

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

IQAR, INC.,
Patent Owner.

IPR2024-00543
Patent 10,882,399 B2

Record of Oral Hearing
Held: April 29, 2025

Before JASON W. MELVIN, SEAN P. O'HANLON, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

IPR2024-00543
Patent 10,882,399 B2

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The above-entitled matter came on for hearing on Tuesday, April 29, 2025, commencing at 1:00 p.m., via video conference.

P R O C E E D I N G S

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JUDGE O'HANLON: Good afternoon, everyone. I am Judge O'Hanlon, and I am joined by Judge Melvin and Judge Dougal. This is a hearing in case number IPR 2024-00543, *Tesla, Incorporated versus iQar, Incorporated*. This concerns U.S. Patent Number 10,882,399.

I'd like to start by having counsel for the parties introduce yourselves for the record, starting with Petitioner, please.

MR. CHOWDHURY: Good afternoon, Your Honors. This is Ryan Chowdhury. I represent Petitioner Tesla, and joining me today is Karl Renner and Roberto Devoto from Fish & Richardson, and Ashraf Fawzy from Tesla.

JUDGE O'HANLON: Thank you, Mr. Chowdhury.

And who is appearing for Patent Owner, please?

MR. HERMAN: Good afternoon, Your Honors. This is Patrick Herman from Orrick, Herrington & Sutcliffe, here on behalf of Patent Owners.

JUDGE O'HANLON: Thank you, Mr. Herman.

I have a few housekeeping items -- Did someone else want to make an appearance?

(No audible response.)

JUDGE O'HANLON: I have a few housekeeping items to mention before we begin. First of all, our primary goal is to allow you to make arguments and to be heard. If at any time during the proceeding you encounter technical or other difficulties that undermine your ability to do so,

1 please let us know immediately by contacting the personnel who provided
2 you with the connection information for today's hearing.

3 Recording of any PTAB hearing is prohibited. The court reporter will
4 provide a transcript of the hearing that will become a part of the record in
5 this proceeding. To ensure that the transcript is clear, we ask you to ensure
6 your microphone is positioned close to you when speaking, and when not
7 speaking please mute your microphone.

8 When referencing your demonstrative papers or exhibits, please state
9 the slide or document number so that we can follow along more easily and
10 for the clarity of the record.

11 Each side will have 60 minutes of total time to argue. Petitioner will
12 argue first, followed by Patent Owner, and each side may reserve time for
13 rebuttal. I will be using the timer today during the hearing. I want to ensure
14 that you can – that the parties can actually see the timer.

15 Mr. Chowdhury, can you see the timer?

16 MR. CHOWDHURY: I can, Your Honors.

17 JUDGE O'HANLON: Thank you.

18 And Mr. Herman, you can see it as well?

19 MR. HERMAN: Yes, Your Honors.

20 JUDGE O'HANLON: Thank you.

21 Please remember that your arguments should be limited to only those
22 arguments previously presented in your briefs. Please make it clear which
23 challenges and claims you are addressing at all times. And we ask that the
24 parties hold any objections regarding the other -- opposing party's arguments
25 until it is your time at the podium.

1 Finally, please note that there is a public line for this hearing. I don't
2 believe this will be an issue as there is no protective order in this case, but I
3 wanted to make you aware that the public may be listening in and viewing
4 our proceedings today.

5 Do any of the parties have any questions before we begin?

6 MR. CHOWDHURY: We don't, Your Honors. Thank you.

7 MR. HERMAN: No, Your Honor. Thank you.

8 JUDGE O'HANLON: Thank you, both. And with that, I invite
9 Mr. Chowdhury to begin.

10 Mr. Chowdhury, would you like to reserve any time for rebuttal?

11 MR. CHOWDHURY: We'd like to reserve 20 minutes for rebuttal,
12 Your Honors.

13 JUDGE O'HANLON: Let me set the clock for 40 minutes. Okay.
14 The clock is set. You may begin when you are ready.

15 MR. CHOWDHURY: Thank you, Your Honors. Good afternoon,
16 and may it please the Board, my name is Ryan Chowdhury, and I represent
17 Petitioner Tesla in this inter partes proceeding regarding the '399 patent.

18 Your Honors, this case is fundamentally about the proper claim scope
19 under the plain and ordinary meaning. Petitioner's position is
20 straightforward. The claims mean what they say. And what they do not say
21 is how any of the recited steps are temporally limited. Read this way, the
22 claims encompass several of the power application techniques described in
23 the specification. This includes techniques that optimize power for a current
24 segment, where a vehicle is right now, or future segments. There's simply
25 no language limiting the claims to a subset of these disclosed techniques.

1 Slide 2, please. Our slides address four issues, but I plan to discuss
2 only issues one to three during this presentation.

3 As for issue four, Patent Owner raises concerns about when
4 communication with a remote database occurs. But as shown in the last
5 sentence of page 83 of the petition, Newstrom discloses that a vehicle's
6 database manager 22 can load new portions of database 20 as the vehicle's
7 location changes. This means that communication occurs not only during
8 initialization but may also occur during vehicle operation. This thereby
9 satisfies claim 8, even under Patent Owner's overly narrow reading.

10 Stepping back, the database information in Newstrom provides lane
11 attributes used to determine operational status, such as lane departure, by
12 comparing real-time vehicle data to database-stored lane information. We
13 respectfully leave the full discussion to our briefing.

14 Slide 7, please. The '399 patent broadly relates to controlling power
15 applied to a vehicle engine. While fuel efficiency is discussed, the
16 specification makes clear that optimization is not limited solely to fuel
17 savings. In the last sentence near the bottom of this slide, power can
18 alternatively be optimized based on speed or travel time. The patent
19 therefore contemplates a flexible approach to power management.

20 Slide 8, please. The core steps of Representative Claim 1 are
21 Limitations 1.a and 1.c. While we're here, notice the absence of specific
22 types of language within these two limitations. The claim does not say
23 future segment. It also does not mandate prospective application of
24 calculated electric power. Patent Owner argued both of these interpretations
25 as early as in its preliminary response. And then, recognizing and
26 addressing these points, Your Honors noted, on page 16 of the Institution

1 Decision, that Claim 1 does not specify how or when electric power
2 calculations are performed. Patent Owner's arguments today we expect will
3 largely repeat these same points made in its preliminary reply and already
4 addressed in the Institution Decision.

5 Slide 9, please. The specification also confirms Patent Owner's
6 interpretation is too narrow. The key to understanding how is a central
7 technical concept relating to the calculation of an efficient speed. This
8 efficient speed is not a single calculation. Rather, it is a composite which
9 blends together two distinct values. As shown here, it uses a probable
10 optimal speed, derived from historical data, on the left, and an optimized
11 speed, based on real-time physics simulations, on the right. These two speed
12 values are then weighted together in calculating the final efficient speed
13 value.

14 What Patent Owner seems to have overlooked is that the probable
15 optimal speed is determined for a current segment. And because the
16 efficient speed is calculated based on the probable optimal speed, it too may
17 be based on the current segment. This leads to two observations. First, the
18 calculation of electric power based on the efficient speed involves a current
19 segment. And second, the electric power is applied to a vehicle as it travels
20 along the current segment. These observations are expressly supported by
21 the specification, for instance, in Figures 5 and 6, as we'll soon see.

22 Slide 10, please. Figure 5 on the left shows a process for determining
23 a probable optimal speed using historical information. The red box on the
24 left highlights steps included within this process. At 507, there's a check to
25 see if the car has moved into a new segment. If yes, at 509, the new segment
26 is set as the current segment. At 511, historic speed data is pulled using the

1 current segment. At 513, a value for the probable optimal speed is
2 determined using the historical speed data.

3 Please now turn to the corresponding figure description on the
4 bottom -- on the right side of this slide. In the bottom highlight, notice that
5 the Figure 5 process yields a speed that is most likely the best, for example,
6 most efficient speed for travel for the current segment. So, based on Figure
7 5, the specification contemplates using the current segment as a basis for
8 optimization by determining a probable optimal speed. In the next sentence,
9 the specification states this process can iteratively repeat for the next
10 location measurement as the vehicle continues. This matches Figure 5 on
11 the left.

12 Notice how each of the two subprocesses shown within the red box
13 ultimately revert back to 501. Thus, the Figure 5 process clearly uses
14 current segment information to determine a probable optimal speed. And
15 this is process is repeated multiple times during vehicle travel. Critically,
16 the '399 patent's disclosure of the probable optimal speed is largely focused
17 on the Figure 5 process.

18 And as discussed, this process involves current segment information.
19 That's because the execution of specific steps, such as 509 to 513, are
20 triggered after the vehicle enters a new segment. This makes the vehicle's
21 current segment not only relevant for speed calculation but also power
22 application.

23 Slide 11, please. The second concept is an optimized speed, which
24 involves a physics-based simulation. This may be accomplished by
25 identifying speeds that minimize a power requirement associated with
26 vehicle travel. Then, using these calculated power requirements, a

1 determination may be made as to the speed at which energy requirement is
2 the lowest.

3 Slide 12, please. The probable optimal speed and the optimized speed
4 are integrated using the architecture shown in Figure 6 on the left. The red
5 box highlights the most efficient speed logic 615 and its three constituent
6 elements. These elements include a statistical destination logic 609, on the
7 left, which communicates with a statistical route analysis logic 611, and
8 simulated energy requirement logic 613, each of which are on the right.

