exhibit 2008, paragraph 7, and I can get
8 you a citation from our response if need be. So, you know, that, in our view,
9 explains why the inventors did not view, again, an un rebutted testimony, did
10 not view the smart pad as being a housing within the meaning of the '223
11 patent. So, again, the only evidence that we can tell, anyway, that Petitioner
12 provides is this portion of the '223 patent, which, in our view, is conclusory
13 hindsight. And as was mentioned before, one of the features that is
14 described in the '223 patent is that these nodes could be placed at various
15 locations around the railcar.

16 That is one of the reasons why the protective housing became
17 necessary, is that it was not necessarily clear where you would put it, but
18 wherever you are going to put it, it was going to be on a railcar. It was
19 going to be in a fairly harsh environment. Further, LeFebvre does not
20 disclose circuitry within the housing. The, you know, the Figure 3 is a
21 schematic figure, but it does show a distinction between the two portions.
22 More accurately, you can see on Figure 4, this is of LeFebvre, excuse me,
23 Exhibit 1005, that the pad itself is identified as number 16 and the additional
24 portion is 17, which is entirely separate from the pad. It's not in the pad.

25 So, at the very least what you have is the sensors inside the pad
26 and the rest of the circuitry not inside the pad. And so, then there's a

1 question of whether it's inside the housing. And in our view, there's only
2 one housing that's in the claim and that housing, at least in terms of, even if
3 you were to assume and to agree that the adapter pad forms a housing, not
4 all the components are within it. They're within another component, another
5 aspect of it.

6 Finally, I want to talk about, well, not finally, but next, I would
7 like to talk about severity level. This is another bit of contention, I believe,
8 between the parties.

9 JUDGE CALVE: Mr. Miller, before we jump off to this, let me
10 ask you, this is the '673 patent, and I'm trying to get my understanding of
11 this. Yeah, you can put that slide back up, please, if you don't mind, the one
12 that compares LeFebvre's instrumented pad.

13 MR. MILLER: I wasn't putting any slides up, but I can
14 certainly do that if you --

15 JUDGE CALVE: Oh, okay. That's okay. You didn't put it up.
16 I got pulled it up. Okay. Without getting overly technical, a skilled artisan
17 might think that a railcar has nothing to do with the wheel carriage. Right?
18 And, in other words, whatever LeFebvre does here, that's a built-in 16 and
19 17. In Figure 4 of LeFebvre it's built into the wheel carriage, it's built into
20 the adapter pad. That's not what your patent is talking about. It's talking
21 about being built into the railcar, and at least in the '673, which I know
22 doesn't have this issue, but it talks about the railcar being something
23 different than this carriage.

24 So, there's confusion here at all levels, with this high-level
25 disclosure and lack of detail. So, I think that just muddies the waters.
26 Figure 4 of the '673 shows the mote attached to something called a railcar,

1 and it doesn't look anything like the wheel carriage with the bearing adapter.
2 And that makes sense because skilled artisans would understand that railcars
3 can be attached to all sorts of manners of carriages. They vary from country
4 to country, line to line, so that makes perfect sense. You want to put
5 something on a railcar, that's different than putting something on the carriage
6 you choose to use with the railcar. That's all. And I just want to -- if you
7 have any thoughts on that.

8 MR. MILLER: Sure. I'm not 100 percent sure there's really a
9 controversy between the parties and I get my colleague might mention this, I
10 don't know, with regard to what is part of the railcar. So, I'm not quite sure
11 what the issue is, but in terms of --

12 JUDGE CALVE: Mr. Miller, let me interrupt again. You've
13 essentially created that issue, or not created. We have this issue because
14 you're pointing us to your slide number 3, which says you're implying that
15 LeFebvre is built into the railcar. And you're saying that's not necessarily
16 what that says. It says you can have modes in a housing or you can have
17 modes built into a railcar. It does not then say that LeFebvre's adapter pad is
18 built into the railcar. It doesn't say it's a housing. It might be either. It
19 might be both, it might be neither. We were asking, to me one might read,
20 one or more modes is housed in a housing built into a railcar. And then you
21 talk about an adapter pad that could be an example of an alternative housing.
22 And if it is, then that addresses directly the claim language in the '223.