9 Near the bottom right of this slide, the simulated energy requirement
10 logic, 613 in Figure 6, determines a calculated optimized speed. And the
11 statistical route analysis logic, 611 in Figure 6, determines the probable
12 optimal speed. In the last sentence of this paragraph, the most efficient
13 speed is then determined as a composite of these two values.

14 To summarize, Figures 5 and 6 confirm that application of calculated
15 power that is determined using a probable optimal speed occurs as the
16 vehicle is traveling along the current segment. This is because the probable
17 optimal speed, which is calculated separately for each newly entered
18 segment, is a prerequisite to determining the efficient speed. Thus, the
19 Figure 5 ordering shows that efficient speed and any corresponding power
20 calculated from it is applied on a segment-by-segment basis as the vehicle
21 traverses each segment, not future ones.

22 Again, this refutes Patent Owner's interpretation. If the claimed
23 segment is limited to future segments, this necessarily excludes Figures 5
24 and 6, key embodiments of the '399 patent. They are key because the
25 probable optimal speed is primarily described in relation to the Figure 5
26 process. And yet, Patent Owner's interpretation would necessarily weed out

1 this process entirely. But Patent Owner hasn't demonstrated a clear
2 disclaimer, disavowal, or redefinition to justify such exclusion.

3 I'll now turn to Hongo, the key primary reference implicated in this
4 proceeding unless Your Honors have any questions.

5 Hearing none, please turn to slide 16. Hongo is a certified English
6 translation of a Japanese patent publication. Its disclosure focuses on an
7 adaptive cruise control system utilizing what the reference calls a target
8 vehicle speed determining device 100. The red box near the right shows that
9 device 100 includes various elements, including a computer that
10 communicates with an adaptive cruise control system 200, shown near the
11 bottom with a blue arrow.

12 Fundamentally, Hongo's adaptive cruise control technique involves
13 tracking the current position of the vehicle, using that position to identify
14 historical information stored in a database, and then controlling the vehicle
15 speed as it is traveling. The adaptive nature distinguishes Hongo's technique
16 from a traditional fixed-speed cruise control process. Notice also that this is
17 remarkably similar to the Figure 5 technique we just discussed.

18 Slide 17, please. On the right is Hongo's Figure 2, which offers more
19 detail on the system provide -- how the system provides adaptive cruise
20 control. The system has two primary modes identified by the green and blue
21 arrows. The first is a trace mode corresponding to the top half, and the
22 second is a play mode corresponding to the bottom half. These modes are
23 complimentary and functionally support one another. In other words, the
24 trace mode acts as a learning phase where databases 10 and 20 are populated
25 with data that is later used for adaptive cruise control. And the play mode is

1 the active control phase where data generated during the learning phase is
2 used to adapt the speed of a vehicle as it travels along a path.

3 Hongo's expressed disclosure, highlighted on the bottom-left of the
4 slide, makes clear that it contemplates embodiments that incorporate both
5 the trace and play or playback modes. Hongo provides adaptive cruise
6 control during the play mode, as shown in the bottom half of Figure 2. First,
7 the system determines the vehicle's position coordinate r using GPS device
8 170. Based on that position, the system identifies a unique block number, or
9 BKN, corresponding to a current 20-meter section. The system uses driving
10 block database 20 to find a BKN whose range, defined by a start coordinate
11 r_1 and an end coordinate r_2 , includes the current vehicle position. As
12 explained in paragraph 32, the BKN is --

13 JUDGE DOUGAL: Counsel?

14 MR. CHOWDHURY: Yes, Your Honors?

15 JUDGE DOUGAL: This is Judge Dougal. So do we know for sure
16 that the r_1 and r_2 are the beginning and end of the segment as opposed to,
17 you know, like an X, Y coordinate, you know, a GPS longitude/latitude
18 coordinate? What information do we have that shows that that is, you know,
19 the start of the road, you know, some part of the road and then the second
20 part of the road to define a segment?

21 MR. CHOWDHURY: Your Honors, thank you for the question. I
22 was just about to get to that point.

23 I think the most relevant disclosure is in paragraph 32 where Hongo
24 explains that the BKN is, quote, specified from a current position coordinate
25 r . We read that to mean that the reference is teaching that the current
26 position coordinate r is compared against the information specified in

1 driving block database 20 to identify a BKN that includes the current
2 position coordinate r.

3 Another disclosure that we'd highlight for Your Honors is in
4 paragraph 44 of the reference, which actually talks about how the r1 and r2
5 coordinates are used in practice in Hongo's adaptive cruise control process.
6 If I could just read that disclosure to you right now, in paragraph 44 Hongo
7 says, in step 415, the block on which the vehicle is running is specified
8 based on the input current -- current input current position r. The block
9 range coordinates r1 and r2 for specifying the block may be read directly
10 from the above-mentioned driving block database 20.

11 So from that description, we realize that the current position
12 coordinate is compared relative to the information specified in the driving
13 block database 20. And so, we know that when a BKN is identified by
14 Hongo's system, it's the BKN that has a current position coordinate that falls
15 within the range of r1 and r2.

16 I hope that answered your questions, Your Honor. Thank you.

17 So, after identifying the BKN, the system uses it to query the database
18 history -- driving history database 10. This retrieves the historical driving
19 data, or data 11, associated with that section, including past vehicle speeds.
20 Finally, based on that historical data, the system calculates and outputs a
21 target vehicle speed V0 to the adaptive cruise control system 200.

22 Unless Your Honors have any other questions, I'll now turn to issue 1,
23 addressing Limitation 1.a.

24 Hearing none, let's turn to slide 33, please. Notice that Limitation 1.a
25 references a segment in reference to a vehicle route. Critically, it does not
26 use modifiers like upcoming, next, or predicted, each of which are terms that

1 are specifically used elsewhere in the specification when referencing
2 identification of future routes or future segments. So the patent drafters
3 clearly knew how to describe the determination of future segments, yet they
4 opted not to include this language within Limitation 1.a. This is important
5 since the language actually used by the claim is generic and provides no
6 public notice suggesting that claim scope is limited only to specific
7 examples described in the specification.

8 As previously noted, adopting Patent Owner's construction would
9 necessarily exclude the Figure 5 process from claim scope. This doesn't
10 seem to make sense to use because Figure 5 serves as the foundation for
11 determining probable optimal speed, which Figure 6 then confirms is used
12 for calculating the efficiency.

13 Slide 35, please. In responding to Patent Owner's interpretation, page
14 5 of the reply, shown on the top left, explained that the plain and ordinary
15 meaning is straightforward. A segment is simply a separate piece, and a
16 vehicle route is a traveled way of a vehicle. Put together, the segment of a
17 vehicle route means a separate piece of a traveled way of a vehicle. This
18 basic understanding is consistent with the examples described in the
19 specification.

20 Further, the concept of a traveled way does not require a final
21 destination for the claimed power application technique to be operative.
22 How do we know? Because the specification itself tells us. In referring to
23 certain power optimization techniques, the specification explicitly states,
24 quote, the destination of the driver does not have to be known. And that's
25 coming from column 3, lines 9 through 11 of the '399 patent.

1 Slide 36, please. The interpretation of Figure 5 discussed today is
2 fully supported by record evidence. On the right, Dr. Morellas explains that
3 if an efficient speed is calculated using the probable optimal speed for a
4 current segment, then the corresponding power associated with that efficient
5 speed is similarly applied for the current segment. Notably, despite having
6 the opportunity to cross-examine Dr. Morellas after his supplemental
7 declaration, Patent Owner opted not to do so.

8 Furthermore, in its subsequent sur-reply briefing, Patent Owner never
9 cited to or otherwise addressed any aspect of Figure 5. Again, Figure 5
10 confirms that any application of calculated power using a probable optimal
11 speed occurs as the vehicle is traveling along the current segment. Again,
12 Figure 5's ordering of steps makes this clear. Power is applied on a
13 segment-by-segment basis, as the vehicle traverses current segments, not
14 future ones.

15 I'll now move on to mappings to 1.a unless Your Honors had any
16 questions on this topic.

17 Slide 39, please. Hongo's BKN satisfies Limitation 1.a in a similar
18 way as a current segment determination of the Figure 5 process. This is
19 shown in three dimensions on this slide. First, both techniques involve
20 discrete portions of the path being traveled by a vehicle. Second, both
21 techniques involve monitoring a current vehicle position. Finally, both
22 involve querying a database for historical data used using the monitored
23 vehicle position and then calculating a speed based on the historical data.
24 Again, Figure 5 is within claim scope. It is a key embodiment. And because
25 Patent Owner's briefing does not address claim -- Figure 5, it hasn't
26 produced any evidence that Figure 5 is properly excluded from claim scope.

1 I'll now move on to the second issue unless Your Honors had any
2 questions.

3 Hearing none, slide 44, please. The language of Limitation 1.c is
4 bolded on this slide. Our position again is simple. The plain
5 meaning -- plain language encompasses applying power while the vehicle is
6 traveling within the current segment.

7 Let's think of a simplified real-world example. Imagine it takes a
8 vehicle 60 seconds to traverse a section of a road represented by the claimed
9 segment. If it takes two seconds to calculate the power for traversing the
10 segment, for instance, 9 to 12 kilowatts, then the vehicle continuously
11 applies the 9 to 12 kilowatts of power as it travels along the segment for the
12 remaining 58 seconds. So it's entirely feasible that a vehicle can calculate
13 and apply electric power while it traverses a current segment.

14 And Your Honors seemed to suggest the same in the Institution
15 Decision. On page 16, Your Honors specifically remarked that the language
16 used in Limitation 1.c, quote, at least implies that the vehicle is traveling
17 along the segment during power application.

18 This makes sense because as Your Honors also found, this is exactly
19 what the patent itself describes. Citing to column 18, lines 64 to 67, Your
20 Honors found that the '399 patent explicitly discloses, quote, calculating, and
21 applying power to a vehicle based on the route segment in which the vehicle
22 is currently traveling.

23 Unsurprisingly, this cited portion is the corresponding description for
24 Figure 5. And this just isn't an isolated teaching either. Other parts of the
25 specification also describe applying power while a vehicle is traveling along
26 a current segment.

1 Slide 49, please. Another example is found in column 5, lines 31 to
2 55, shown near the bottom left. Here, the first sentence states that applied
3 power may be calculated continuously. The next sentence provides
4 examples of such continuous calculation, namely calculation at each point,
5 such as every segment or even points within a segment.

6 The phrase points within a segment here is critical. It explicitly
7 contemplates scenarios where power calculations after the vehicle has
8 already entered a segment and is traveling within that given segment. If the
9 invention were limited only to power -- prospective power application, then
10 this language wouldn't seem to make any sense. It also starkly contrasts
11 Patent Owner's broad allegations that applying power to a vehicle while
12 traversing a current segment is somehow impossible. To remove any doubt,
13 Dr. Morellas discusses implementation details to demonstrate feasibility on
14 the bottom right.

15 Slide 50, please. Further confirming what we've just discussed is
16 disclosure in column 18, lines 4 to 24, shown near the bottom left. Here, the
17 specification discusses scenarios where it is advantageous to use historical
18 data for power calculations. In the bolded and underlined portion, historical
19 data is leveraged to drive each segment at a particular speed. This part of
20 the specification therefore conceptually links the use of historical data and
21 power calculations, and it does so explicitly on a per-segment basis. It also
22 suggests that power may be applied as a vehicle travels along a current
23 segment, using historical data for that segment. Expert testimony near the
24 bottom right of this slide confirms this point.

25 I plan to now examine how Hongo satisfies Limitation 1.c but invite
26 Your Honors to ask any questions before we proceed.

1 Slide 53, please. This slide addresses Hongo's adaptive cruise control
2 function in relation to Limitation 1.c. As discussed earlier, Hongo calculates
3 a target speed V_0 , based on historical data retrieved from the current BKN.
4 Paragraph 24 confirms this, explaining that target speed V_0 is output to the
5 adaptive cruise control system 200. This also coincides with the '399 patent,
6 which, on the left, explains that applied power can be expressed as an
7 optimized speed. This is a basic principle of physics using the calculated
8 vehicle speed. Use of a calculated vehicle speed involves applying the
9 corresponding power needed to achieve and maintain that speed.

10 Dr. Morellas's testimony, near the bottom right, confirms this point.

11 To conclude, Hongo calculates a target speed for a current BKN and
12 applies that speed via an adaptive cruise control as the vehicle travels
13 through a segment. Applying that speed involves calculating a
14 corresponding power per the '399 patent.

15 I'll now move on to issue 3 but would ask if Your Honors had any
16 questions before moving forward.

17 Slide 57, please. Claim 6 includes two limitations, the first of which
18 recites determining multiple route segments. There's been a lot of focus on
19 timing within this record, but let's just revisit how the petition applied
20 Hongo's teachings to this limitation. In order to do so, I'd ask to -- ask you
21 to turn to page 45 of the petition, and I'll give you a moment to get there.

22 In the last sentence of the first paragraph shown on this page, the
23 petition noted that, given that each block is a 20-meter portion, a route
24 longer than 20 meters includes multiple driving blocks.

25 Your Honors, it really is that simple. In Hongo, BKNs have a
26 specified length: 20 meters. And thus, a route longer than this distance

1 implicates multiple BKNs, given Hongo's use of current vehicle position r in
2 the identification of BKNs. More fundamentally, paragraph 27 of Hongo,
3 cited earlier on page 45, also teaches multiple BKNs being specified in
4 driving block database 20. And as discussed earlier today, because the
5 current position coordinate is used to identify a BKN, the BKN
6 identification process itself is performed in relation to multiple BKNs
7 specified in the driving block database 20. This is noted expressly in pages
8 46 through 47 of the petition.

9 Patent Owner will tell you today that 6.1 requires each of the multiple
10 route segments to be identified at the same time, but there's no claim
11 language regarding temporal restrictions, not in Limitation 6.1, nor in
12 Limitation 1.a, as explained in our papers and fully supported by expert
13 testimony.

14 I'll pause here to see if Your Honors had any questions on issue 3
15 before providing a few concluding remarks.

16 Hearing none, let's proceed. I'll now offer a few concluding remarks.

17 The claims, when read according to their plain and ordinary meaning,
18 readily encompass identification of a current segment and power application
19 while the vehicle travels within the current segment, rendering them
20 unpatentable. Patent Owner's entire case, in contrast, hinges on avoiding
21 this reality. In doing so, Patent Owner seeks to rewrite the claims, asking
22 this panel to insert phrases like not yet traveled or prospective only that
23 appear nowhere in the actual claim language.

24 The most striking evidence against Patent Owner's interpretation is
25 Figure 5. And yet, Patent Owner's briefing on Figure 5 has been complete
26 silence, absolute silence, no citation to Figure 5 in either the response or the

1 sur-reply, not even an acknowledgment of the Board's analysis of Figure 5
2 within the Institution Decision. Patent Owner never even attempted to
3 explain how Figure 5 fits within its apparent patentability narrative.
4 Therefore, any characterization or argument regarding Figure 5 by Patent
5 Owner today would be for the first time within this proceeding and absent
6 from the record they chose to build.

7 Figure 5 was even flagged by Petitioner prior to institution in its
8 authorized pre-institution reply. More importantly, Your Honors also
9 flagged it. On page 17 of the Institution Decision, Your Honors relied on
10 Figure 5 in rejecting Patent Owner's claim interpretations. These proposals,
11 while advanced prior to institution, have not meaningfully changed post-
12 institution.

13 With that, I'd ask if Your Honors have any final questions.

14 JUDGE O'HANLON: Mr. Chowdhury, I do have a question
15 regarding Dependent Claim 8. It's my understanding from reading the briefs
16 that for the remote database limitation of Claim 8, you rely, I think, solely on
17 the disclosure of a wireless connection to the server at column 8, lines 28 to
18 29, I believe, of the Newstrom reference. Is that correct?

19 MR. CHOWDHURY: That's correct, Your Honors. The disclosure is
20 cited in column 8, and we -- the Petition cites not only to the initialization
21 but also to the subsequent communications that may occur with the database
22 as the vehicle is being driven. But we agree with your comment that we're
23 relying on the communication with a server to satisfy the requirement within
24 Claim 8 that recites communicating with a remote database.

25 JUDGE O'HANLON: Okay. Thank you.

1 MR. CHOWDHURY: Thank you, Your Honors. If there are no
2 other -- sorry about that. Are there any other questions?

3 JUDGE O'HANLON: No, I don't think we have any other questions
4 at this time. Thank you, Mr. Chowdhury.

5 We'll now hear from Patent Owner. Mr. Herman, would you like to
6 reserve any time for rebuttal?

7 MR. HERMAN: Fifteen minutes, Your Honor.

8 JUDGE O'HANLON: Let me reset the clock for 45 minutes. Okay.
9 The clock is set, Mr. Herman. You may begin when you're ready.

10 MR. HERMAN: Good afternoon, Your Honors. We're here today to
11 discuss the '399 patent. And the '399 patent is defined by its claims. And
12 construction of those claims begins with and must focus on the language of
13 the claims themselves. And it is the claimed subject matter that must be
14 taught by the prior art for Petitioner's arguments in this proceeding to
15 succeed. And I submit that that is a fundamentally important point: the
16 claims have primacy. Petitioner would have Your Honors put that aside.

17 Throughout Petitioner's briefing, and again here today, Petitioner time
18 and time again points to the '399 patent's specification instead of the claims.
19 Petitioner points to the specification to try to show that the claims must
20 mean something other than what they say. Petitioner repeatedly points to
21 superficial similarities between the language used by the specification and
22 the prior art.

23 Respectfully, this invites error, and it is nothing more than an
24 improper attempt to lead the Board astray. Again, the focus must be on the
25 claims. There is no legal principle that says that every single thing within
26 the four corners of the specification must necessarily be claimed. Nor is

1 there a legal principle that says if you can find the prior art in the
2 specification, then the claims must be unpatentable. That is not the law, but
3 that is what Patent Owner encourages Your Honors to find.

4 The '399 patent includes a lengthy specification. It discloses many
5 different aspects and many different variations of a system that operates to
6 optimize vehicle operation, but not all of that is claimed, and that should
7 have been apparent to Petitioner. Why is that? Because Petitioner has filed
8 four separate IPR petitions addressing four of Patent Owner's patents. Those
9 patents share a specification. But Petitioner did not rely on the same art in
10 those different IPRs. Instead, each IPR relies on completely different art.
11 That is because each patent includes different claims, embracing different
12 subject matter from the same specification. And here, it is the '399 patent's
13 claims that control the analysis.

14 So, turning to slide 2 of Patent Owner's demonstratives, what is the
15 '399 patent as claimed actually about? As shown in the specification excerpt
16 on this slide, the patent recognizes a problem with the prior art. In the prior
17 art, either the driver manually controls the vehicle, or control is provided by
18 an operational assisting device, like a cruise control, that keeps the vehicle at
19 a target speed or a speed range as the vehicle moves from point to point
20 along a roadway. Why is that a problem? The patent explains that it does
21 not optimize the power consumption of the vehicle.