23 MR. MILLER: Right. Right.

24 JUDGE CALVE: It's a built-in to a railcar. I'm suggesting
25 when you have this Figure 5 of LeFebvre on your slide 3, I'm saying maybe
26 you're mixing apples and oranges. LeFebvre isn't built into a railcar. When

1 they're talking about built into the railcar they're talking about sensors with
2 probes to go into a tank that holds fluids. That's another embodiment,
3 which one is built into the railcar? That's actually built into the tank, the
4 railcar. You follow what I'm saying? There's confusion here.

5 MR. MILLER: I do. I'm not sure that was a confusion that we
6 had been attuned to before. So, you'll bear with me. One thing I will state is
7 that that portion of column 15 does say that motes can be built into the form
8 of an adapter pad. So, you know, again, I think and perhaps there's --

9 JUDGE CALVE: Now the \$60,000 question, a mote could be
10 built into an adapter pad. Is the adapter pad then the alternative housing, or
11 is it something built into the railcar? (INDISCERNIBLE).

12 MR. MILLER: Well, I would argue it's part of the railcar. I
13 mean, I think the railcar, the intention behind what is built into the railcar,
14 the scope of what a railcar is includes the carriages. I mean, it's not going to,
15 unless you're putting it on a truck, in which case, none of these devices are
16 going to be relevant, you know.

17 JUDGE CHERRY: I mean, I guess like, then, then the motes
18 are built into the railcar. I mean the, even the motes that you're pointing to
19 and they're screwed onto the railcar. Right?

20 MR. MILLER: They're mounted on the railcar. Yes.

21 JUDGE CHERRY: I mean, it seems like exactly like what
22 LeFebvre is talking about with the pads. They're mounted on the railcar.

23 MR. MILLER: Yeah, I -- just to reiterate, I mean, the adapter
24 pad was a part of the railcar that existed prior. So, that was already on the
25 railcar. That wasn't something that was added to it. What was added in the
26 smart pad devices, what was added was the sensors into the adapter pad. So,

1 anyway, that's the distinction that we have. It's the distinction that the
2 inventors have. That particular testimony is unrebutted.

3 I would like to.

4 JUDGE CHERRY: Well, the thing that, I mean, looking at Mr.
5 LeFebvre's testimony, though I mean, he claims that there's all these
6 problems with it, but, you know, the patent doesn't indicate that. It just says
7 that you could, I mean, it seems to indicate that you could put them into
8 pads, even though he claims they're inferior. I mean, I guess I'm not sure
9 how much weight to give to that testimony, given that the patent doesn't
10 mention those problems and it seems to, you know, say that they're fine.

11 MR. MILLER: Sure. I mean, obviously, the weight you assign
12 to it is the weight you assign to it. That's part of your prerogative as the
13 finder of fact. But, you know, in terms of what Mr. LeFebvre considered to
14 be a housing, I think that part, that's not dependent on the problems that he
15 experienced with the adapter pads. All that was provided for was to explain
16 the mode of development leading to what is described in the '223 patent.

17 I do want to touch really briefly. I know I'm about ready to run
18 out of time. I want to touch really briefly on severity level. One thing I
19 want to note is that in our view LeFebvre is a thresholding reference. It only
20 has a single threshold. You're good, pass the threshold, you're bad. That is
21 exactly what was in the prior art that the applicant of the Patent Owner
22 argued against during prosecution and added the severity level limitation to
23 overcome that. And that is -- that's found in Exhibit 1002 at page 425. The
24 Patent Owner distinguished claims from a binary system and a basic
25 threshold analysis of Searle and added the severity limitation to get over
26 that.

1 And that's what influenced the examiner to allow the claims. That
2 by itself, we think, explains that the severity level is not a simple threshold
3 and therefore must be in line with the rest of the specification discussing
4 various alarm thresholds, because what are these severity levels other than a
5 series of thresholds, not just a single one? Alarm levels, tiered alarm levels,
6 and then the discussion of the level one alerts and the leveled alarms in
7 column 13.

8 JUDGE CALVE: So, where are these series of thresholds?
9 You said that severity levels in your claim construction was a plurality of
10 known values. Where are known values anywhere in the '673 patent?