22 So slide 3 summarizes the '399 patent's inventive solution. A vehicle
23 power management system receives various inputs about the vehicle. One
24 of those inputs, as shown by the first red underlining towards the top of the
25 slide, is information about the route. Other inputs include vehicle state
26 information and operational parameters. Then, as shown by the next bit of

1 red underlining, the system uses the inputs, including the route information,
2 to calculate and optimize power to apply to the vehicle. Further, as shown
3 by the bottom callout, the patent explains that the received vehicle route can
4 be broken up into segments. According to the patent, the more segments
5 that the route is divided into, the better the optimization calculations.

6 So, turning to slide 4, this is all reflected in the '399 patent's claims.
7 Claim 1 is shown on this slide. And as shown, the claim is directed to a
8 method of vehicle operation, and the claim first requires determining a
9 segment of a vehicle route. Next, the claim requires determining various
10 information about the vehicle and its operation. Finally, calculated power
11 must be applied to the vehicle to allow it to travel along the determined route
12 segment at a calculated speed. As I'll discuss in a moment, the parties'
13 dispute focuses on the highlighted limits, both of which refer to vehicle route
14 segments.

15 So slide 5 provides an overview of the Petition's grounds. And as
16 shown by this slide, all the grounds allege that the claims are obvious. And
17 as also shown, all the grounds rely on Hongo, the prior art reference Hongo,
18 for the vast majority of the claim limitations. But Hongo is directed to a
19 system that is very different from what the claims require. And none of the
20 other prior art Petitioner points to makes up for this disclosure shortcoming.

21 So, slide 6, what's missing from the prior art? First, there was no
22 teaching of a system and method in the prior art that determines a segment
23 of a vehicle route as all the claims require. For this limitation, Petitioner
24 points only to Hongo, but this is something that Hongo does not do.

25 So, turning to slide 7, this slide summarizes the issues with
26 Petitioner's arguments and the prior art's disclosure. Why doesn't Hongo

1 teach the claim determining a segment of a vehicle route? There are three
2 reasons. First, Hongo has no idea where the vehicle is going or what route it
3 is taking. Second, Petitioner completely misinterpreted Hongo's operation in
4 the petition. It never explained why Hongo, as it actually operates, satisfies
5 the claims, so there was a failure of proof here. Third, putting aside these
6 issues, a person having ordinary skill in the art would not have considered
7 Hongo's block numbers, or BKN as they are sometimes called, to be vehicle
8 route segments. I'll address each of these reasons in turn.

9 So, turning to slide 8, first, Hongo cannot determine a vehicle route
10 segment because it is unaware of the vehicle's route. So what does the term
11 route mean in the '399 patent? As shown by the excerpts on slide 8, the
12 vehicle's route is the path it is traveling from its current position to a
13 destination. You can see this stated time and time again in the specification.
14 The route is a path to an actual or estimated ending position. The route
15 proceeds to a final destination position. The route is the path from a starting
16 position, through any intermediate positions, to an ending position. The
17 route is from --

18 JUDGE DOUGAL: Counsel?

19 MR. HERMAN: Yes.

20 JUDGE DOUGAL: This is Judge Dougal. So you just warned us
21 about the need to not focus on the spec too much and focus on the language
22 of the claims, but I feel like this argument is just doing exactly what you
23 warned us not to do by taking particular embodiments that talk about the
24 destination and making us interpret the claims to require this embodiment
25 into the claims. So why does the claim require a final destination to
26 determine a route?

1 MR. HERMAN: Because the claim uses the word vehicle route,
2 right? And that particular claim phrase requires a destination. You don't
3 have a route unless you are going somewhere. If the car is driving around
4 aimlessly with no particular destination, the car does not have a route. There
5 is only a route when there is a destination. It does not need to be the final
6 destination. It can be an intermediate destination. It can be a predicted
7 destination, but there is not a route without a destination. Aimless traveling
8 does not entail traveling along a route. You need to be going somewhere for
9 the vehicle to have a route.

10 And that's expressed time and time again in the specification. So this
11 is not just in a single embodiment. There is no embodiment in the
12 specification that ever uses the term route to refer to anything other than
13 travel towards a destination. That could be a final destination that the driver
14 has supplied, so an actual known destination. It could be a destination that
15 has been predicted by the system. It could be a destination that's an
16 intermediate destination that the vehicle thinks it's going to, but it's not a
17 hundred percent sure if that's where it's going, and that's updated over time.

18 But in all cases, the specification uses the word route to refer to travel
19 to a destination. The specification never uses the word route in any other
20 sense.

21 JUDGE O'HANLON: Mr. Herman, looking at the language of the
22 claims, I notice Claim 1 does not recite determining a route. It recites
23 determining a segment of a route. So why isn't it enough just to determine a
24 segment?

25 MR. HERMAN: So you can't have a segment, which is a portion of a
26 route, unless you have a route to begin with. So a necessary prerequisite for

1 segmenting the route is knowing the route. So a segment is a portion of the
2 route. There's no dispute here that that's what the term segment means. So,
3 if a segment is a portion of a route, you can't have a segment unless you
4 have a route first.

5 And if you look, for instance, at Patent Owner's slide 9, that's exactly
6 what the '399 patent discloses, right? So the segments of a vehicle route in
7 the '399 patent are portions or pieces of an already determined route. So the
8 '399 patent's process entails first determining the route, and then segmenting
9 that route into one or more segments, and that's what the claims require.
10 Determining those segments --

11 JUDGE O'HANLON: Mr. Herman, this is Judge O'Hanlon again. I
12 think this -- your slide 9 here kind of highlights my question. That first
13 block 201, determine route, that is not recited in the claims.

14 MR. HERMAN: The words determine route, Your Honors, do not
15 appear in the claims, but the claims require determining a segment of a
16 vehicle route. So you cannot determine a segment of the vehicle route
17 unless you know where the vehicle is going because otherwise, the segment
18 is not a segment of the vehicle route; it's a segment of something else. But
19 the claims here require determining a segment of the vehicle's route, not just
20 determining a segment. So you can't determine a segment in the abstract and
21 satisfy the claims. You must determine a segment of the vehicle route.

22 So the claims require segmenting something very specific. And what
23 the claims require segmenting is the vehicle route, right? The determined
24 segment needs to be a segment of the vehicle route.

25 JUDGE O'HANLON: But Mr. Chowdhury highlighted the disclosure
26 of the '399 patent where it determines segments or routes based on historical

1 data. And I believe the '399 patent talks about inferring and constantly
2 inferring destinations, so that seems to cut against what you're saying where
3 the end destination or any intermediate destination might not be known. It
4 could be the process constantly changes and tries to figure out where it's
5 going, but there's not a known destination.

6 MR. HERMAN: So Your Honor is correct that there may not be a
7 hundred percent known destination. But in all cases, the vehicle has an idea
8 of where it thinks it's going. So there is always at least a predicted
9 destination. Yes, it can update that predicted destination over time, but that
10 does not mean that at the time it's segmenting it does not have a particular
11 destination in mind. And Your Honor, I believe you were referring to the
12 passage relating to Figure 5 that counsel for Petitioner was discussing during
13 his arguments.

14 And first, I'd like to note for the record that Patent Owner did discuss
15 the portion of the specification relating to Figure 5 in its briefing. You can
16 find that on page 7 of Patent Owner's response, so it is not correct that we
17 did not discuss the portion of Figure 5 in any of our briefing. It's discussed
18 in our briefing.

19 And I'll also note that that portion of Figure 5, the segments that are
20 referred to in that portion of Figure 5 are segments that relate to the vehicle's
21 current trip. So those segments correlate to portions of the vehicle's trip, so
22 portions of where the vehicle is going. They are not disconnected from the
23 vehicle's destination. They relate to where the vehicle is going, and you
24 can --

25 JUDGE O'HANLON: Mr. Herman, we lost your video. I'm sorry.
26 Your audio cut out.

1 MR. HERMAN: Can you hear me now, Your Honor?

2 JUDGE O'HANLON: Yes. Yes, I can hear you now, but it cut out
3 for a few seconds.

4 MR. HERMAN: Sure. So I'll return again to Figure 5. So the portion
5 of Figure 5, Your Honor, is discussed in Patent Owner's briefing. You can
6 find an example of that on page 7 of Patent Owner's response.

7 And I'll also note that that portion of the specification, the segments
8 that are referred there -- referred to there, including the current segment
9 that's referred to there, those segments relate to the vehicle's trip, so where
10 the vehicle is now and where the vehicle is going to. So the segments are
11 not disconnected from the vehicle's destination. The segments that are
12 discussed in column 18, in connection with Figure 5, relate to a vehicle trip.

13 And you can see that, for instance, in column 18 at line 49. There, the
14 specification explains that Figure 5, the segments discussed in Figure 5, are
15 segments going to the predicted destination, right? So the segments have a
16 particular destination in mind and are a portion of the vehicle's travels
17 towards that destination. They are not disembodied from the destination.
18 They end at the destination. And the same thing is repeated later, right, later
19 that that same portion of the specification explains that speed is most
20 likely -- the speed that is most likely best to travel for the current trip is
21 what's calculated.

22 So, again, the '399 patent is discussing segmenting the vehicle route,
23 and the segments have destinations, and the route has a destination.

24 Now, moving on to slide 10, Hongo includes no such teaching.
25 Hongo does not care where the vehicle is going. It never determines the
26 vehicle's route. It is unaware of the vehicle's final destination, any predicted

1 destination, or any intermediate destination. As shown on slide 10, it simply
2 controls speed based on the vehicle's current location.

3 If we turn to slide 11, Patent Owner's expert, Dr. Hoff, also explained
4 this in his declaration. Per Dr. Hoff, Hongo's cruise control system
5 considers only the vehicle's current position, where it is now on the road. It
6 does not know the vehicle's destination. It does not know the route the
7 vehicle is traveling to that destination. And Petitioner does not dispute that
8 this is how Hongo operates. This means, Patent Owner submits, that Hongo
9 cannot satisfy the claims. Because it does not know the route, it cannot
10 determine a segment of that unknown route. There can be no determination
11 of a segment without first knowing the route, and Hongo admittedly does not
12 know the route.

13 So, moving on to slide 12, Hongo's unawareness of the route is not the
14 only problem with the Petitioner's arguments. As I explained before, the
15 petition also fails to properly account for Hongo's operation. This slide
16 includes an excerpt from the petition summarizing how Petitioner originally
17 believed Hongo to operate.

18 What did Petitioner say? According to Petitioner, during a so-called
19 trace mode, Hongo's system collects a whole bunch of GPS measurements as
20 the vehicle drives along. Then, according to Petitioner, these collected GPS
21 measurements are divided into 20-meter sections and stored as blocks for
22 later use during speed control. So Petitioner argued to the Board that
23 Hongo's blocks represent a 20-meter-long collection of GPS measurements,
24 representing a path the vehicle actually traveled at some point in time.

25 So, turning to slide 13, Petitioners -- this is also how Petitioner's
26 expert interpreted Hongo. As shown on this slide, the expert explained that

1 Hongo's blocks represent actual GPS measurements collected as the vehicle
2 travels over 20 meters of roadway, but this is not what Hongo teaches. The
3 blocks do not represent 20 meters of vehicle travel. And this is important.
4 Why? Because it means that Petitioner premised its arguments on an
5 understanding of Hongo that is simply wrong. But it also means that
6 Petitioner never explained why Hongo, as it actually operates, teaches what
7 the claims require.

8 Respectfully, this is a failure of proof, and it's also a failure of proof
9 that cannot be fixed. While Petitioner argued in his briefing and argues
10 today that it pointed to disclosure in Hongo, more was required than simply
11 pointing to and quoting the reference. Petitioner must also be right about
12 how the prior art works. It must properly characterize the reference's
13 operation and explain why that operation satisfies the claims, and that's not
14 what it did.

15 So, turning to slide 14, as shown on this slide, Hongo's blocks are not
16 20-meter segments of collected GPS data. As shown by the red
17 highlighting, during trace mode, a single GPS coordinate *r* is collected as the
18 vehicle is driving along. Next, as shown by the blue, the blocks and the
19 block range coordinates -- that's the *r1* to *r2* -- are just static data stored in a
20 database 20 of map data.

21 So, turning to slide 15, this slide includes an annotated version of
22 Figure 2. During Hongo's trace mode, the vehicle's GPS uses -- collects a
23 single position -- that's the red *r* -- corresponding to the vehicle's current
24 location. This is then used to query the static database 20, which includes
25 map data, and the static road map data is stored in 20-meter chunks. Then
26 Hongo creates a new entry in database 10 for the vehicle's current position,

1 but rather than storing the collected position r , it stores the chunk of static
2 map data it got from database 20. And you see that shown by the blue arrow
3 on the slide.

4 So, as shown on slide 16, Patent Owner's expert explained why Hongo
5 operates this way. Hongo wants to match the vehicle's current position with
6 stored speed data for that position, but GPS is not accurate enough and is not
7 collected frequently enough for this to work properly if only single GPS
8 points are collected. So Hongo effectively abstracts its collected position
9 information. It turns the discrete position into what it calls a BKN; that's a
10 20-meter chunk of map.

11 Petitioner does not dispute any of this, does not dispute that database
12 20 is just static map data. It does not dispute that there were limitations on
13 the accuracy and frequency of GPS collection at the time the '399 patent was
14 filed, and it does not dispute that this is why Hongo operates the way it does.
15 Instead, it tries to argue that Hongo's use of current position, as abstracted to
16 a map, somehow still satisfies the claims, and it does not.

17 So, turning to slide 17, as shown here, Patent Owner's expert
18 explained that Hongo's blocks are analogous to the thick, static distance
19 markers on a highway. They are just the minimum chunk that Hongo chose
20 to store discrete position data in its map database. Hongo is still collecting
21 current vehicle position. It is still controlling vehicle speed based on that
22 current vehicle position. It has just reduced the accuracy of the collected
23 position information from a discrete point in space to a 20-meter block.

24 Turning to slide 18, there's also no dispute that there's no real
25 correlation between where Hongo's vehicle is going, and the block range
26 coordinates r_1 to r_2 that represent each stored chunk of map data. Hongo

1 never determines and does not care if the vehicle is currently at or was ever
2 at the start of range r1. Likewise, Hongo never determines and does not care
3 if the vehicle is actually traveling to the end of range r2. Instead, Hongo
4 only cares about where the vehicle is now.

5 Dr. Hoff's testimony explaining this is reproduced on slide 18, and
6 this is something that Petitioner does not dispute. Indeed, Petitioner's expert
7 agreed during deposition that Hongo makes no assessment if the vehicle is
8 traveling to the end of the block r2. That testimony is cited on page 14 of
9 Patent Owner's response. That's Paper 13. And one example of this
10 admission could be found on pages 48 through 50 of Exhibit 2008.

11 So, turning to slide 19, why is all this important? Because the '399
12 patent's claims require determination of a segment of a vehicle route. So the
13 segment needs to be a segment of something very specific: the route the
14 vehicle is traveling. The segment cannot be vehicle route agnostic. It must
15 be a portion of the route the vehicle is traveling. And this is where the
16 petition goes awry.

17 Hongo's BKN are just slices of a map. They have nothing to do with
18 where the vehicle is traveling. The map is the same from vehicle to vehicle
19 to vehicle. All that Hongo does is recognize that the vehicle is on a road for
20 which it has stored map data. But knowing that the vehicle is on a road is
21 simply not the same as knowing the vehicle's destination, the route to that
22 destination, and then dividing that route into segments. And respectfully,
23 that is what the claims here require.

24 So turning to --

25 JUDGE O'HANLON: Mr. Herman?

26 MR. HERMAN: Yes.

1 JUDGE O'HANLON: Doesn't -- in the playback mode, doesn't
2 Hongo take the current vehicle position, determine the block number, and
3 then from the block number, determine speed limit, previous speeds, the
4 various other data based on that 20-meter section, and isn't the vehicle
5 traveling over that 20-meter section, so wouldn't the vehicle be traveling that
6 section? I understood you to say the vehicle might not be traveling over that
7 20-meter section.

8 MR. HERMAN: So, during the playback mode, Hongo's vehicle
9 collects a single GPS position r, one GPS position. And it uses that single
10 GPS position r to query the static map data. So it -- the vehicle may be
11 within the range that that block is represented, but it does not necessarily
12 have to have started traveling at the beginning of the block, right? It may
13 have entered in the middle. And it does not necessarily need to be traveling
14 to the end of the block, so it may exit the block before it reaches the end.

15 So, if I were to make an analogy, essentially, this is the patent claim
16 equivalent of saying that a broken clock is right two times a day. But yes,
17 there may fortuitously be overlap between where the vehicle is actually
18 traveling and blocks, but that does not mean that Hongo is determining
19 segments of the vehicle's route. Hongo has no idea where the vehicle is
20 going, and it does not even know if the vehicle will ever reach the end of
21 that particular block r1. It only cares about where the vehicle is now. So,
22 essentially, what it's doing is collecting single pieces of position data and
23 then matching that to circles on a map. That's all it's doing.

24 So, turning to slide 20, the vehicle route segment determination is not
25 the only thing that's missing from Hongo. Even if we assume that Hongo's
26 blocks are route segments -- then again, they are not; they are only map

1 data -- the claim would still not be satisfied. And why is that? Because
2 Hongo and the other prior art in the petition don't perform the right
3 calculations and control vehicle speed too late.

4 So slide 21 reproduces Claim 1 again. As shown, the claim requires
5 applying calculated electric power to the vehicle to travel along the segments
6 of the vehicle route at a calculated speed. Respectfully, Patent Owner
7 submits that the only reasonable way to interpret that language is as
8 requiring, one, determining a segment the vehicle has not yet reached, and
9 then two, calculating the power needed to travel along that segment from
10 start to end at a calculated speed.

11 So Petitioner argues that the claims say nothing about prospective
12 calculation and can have -- and can brace calculations for the vehicle's
13 current position. Patent Owner submits that is simply not the case. The
14 claim language to travel along the segment of the vehicle route appears in
15 the claim as shown by the underlining. It is not enough to perform
16 calculations in the abstract. It is not enough to perform calculations to apply
17 power and travel at speed for just one point or just one moment in time.

18 Instead, the claim says that power must be calculated and applied such
19 that the vehicle travels along the segment of the vehicle route at a calculated
20 speed. Your calculation is not to travel along a segment if you've already
21 passed the segment. Likewise, your calculation is not to travel along a
22 segment if you already -- if you are already 75 percent through that segment.
23 A calculation is only to travel along the segment if you've done your
24 calculation before you've reached the segment's start. So --

25 (Simultaneous speaking.)