11 MR. MILLER: So, I would point you to the description of the
12 level of alarms and responses in columns 13, starting around line 30 through
13 column 15, I'm sorry, no, starting column 14, line it looks like 58. These are
14 a series of temperature thresholds. So, the example of temperature is
15 provided. When you're talking about, I'm not sure if you're referring to the
16 numeric values, but numeric values are disclosed through the heuristics that
17 are mentioned with regard to the accelerometers.

18 JUDGE CALVE: Okay. Well, let me, let's look at the stage
19 one bearing alarm at column 13, line 32 to 36. Where's the threshold or any
20 value disclosed for stage one alarm? I don't even know what that -- what
21 triggers that alarm if I'm trying to figure that out.

22 MR. MILLER: It's well, it's a bearing temp alarm. So, there's
23 going to be a temperature that triggers that alarm. And then the axle
24 differential alarm, this is a different way of determining whether that
25 whether you meet the threshold, but there's still a threshold.

26 JUDGE CALVE: What's the threshold? What's the threshold

1 in stage two?

2 MR. MILLER: Predetermined amount hotter than its axle
3 mate. That's a threshold. Whatever that predetermined amount is. And
4 again, that might, you know, that is something that, you know, an engineer
5 who's going to be, you know, installing and applying this system will know
6 their railcars. That might differ between different railcars, between different
7 environments that the railcars, you know, if you're running a train in
8 northern Canada, you're going to have a different temperature, set different
9 temperature thresholds than if you're running it in Australia.

10 JUDGE CALVE: Well, sure, depending on how you set the
11 predetermined amounts, a stage 3, which you're calling an ambient, can be a
12 more serious alarm than an axle differential depending on the difference.
13 But that isn't the real issue. You're trying to talk about alarm levels in
14 regards to a temperature. Aren't you, aren't these really just proxies for
15 increasing levels of bearing temperature? And that's not disclosed. That
16 was conceived off, but they withheld that information from the disclosure.

17 And let me ask you, this is in Mr. Martin's declaration, which is
18 2013. This is in the '539. Paragraph 14 and 15 describes stages with alarm
19 levels tied to temperature values. And I understand that, that makes perfect
20 sense. Paragraph 14, stage 1 is 93 degrees centigrade. Stage 2 is 124
21 degrees centigrade. Stage 3 is 136 degrees centigrade. Stage 4 is 160
22 degrees centigrade. Those are increasing levels that shows increasing levels
23 of seriousness presumably. That's not what we're seeing that was disclosed
24 in the patent here.

25 MR. MILLER: Well, again, actually, this is disclosed. It's just
26 the levels were the actual temperature values weren't there because that, you

1 know, we're certainly not going to limit it to individual temperature values.
2 Because again, those values are going to change depending on where you're
3 operating the train. But in terms of this, this is, it's a, the axle differential
4 alarm is triggering that stage 2 alarm. The above ambient alarm is what's
5 triggering the stage 3 alarm. That's exactly what's disclosed in the patent.

6 JUDGE CALVE: But it's triggering it on a combination of
7 different values, right? The stage 2 triggers an alarm when the temperature
8 of bearing A exceeds the unknown temperature of bearing B by some third
9 value, a threshold, right? So, you got a lot of different values just in stage 2.
10 You got the temperature of the bearing itself that triggers the alarm, but that
11 temperature is of no import. It's the temperature of the axle mate and some
12 unknown threshold that determine whether you issue the alarm. And the
13 same thing of ambient. And interestingly, even though they're two different
14 stages, the actions taken are virtually identical. So, that tends to indicate that
15 they're not too different in seriousness if at all.

16 MR. MILLER: Well, looking at the next page, there are
17 differences in the actions that are taken. For example, you have a slower
18 speed that you can proceed at for stage 3. So, there are differences. I
19 understand what you're saying that there might be, you know, somewhat
20 subtle or small differences. But the point is, is that each one of those stages
21 represents a level of severity at which particular actions are prescribed. And
22 so, that is -- and that's what's described in the patent as well.