1 JUDGE O'HANLON: So, Mr. Herman, doesn't the '399 patent
2 discuss -- again, based on the historical data embodiment, doesn't the '399
3 patent discuss determining a calculated speed for the vehicle based on its
4 current position?

5 MR. HERMAN: So, Your Honor, yes, there are examples of that in
6 the specification. But there are also examples in the specification of what
7 the claims require. And you can see an example of that on slide 22. On
8 slide 22, the specification explains that it deduces information about the
9 vehicle's route -- in other words, where the vehicle is going -- and then
10 optimizes power accordingly. So optimization is occurring not just for
11 where the vehicle is now but for the vehicle's upcoming route.

12 So there are examples in the specification where speed is controlled
13 for now, and there's examples in the specification where speed is controlled
14 for the vehicle's route. And the claims require the latter: speed that is
15 controlled for the vehicle's route. And this is not what Hongo does. Nothing
16 it does is prospective. It only controls the vehicle's --

17 JUDGE O'HANLON: Let me -- before you move on to Hongo,
18 Mr. Herman, what is the language in Claim 1 that requires a prospective
19 calculation of power?

20 MR. HERMAN: If we look back to slide 21, Your Honor, it is the
21 phrase to travel along the segment of the vehicle route. So those words, the
22 words to travel along the vehicle of the segment route, require calculating
23 power for something more than a single point in space, right? The
24 calculation must allow the vehicle to travel along the segment of the vehicle
25 route at a calculated speed. And again, if you are already within the segment

1 or if you have already passed the segment, you can't perform that calculation
2 and you can't apply power in the claim the way the claims require.

3 To apply calculated power to travel along the segment of the vehicle's
4 route, you have to perform your calculation of power and speed before you
5 reach the route; otherwise, you're not going to be able to apply that
6 calculated power in the way the claims require. And what's the way the
7 claims require? The calculated power has to be applied such that it allows
8 travel along the segment of the vehicle route, so from its start to its end.

9 JUDGE O'HANLON: So you would read -- you would have us read
10 that limitation as to travel along the entire segment of the vehicle route --

11 MR. HERMAN: So to travel --

12 JUDGE O'HANLON: -- at the calculated speed?

13 MR. HERMAN: I would have Your Honors read that to travel along
14 the segment from where the -- from where it begins to where it ends. And
15 the limitation does not say apply calculated power to travel in the segment at
16 a calculated speed, but that's what Petitioner is proposing. It's proposing that
17 you --

18 JUDGE O'HANLON: It also -- the claim language also doesn't say
19 travel along the entire segment from the beginning position to the end
20 position.

21 MR. HERMAN: Although, it does say, Your Honor, to travel along
22 the segments, which necessarily means more than travel at a single point in
23 space.

24 JUDGE O'HANLON: Okay. Thank you.

25 MR. HERMAN: So, moving on to slide 23, the art also does not
26 teach certain dependent claims. One of these is Claim 6.

1 So slide 24 reproduces both Claim 6 and Claim 1, which is the base
2 claim on which slide 6 depends. What does Claim 6 require? It narrows the
3 determining a segment of a vehicle route step of Claim 1 by requiring that
4 that entailed determining multiple route segments.

5 So Petitioner's told Your Honors that this Claim 6 added limitation is
6 satisfied by Hongo because Hongo keeps determining new positions, and the
7 blocks that correspond to those positions, as the vehicle moves down the
8 road. Petitioner argues that this is covered because there was no, in
9 Petitioner's words, temporal limitation in Claim 1.

10 What Petitioner is really saying is that you can practice Claim 1 once
11 at the start of a six-hour trip, and then again six hours later at the very end of
12 that trip and somehow satisfy Claim 6. That is not the case. Repeatedly
13 performing the method of Claim 1 again and again, which is all Hongo does
14 if you assume its blocks are segments, does not satisfy Claim 6. Claim 6
15 narrows Claim 1. It requires more than just what Claim 1 requires. So just
16 doing what Claim 1 requires again and again plainly cannot be enough for
17 purposes of Claim 6.

18 So what more is required? As shown here, on slide 24, the step of
19 determining a segment of a vehicle route requires determining multiple
20 segments. So you need to take your route, and you need to break that route
21 up into multiple segments. And that's something that Hongo never does.

22 So, turning to slide 25, as shown here, Patent Owner's expert explains
23 that Hongo never determines multiple route segments. It never determines
24 more than one. Petitioner does not dispute that this is exactly how Hongo
25 operates. But again, just doing Claim 1 again and again can't possibly be
26 enough for purposes of Claim 6. You need to do more for purposes of

1 Claim 6; multiple segments need to be determined, and Hongo never does
2 that.

3 Turning to slide 26, why does Claim 6 require multiple segments to be
4 determined? The '399 patent explains this on this slide. The more segments
5 you break your route into, the more refined your speed and power
6 calculations are.

7 So, turning to slide 27, Petitioner has also fallen short when it comes
8 to Claim 8. As shown on slide 28, this claim requires communicating with a
9 remote database to obtain information about the vehicle's operating status.

10 But as shown on slide 29, the petition doesn't point to anything like
11 this in the prior art. This slide shows the sole excerpt from Newstrom, the
12 reference Petitioner relies on for Claim 8 that is cited. What does Newstrom
13 say? It says that during first initialization -- that's vehicle setup -- a database
14 manager 22 can be loaded with information from a CD, hard disk, or
15 wireless connection with a server.

16 There are multiple levels of issues with this. First, this has nothing to
17 do with the vehicle operation. It's talking about a point in time when the
18 vehicle is being initialized, not when it's operating. Next, neither Newstrom
19 or Petitioner say where the server is. The claims require a remote database,
20 not a server that is on or local to the vehicle, so there's been a failure of
21 proof here.

22 And turning to slide 30, Patent Owner's expert also explained why a
23 person having ordinary skill in the art would never consider engaging in
24 remote communication during operation of Newstrom's system. Newstrom
25 teaches a lane departure warning system. It queries database manager 22
26 while running, instead of a long-term storage database 20, to ensure speedy

1 operation. As explained by Patent Owner's expert, it would make no sense
2 to query a remote database during operation as that would be far too slow to
3 carry out Newstrom's purpose.

4 And this testimony stands unrebutted. Petitioner has presented
5 nothing to the contrary. Instead, Petitioner and his expert only submitted a
6 declaration saying that while Newstrom only discusses local communication
7 on board the vehicle while driving, it nonetheless purportedly could
8 theoretically communicate with a remote database.

9 But what Petitioner does not do is offer an explanation of why
10 Newstrom would have done this or why this would have occurred or why it
11 would have been obvious for it to occur, nor does it dispute the significant
12 practical concerns raised by Patent Owner's expert. Showing that the prior
13 art could potentially operate in some unusual way does not show
14 obviousness, and respectfully, that is all that Petitioner has done here.

15 So, with that, I'd be happy to answer any questions that the Board has.
16 Otherwise, I'll reserve the remainder of my time for rebuttal.

17 JUDGE O'HANLON: Thank you, Mr. Herman.

18 We'll now hear from Mr. Chowdhury for your rebuttal. You reserved
19 20 minutes of time, but you did not use nearly all of your time previously,
20 but I will set the clock for 20 minutes. And if you use that all up, we'll let
21 you go further into your reserved time from the argument in chief. So,
22 Mr. Chowdhury, you may begin when ready.

23 MR. CHOWDHURY: Sure. Thank you, Your Honors. A few points
24 on Patent Owner's arguments regarding the vehicle route term. Patent
25 Owner argues that the plain meaning of vehicle route implicates knowledge
26 of a destination. This seems to suggest that they believe that the

1 specification defines the term vehicle route in some unique way specifically
2 that it requires a destination.

3 We're not quite sure how to -- how they get to this lexicography
4 maybe, but to the extent that Patent Owner relies on lexicography, this is a
5 new argument advanced for the first time today. Patent Owner has not
6 argued in its papers that the '399 patent provides definitional disclosure for
7 the route segment or a vehicle route. Instead, they rely on plain meaning.

8 As explained in our Petitioner's reply, the plain meaning of vehicle
9 route is a traveled route of a vehicle. When a vehicle travels, it has a
10 destination. It has a starting point, and it moves to a different point. So it's
11 Patent Owner's interpretation that actually departs from plain meaning by
12 requiring a final destination.

13 And again, the pertinent point is that a vehicle is traveling on a road,
14 and by virtue of traveling on the road, there's clearly some destination of the
15 vehicle's travel.

16 JUDGE MELVIN: I've got a question. This is Judge Melvin. So do
17 you dispute Patent Owner's view of Hongo's blocks, that is that they are a
18 section of map?

19 MR. CHOWDHURY: Yes, we do, Your Honors. It's not simply just
20 map data. The blocks are specifically referring to a road that's being
21 traveled by a vehicle. So, when Hongo's system identifies a BKN, it has a
22 start coordinate and an end coordinate, which is a 20-meter section of the
23 actual road that's being traveled on by the vehicle. So yes, we do dispute the
24 characterization that a BKN is just simply map coordinates that are stored in
25 a database somehow.

1 I think this gets to the point which we explained in our reply. The
2 nature of the information that's stored in the database is not ultimately
3 relevant to how the prior art should satisfy the claim language if the claim
4 language doesn't specify what type of segment is recited in the claim. It just
5 says segment of a vehicle route. It doesn't specify that this segment has to
6 be dynamic. It doesn't specify that the segment has to be determined at
7 some time point before the vehicle enters it. It just says segment of a vehicle
8 route. And the specification provides examples of not only static segments
9 but dynamic segments that are continuously re-segmented as the vehicle is
10 traveling along the route.

11 Did I answer your question, Your Honors, and did you have any
12 follow-up questions?

13 JUDGE MELVIN: You did. Thank you.

14 MR. CHOWDHURY: So, turning back to -- we had planned to
15 discuss the '399 patent describes examples involving destinations, and it also
16 expressly states that a destination does not have to be known for power
17 optimization. As noted during our presentation, that disclosure is in column
18 3 of lines 9 through 11.

19 Third, in the primary reference, Hongo, in paragraph 27, we see a
20 description that identifies the driving direction on the road being driven and
21 then segmenting it and dividing it into fixed-length driving blocks. That
22 description, the driving direction on the road being driven kind of hits home
23 what we had mentioned earlier today. It also tells you that in Hongo, it
24 would be incorrect to assume that a BKN is just map coordinates. It's
25 referring to a 20-meter section on the physical road being traveled by the
26 vehicle.

1 So, in our view, the '399 patent and Hongo are both examples of third-
2 party evidence that a person of ordinary skill in the art would not have
3 understood the term vehicle route to require a destination under plain
4 meaning. But beyond that, Your Honors need not ultimately reach whether
5 the plain meaning of a vehicle route requires a destination. This is because
6 the prior art ultimately satisfies one of Patent Owner's narrow constructions
7 of the vehicle route.

8 In page 4 of the sur-reply, Patent Owner concedes that an intermediate
9 destination may also be sufficient to satisfy its interpretation of a vehicle
10 route. And in Hongo, each driving block, or BKN, is defined by a start
11 coordinate and an end coordinate. The end coordinate is called r2. This r2
12 coordinate can be thought of as a type of intermediate destination because
13 the vehicle crosses the r2 coordinate when it completes traveling the 20-
14 meter section associated with the current block.

15 Hongo's system also continuously monitors the vehicle's current
16 position using GPS, and it then matches that position coordinate to identify
17 the appropriate BKN from the driving block database 20. Thus, the Hongo
18 system would have been aware that the vehicle has reached an intermediate
19 destination, namely the r2 boundary, boundary point of the current block,
20 based on the monitored position coordinate.

21 Again, clearly, the travel of a vehicle has a destination. As such, all
22 you need to know is that the vehicle has some destination, which it has
23 because it's going from starting point and heading towards a point that's
24 different from the starting point. And even the specification supports this
25 view since it describes the implementations where the route may be
26 continuously re-segmented as the vehicle is traveling along a route.

1 I also wanted to address a couple of statements about Patent Owner's
2 accusations about our statements relying on the specification. I think these
3 are mischaracterizations of Petitioner's position. Our briefing makes clear
4 that we applied plain meaning in light of the specification and as being
5 consistent with the specification, for instance, Figures 5 and 6. The
6 discussion of Figures 5 and 6 within the reply and during today's
7 presentation were simply to demonstrate how Patent Owner has instead
8 departed from the plain meaning.

9 The law requires that claim terms not be interpreted in a manner that
10 runs contrary to the treatment of the term by the Patent Owner in its own
11 intrinsic patent specification. Here, the Petitioner has made the point that
12 Patent Owner's theory is facially inconsistent with the specification as it
13 excludes the Figure 5 embodiment.

14 We continue to advance plain and ordinary meaning. Even if
15 construction is found to be required, we know from the above that the
16 position on construction advanced by the Patent Owner does not stand
17 against the scrutiny as the Federal Circuit has consistently applied. Yet, they
18 ask Your Honors to run contrary -- directly into the teeth of unshaken
19 jurisprudence in characterizing our positions as being rooted in the
20 specification.

21 I'll now also respond to Patent Owner's characterizations about
22 Hongo's adaptive cruise control technique. As we mentioned earlier, Patent
23 Owner's argument confuses the real issue. Whether or not GPS data is
24 collected by device 170 is stored in the driving block database 20 is
25 ultimately irrelevant. Hongo's expressed disclosure makes clear that the
26 system uses the current position coordinate r to determine the BKN. We've

1 talked about this both in our original presentation and earlier during this
2 discussion. This isn't merely Petitioner's interpretation. It's Hongo's
3 expressed disclosure.

4 As earlier offered, paragraph 44 of Hongo states that the block on
5 which the vehicle is running is specified based on the input current position
6 r. The same paragraph explains that block range coordinates r1, r2, for
7 specifying the block may be read directly from the driving block database
8 20. This structure, where r1 and r2 are pulled from driving block database
9 20 and compare it to the current GPS position, expressly contemplates using
10 the database 20 as a lookup table. The system checks which predefined
11 segment r1 to r2 contains the current position in order to identify a relevant
12 BKN. Thus, the vehicle's actual position coordinate is what's used to
13 dynamically identify the present driving block.

14 And this is exactly the functionality that we see in Figure 5. In Figure
15 5, a current position is used to query a database, retrieve historical
16 information about the current segment, and determine a probable optimal
17 speed, which then, in turn, contributes to calculating the efficient speed that
18 affects the power applied to the vehicle. In short, Hongo's disclosure
19 confirms dynamic real-time block identification based on a current position.
20 It's not static reliance on some abstract map data untethered to the vehicle's
21 actual travel.

22 I'd also like to address some arguments made by Patent Owner in
23 connection with testimony from their expert, cited on their demonstrative
24 slides 16 through 19. These arguments fail to --

25 JUDGE DOUGAL: Counsel?

26 MR. CHOWDHURY: Sure. Yes, Your Honors?

1 JUDGE DOUGAL: This is Judge Dougal. Just to clarify, so you're
2 saying, if I look at Claim 1, that determining a segment of a vehicle route,
3 it's not the initial, you know, you drive a road; first time, it creates these
4 segments and creates an initial data. You drive that same map a second
5 time. It's not these multiple trips that you're relying on. It's the current trip
6 because it looks back at the data. It has the current position. It looks back.
7 It identifies the segment. And so, that kind of identification of the block
8 number is then the determination of the segment, which it then uses the data
9 that it has to calculate the power or speed that should be current -that it
10 should be traveling at the current time. Is that,-- am I,-- is that correct?

11 MR. CHOWDHURY: Your Honors, thank you for the question. And
12 I think it highlights a point of confusion by the Patent Owner as to our
13 positions within the -this- proceeding.

14 As mentioned during our earlier part of our presentation, Hongo has
15 two modes. There's a trace mode, which is the learning phase, and then
16 there's the playback mode, which is the active control phase. Hongo's
17 disclosures tells you that the trace mode is where the data that's being used
18 for adaptive cruise control are generated and stored within the driving block
19 database 20 and the driving history database 10. In the active control mode,
20 the data that was previously generated in the trace mode is then used to
21 evaluate the block during current travel.

22 And you, having this in mind, our answer is yes, when we are
23 mapping to the element of Limitation 1.a, specifically the segment of a
24 vehicle route, what we're mapping to is the play mode where Hongo is using
25 the current position coordinate of the vehicle as the vehicle is traveling on a
26 current route to then determine the block that should be retrieved from

1 driving block database 20. And our briefing makes that pretty clear. And I
2 believe it's clarified in the reply as well.

3 And I think Hongo's disclosure actually also makes that pretty clear.
4 The trace mode and the play modes are described in reference to elements
5 130 and 140. And there's an expressed disclosure in the play mode's -- the
6 part of the disclosure that's addressing the play mode that says that the
7 techniques used for identifying a block number, it can leverage similar
8 techniques as what is described in the reference in relation to the trace mode.

9 Did I answer your question, or did you have any follow-up questions
10 on that?

11 JUDGE DOUGAL: You answered it. Thank you.

12 MR. CHOWDHURY: Thank you, Your Honors. So, turning back to
13 the points that I wanted to make about Patent Owner's statements regarding
14 demonstrative slides 16 through 19, you know, these arguments focus on
15 characterizations of the techniques we've been talking about within Hongo.
16 You know, they focus on the alleged purpose and how they're used
17 to -- how, in their view, vehicles -- Hongo's vehicle position monitoring is
18 based on GPS data.

19 First observation I would make is that Patent Owner's characterization
20 of Hongo's blocks as merely static highway indicators is largely irrelevant.
21 Their entire line of argument presupposes two things: that a segment of a
22 vehicle route requires a final or intermediate destination, which we first
23 addressed earlier during this part of our presentation, and that a segment
24 must be dynamically generated as the vehicle moves. And as we know, we
25 don't see that in the claim language, and we don't see the disclosure limiting
26 the segment only to dynamically generated segments.

1 There's -- and as we've discussed, there's no mandate in Claim 1 or in
2 Claim 11 that the segment be dynamic or that it be tied to a destination. The
3 only requirement is that it is of a segment of a vehicle route. And Hongo's
4 driving blocks satisfy this on their face.

5 With that, I'd now like to address some points on Claim 6. I'd like to
6 respond to Patent Owner's assertion that Limitation 6.1 limits the phrase
7 determining a segment of a vehicle route in 1.a, and by extension, that
8 multiple route segments are required to be determined at a single time point.
9 This is shown in slide 24 of Patent Owner's demonstratives. We, Petitioner,
10 doesn't see Claim 6 in this way, and that's plainly because of the language
11 used by Claim 6.

12 The first important observation is that Limitation 1.6 refers to vehicle
13 route segment determination, not determining a segment of a vehicle route.
14 So Claim 6 doesn't reference the specific step that's recited in Claim 1. In
15 our view, the patent drafter clearly knew how to express narrow claim scope
16 when intended.