23 JUDGE CALVE: Okay. Thank you. I understand your
24 position.

25 MR. MILLER: I'm sorry, Your Honor, how much time do I
26 have left?

1 JUDGE CALVE: Well, you are through your 50 minutes.

2 MR. MILLER: I'm through my -- okay. Then I will stop here,
3 and I'll speak to you for my sur-rebuttal.

4 JUDGE CALVE: Okay. Thank you. Mr. Rakestraw, I think
5 you reserved, what was it, 15 minutes?

6 MR. RAKESTRAW: Yes, Your Honor, that's right.

7 JUDGE CALVE: All right, I think we're when you're ready,
8 please feel free to begin.

9 MR. RAKESTRAW: Oh, okay. Sorry. My screen blanked for
10 just a second. Okay. I'm ready when you are, Your Honor. Just three brief
11 points on rebuttal. If we can go to slide 13. So, just wanted to briefly touch
12 on housing again. There are a lot of arguments that Patent Owner is making
13 either explicitly or implicitly regarding the housing that aren't reflected in
14 either the specification or the claim language. There's nothing in the claims
15 that limits the material used to construct the housing.

16 There's nothing that requires that components are removable.
17 Nothing that requires that the housing is hollow or that it's a single open
18 continuous space. For example, it can be filled with a with a potting
19 material which would make everything inside non-removable and would fill
20 the entire interior. There's nothing that requires it to be mounted in a
21 particular location on the railcar. There's also nothing that says the housing
22 can't be load bearing or be in the load path. So, all these arguments are sort
23 of not reflected and they're not tied to the actual language of the claims at
24 issue.

25 My second item I wanted to cover on rebuttal relates to written
26 description. We go to slide 69. And one more slide, slide 70. So, this is the

1 disclosure of the Figure 3 that that my colleague was discussing as
2 disclosing an adapter mounted to the sidewall. One thing he said is that the
3 sidewall is the only disclosed location. That's actually not true. LeFebvre
4 discloses a sensor mounted on the top surface of the bearing adapter and it's
5 expressly incorporated by reference. So, it is part of the specification.

6 And so, collectively when you consider the express incorporation
7 by reference, it discloses at least two locations on the sidewall or on the top.
8 And this figure is expressly described as a temperature sensing mote that
9 includes a temperature sensor. There's nothing anywhere in the specification
10 that indicates that this sensor can have different types of sensors other than
11 temperature.

12 The last point I wanted to touch on rebuttal is conception. And
13 if we go to slide 50, Patent Owner had a burden of production that required
14 it to clearly show where each and every limitation of the challenged claims
15 was conceived of prior to Armitage. In general, arguments should be made
16 in the briefing, and because they weren't here, we're sort of struggling to
17 kind of piece together, well, on the fly, where can you find this limitation in
18 all these voluminous exhibits? Where can you find that that limitation? And
19 the Board is doing an admirable job of trying to piece that together. But that
20 was Patent Owner's burden. It should have showed that in its briefing. The
21 Board is not required to play archeologist with the record and try to
22 reconstruct this on its own.

23 JUDGE CALVE: Mr. Rakestraw, that's a great point. How
24 should we understand the level of detail that's provided by Patent Owner in
25 the sur-reply? And we understand your position. They came after you had
26 the opportunity to respond. But is that evidence? Is that a format that meets

1 the case law requirement or not?

2 MR. RAKESTRAW: You're talking about the tables that they
3 presented in the sur-reply?

4 JUDGE CALVE: The table, right, because if that's the format
5 then I guess the issue might be should that have been in the original paper or
6 not. But is that adequate or is that itself deficient? In other words, if that's
7 adequate, then perhaps that's evidence that the original paper isn't if that's the
8 gold standard of the minimum standard. But if it isn't, then I guess you're
9 saying they've never met the standard. That's what we'd like -- I'd like to
10 know. Is a table sufficient?

11 MR. RAKESTRAW: Yes, Judge, I would say the tables in the
12 sur-reply as a matter of form are adequate. I'm not going to say that
13 substantively they address every limitation, but in terms of the way that they
14 set out the evidence and clearly map, here are specific portions of specific
15 exhibits that are alleged to provide support for specific claims. Yes, I would
16 say that format is sufficient. I'm also not saying that it needed to be a table,
17 right? It could have been as simple as a textual sentence. You know,
18 Exhibit 2150 at page 10 discloses a system meets every limitation of Claim
19 5. If it were that simple, they could have simply said that. That wasn't
20 stated anywhere in the Patent Owner response. There's nothing like that.

21 And I kind of thought of an analogy that I think might help
22 illustrate this. It's like putting together a puzzle. But the pieces you need are
23 mixed in with hundreds and hundreds of other unrelated pieces and you have
24 to dig through all the pieces to find the ones that you need for your puzzle,
25 right? And that's just for one claim. There are 60 claims across these two
26 proceedings, and each of them is going to need different pieces selected

1 from all of this evidence. It was Patent Owner's obligation to connect those
2 dots for us in order to meet its burden of production and they just didn't do
3 it.

4 With respect to the they mentioned that there was a table attached
5 to an expert declaration that wasn't cited in the briefing. It wasn't discussed
6 in the briefing. It's black letter law that arguments not made in the briefing
7 are not presented and the Court shouldn't consider them.

8 And finally, yes, it is our position that these tables that were
9 presented for the first time in the sur-reply, those are late filed. We haven't
10 had a -- an opportunity to respond to them in briefing and the Board should
11 not consider them because they're late filed and untimely evidence. Unless
12 there are any more questions, I will conclude my argument.

13 JUDGE WOODS: Mr. Rakestraw, if you could please respond
14 to Mr. Miller's argument regarding LeFebvre's failure to disclose severity
15 levels and maybe address the LeFebvre's paragraph 58.

16 MR. RAKESTRAW: Certainly, Your Honor. The first thing
17 I'd actually like to point out about that is that this is a new argument that was
18 raised for the first time in sur-reply. So, in the '673 patent in paper 33 at
19 page 5, that's their sur-reply, they attempted to draw this distinction between
20 a range of temperatures and a temperature threshold. That argument was not
21 previously made in any of the briefing. It's not in the Patent Owner
22 response. You can look at paper 21, pages 16 and 17, where they discussed
23 Claim 10. You won't see any hint to this argument there. So, that's also a
24 new argument that we haven't yet had a chance to address. Judge, does that
25 answer your question or was there something more specific that you wanted
26 me to respond to?

1 JUDGE WOODS: I would like to know if your Petitioner's
2 position is that LeFebvre's paragraph 58 discloses varying severity levels at
3 bearing temperature.

4 MR. RAKESTRAW: Let's go to slide 37. Yes, Your Honor.
5 So, as you can see where we've highlighted it here, LeFebvre in this
6 paragraph discloses that the well-being of a roller bearing can be inferred
7 using either trends or alarm levels. And it's really the term alarm levels
8 that's key. That indicates that there are different levels of severity, right, that
9 can be represented by different levels of alarms. And so, yes, it's our
10 position that LeFebvre expressly discloses it here in this paragraph.

11 JUDGE WOODS: All right. Thank you.

12 MR. RAKESTRAW: Thank you, Your Honors.

13 JUDGE CALVE: Thank you. I think then you're ceding to Mr.
14 Miller, I believe, at this time?

15 MR. MILLER: Yes, Your Honor, I believe I can.

16 MR. RAKESTRAW: Yes, Judge.

17 MR. MILLER: Oh, sorry.

18 MR. RAKESTRAW: Yes, Judge. I'm ceding the remainder of
19 my time to Mr. Miller.

20 JUDGE CALVE: Okay. Thank you. All right. Take her
21 away, Mr. Miller.

22 MR. MILLER: Apologies for that. I'm sorry. I didn't mean to
23 speak over Mr. Rakestraw. So, thank you, Your Honor. So briefly, just
24 really briefly about the housing issue. I just want to make one note that,
25 when, you know, my colleague mentioned all these disclosures that aren't
26 represented in the claim, I was referring to those as support for our

1 construction. The construction of a claim term is determined in part through
2 an analysis of what's -- of how that particular term is used in the disclosure.
3 That's all I was attempting to do with that.