17 If you turn to slide 38 of Patent Owner's demonstratives, you see that
18 Claim 8 includes the word step within the wherein clause, which, through
19 antecedent basis, references Limitation 1.b.2 of Claim 1. Claim 8 also
20 includes the transitional phrase further comprises. This demonstrates that
21 the additional step recited in Claim 8, the step of communicating with a
22 remote database, was intended by the patent drafters to further limit the
23 specific step recited in Limitation 1.b.2.

24 By contrast, Claim 6 does not use this phraseology, nor does it tie
25 itself directly to any discrete step of Claim 1. And as we pointed out in page
26 24 of the reply, Claim 6 merely limits the determining operation implicated

1 in 1.a, that is the operation of segment determination. This doesn't impose
2 requirements on the specific step of the determining -- of determining a
3 single segment at a single time point. In other words, Claim 6 clarifies that
4 segment determination can include examples where multiple segments are
5 determined, but it doesn't transform 6.1 as to having a requirement that the
6 multiple route segments must be determined in one action or at one time
7 point.

8 This interpretation is consistent with the embodiments disclosed in the
9 specification. For instance, in Figure 5, we have a technique where the
10 vehicle's current position is used to identify new segments as the vehicle
11 progresses along a route. As the vehicle travels and enters new segments,
12 multiple route segments are determined sequentially, rather than all
13 segments being determined at a single time point. Hongo functions in the
14 same way, and our petition and our reply makes that pretty clear.

15 A few remaining comments on Claim 8, Your Honors asked a
16 question of how we -- how the petition was mapping to the remote database.
17 And we'd refer you to page 83 of the petition which we believe is pertinent.
18 It identified not only the database that's described in Newstrom but the
19 implementation where the database may be implemented on a server and
20 communicated wirelessly with the vehicle. The petition -- the prior art
21 expressly teaches that the database 20 may be implemented on a server and
22 has wireless communications, which in our view renders obvious a
23 communication with a remote database, i.e., a database implemented on
24 server that's remote from the vehicle.

25 With that, I'd ask if Your Honors had any further questions on the
26 topics we had just discussed.

1 Hearing none, Petitioner rests its case.

2 JUDGE O'HANLON: Thank you, Mr. Chowdhury.

3 We'll now hear from Mr. Herman. Let me set the --

4 MR. HERMAN: Thank you, Your Honors.

5 JUDGE O'HANLON: You reserved 15 minutes, but similar to
6 Mr. Chowdhury, you didn't use all of your argument in chief, but I'll set the
7 timer for 15 minutes, and if you need more, we can give you a few more
8 minutes. You may begin when ready.

9 MR. HERMAN: Thank you, Your Honor. As I've explained, in this
10 case, there are fundamental differences between the claims and the prior art.
11 The claims require determining a segment of the vehicle's route. The claims
12 require calculating and applying power to allow the vehicle to travel along
13 that determined segment at a calculated speed. And the specification
14 repeatedly and consistently explains that a vehicle's route includes a
15 destination. The route must be the path the vehicle is traveling to a final, an
16 intermediate, a predicted, or another such destination. The claim then
17 requires determining a segment of that vehicle route.

18 So this is not a new argument, as Petitioner noted in its rebuttal. It
19 represents a full 50 percent of Patent Owner's briefing in this proceeding,
20 both in its response and in its sur-reply.

21 Further, the '399 patent's specification does not say that a route is
22 simply the road the vehicle is on. The specification uses the road
23 somewhere approaching 50 times. The specification also uses the word map
24 repeatedly. If the inventors here wanted to only claim determining a road
25 the vehicle is on or where the vehicle is on a map, they would've done so
26 using the word road or map as they do throughout the specification. They

1 did not. Instead, the claims require determining a segment of the vehicle
2 route.

3 By referencing a route, the claims require determining a segment or
4 portion of the path the vehicle is following on the way to reach its
5 destination, not just the road the vehicle is on and not just where the vehicle
6 is on a static, unchanging map. The prior art here, however, has no idea
7 where the vehicle is going. It does not know the vehicle's route. Because it
8 does not know the vehicle's route, it cannot segment that route. Yes, Hongo
9 determines that the vehicle is on a mapped road, but the claims here require
10 more.

11 The claims say that a vehicle route segment must be determined.
12 Because of this, the claims require knowing where the vehicle is going, not
13 just where the vehicle is and not just that the vehicle is on a road.

14 So Petitioner also characterized the end of Hongo's block -- that's the
15 r2 coordinate -- as a destination during its rebuttal. It is not. Patent Owner's
16 expert explained, and Petitioner did not dispute that Hongo never determines
17 if its vehicle is heading towards block end r2.

18 The only thing that Hongo cares about is if the vehicle is somewhere
19 within the block. It does not determine whether the vehicle passed the start
20 of the block. It does not determine whether the vehicle is heading towards
21 the end of the block. The end of the block is not a destination, and it is
22 certainly not the vehicle's destination. Hongo's blocks are just how Hongo
23 chose to store its map data. They have no real or actual correlation with and
24 say nothing about where the vehicle is headed. This is why the blocks are
25 not segments of a vehicle route.

1 Moreover, Hongo limits itself to controlling the vehicle's speed for its
2 current position. Hongo is simply a cruise control system. As the vehicle
3 moves along, the vehicle adjusts speed for the vehicle's current position, and
4 this is the very type of system the '399 patent distinguishes itself from.

5 Indeed, there's a figure at the very beginning of the patent -- that's
6 Figure 1A -- depicting an analogous type of control for a cruise control
7 system. The '399 patent explains that this is not what its system does. It
8 does not simply control speed for now, as the vehicle moves along. Instead,
9 the '399 patent explains that it improves on that prior art by looking ahead.
10 It determines the speed and the power that should be applied for
11 optimization purposes for the route the vehicle will travel from where it is to
12 where it's going. And that concept is in the claims.

13 The claims require determining a segment of a vehicle route. The
14 claims require applying power to travel along that determined segment at a
15 calculated speed. And that concept is also discussed throughout the
16 specification. Specification says again and again that it is about
17 optimization for the vehicle's route. Yes, you can also control the vehicle's
18 speed for where it is now, but in all cases, the specification also controls for
19 where the vehicle is going. And Petitioner wants the Board to read all of
20 those concepts out of the claims.

21 Again and again, Petitioner says that the claims do not require
22 destinations and do not require prospective determinations, but in so doing,
23 Patent Owner submits that Petitioner not only ignores the words of the
24 claims -- they unambiguously do require those things -- but it ignores the
25 specification. The claims have meaning, and here, the claims require
26 determining a segment of a vehicle route. So, yes, by mentioning a route,

1 the claims do in fact require that the vehicle have a destination. And here,
2 the claims also require applying power to travel along the segment at a
3 calculated speed. So, yes, by mentioning travel along a route segment and
4 not just a single point in space, the claims do require prospective
5 calculations.

6 I would also like to remind the Board that there is no real dispute here
7 about how the prior art operates. Petitioner does not dispute that Hongo has
8 no idea where the vehicle is going. Petitioner does not dispute that Hongo
9 controls speed only for where the vehicle is now. Petitioner does not dispute
10 that Hongo's blocks are just static slivers of map. They have nothing to do
11 with the vehicle's route. They say nothing about where the vehicle is
12 coming from or where it is going. Petitioner also does not dispute Patent
13 Owner's evidence about why Hongo operates the way it does.

14 Hongo employs blocks to represent a vehicle's position because the
15 limitations of GPS systems at the time would make it too hard to find the
16 vehicle on a map otherwise. Petitioner does not dispute any of this even
17 though this is not how it described Hongo in the petition. Petitioner did not
18 explain why Hongo's actual operation satisfies the claims. But it still does
19 not dispute this now because it knows this is exactly how Hongo does in fact
20 work.

21 So, not only has there been a failure of proof since the petition relied
22 on an incorrect interpretation of Hongo, but this agreement regarding
23 Hongo's true operation crystalizes the difference between the prior art and
24 the claims. Hongo is fundamentally a system about just controlling the
25 speed of the vehicle for now. Yes, it abstracts the vehicle's positions to a 20-
26 meter range, but the position is still a position. It is where the vehicle is

1 now. And Hongo does this because it's using GPS, and GPS, at the time,
2 only allowed it to determine the vehicle's position with that degree of
3 precision.

4 The '399 patent, however, is a system that knows where the vehicle is
5 going. It chops that known route to a known place into pieces. Those are
6 the claimed segments that are determined, and the patent controls power and
7 speed for the pieces as the vehicle moves along. In Claim 1, you only need
8 to determine at least one piece of the route ahead and calculate power and
9 speed for that one piece. In Claim 6, you need to determine multiple pieces
10 of that route ahead and calculate power and speed for all those pieces. This
11 is not talking about a system like Hongo that just controls speed for current
12 position.

13 The '399 patent's claims unambiguously require knowing where the
14 vehicle is going and controlling power and speed for that route ahead. If this
15 were not the case, Claim 1's mention of speed for travel along the
16 determined segment would make no sense, nor would Claim 6 requirements
17 that multiple segments be determined make any sense. Respectfully,
18 mutating the claims as Petitioner proposes would amount to error.

19 And with that, I'd be happy to answer any remaining questions the
20 Board has.

21 JUDGE O'HANLON: I don't believe we have any more questions at
22 this time. Thank you, Mr. Herman.

23 Thank you to both counsel for your presentations today. The final
24 written decision will be issued in due course. And let's go off the record,
25 please.

26 (Whereupon, the proceedings at 2:37 p.m. were concluded.)

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