4 With regard to Figure 3, one thing I want to note again, is that
5 Figure 3 itself does not specifically disclose that it's a temperature sensor.
6 Figure 3 is just a sensor mote attached to the sidewall. There is written
7 description discussing that inside that temperature sensor, temperature is a
8 temperature sensor. But Figure 3 is independent disclosure. And mote 10 is
9 explicitly described in that very same paragraph, I believe, as including,
10 among other things, an accelerometer.

11 With regard to our burden, again, I want to reiterate the table
12 that we -- that is in our sur-reply was meant to be --

13 JUDGE CALVE: I apologize. Do we have any expert
14 declaration or evidence that says putting an accelerometer on the sidewall,
15 the bearing is a good place to do it, or at least an acceptable place?

16 MR. MILLER: Yes, Your Honor. I believe we have that in our
17 expert.

18 JUDGE CALVE: Could you point us to that, please?

19 MR. MILLER: Sure. Apologies.

20 JUDGE CALVE: And while you're looking at this, there are
21 alternative ways to prosecute patent applications. You alluded to the fact
22 that you didn't want to put too much detail in your specification because you
23 didn't want to limit the claims. Those are unrelated issues. Many
24 technologies, mechanical, electrical, beyond chemical and unpredictable
25 technologies, use dozens and dozens and dozens of embodiments, and they
26 still have claims that are every bit as generic and vague and

1 incomprehensible as your claims. But there are lots of embodiments that
2 actually build the scope. And then when issues come up, you can go into the
3 specification and mine it and figure out what you want to do.

4 You have the latter approach, which we see not infrequently in
5 IPRs, and very broad claims with even broader disclosure if that's possible in
6 some cases on some issues. So, we're just trying to sort out the metes and
7 the bounds and the parameters. Construing these claims is an exhausting
8 experience. Every single word has to go back to the specification, even
9 heuristic because it has really no meaning, or it's a heuristic as a rule. Well,
10 now you're defining one term with another term that has no fixed meaning.
11 It's like a synonym, that's not a definition. So, if you can find that, good, and
12 if not, you're authorized to just file a supplemental paper in the '539 just with
13 that citation, please. That'd be good.

14 MR. MILLER: Sure, Your Honor. You're referring to the
15 sidewall?

16 JUDGE CALVE: I just wanted some evidence that seems to
17 me as a novice that putting an accelerometer on the sidewall would be a
18 good thing, but I'm an Administrative Patent Judge, I'm not an expert in this
19 technology.

20 MR. MILLER: Okay. Yes. We'll take you up on that. One
21 thing I will say is at the very least, in Exhibit 2164, which is our expert
22 declaration submitted in reply on the RMTA on paragraph 13 discusses that.
23 But I will do so, Your Honor. So, one thing I want to touch on is -- no. So,
24 with regard to all of the grounds, including the grounds in the petition and
25 the grounds that are submitted against the substitute claims, it is our view
26 that the Petitioner has not met its burden. There is, at least in reference to

1 the '223, and, and to some extent, the '673, there's un rebutted additional
2 testimony that is currently uncontroverted in the record.

3 And to the extent the Petitioner is relying on the institution
4 decision, I'll just note that the burden is entirely different in terms of whether
5 you should institute a trial on claims and whether the Board should find
6 claims unpatentable. And so, relying on, merely, on the institution decision
7 is not sufficient to meet its burden to show that the claims are unpatentable
8 under the burden of proof that they are required to meet.

9 Unless there are any other questions, I thank you for your time
10 and we will see you this afternoon.

11 JUDGE CALVE: Okay. Yeah, let me thank everyone. We'll
12 meet again but thank you. The briefing was excellent. We understand
13 you're under page constraints. There's enormously complex issues when
14 you go to read motions, demand the page limits. Yeah. So, thank you. You
15 did an excellent job, and you both have done an extremely good job of
16 focusing the issues that you need us to decide. So, we appreciate that. It's
17 very helpful.

18 Yeah. Thank you very much. I guess we'll take lunch or
19 whatever everyone prefers to do. Okay. Thank you very much.

20 MR. MILLER: Thank you, Your Honor.

21 MR. RAKESTRAW: Thank you, Judge.

22 (Whereupon the above-entitled matter went off the record at
23 12:00 p.m.)

IPR2023-00538 (Patent 9,365,223 B2)

IPR2023-00539 (Patent 9,981,673 B2)

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