

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EXOTEC PRODUCT FRANCE SAS, EXOTEC NORTH AMERICA INC.,
and EXOTEC PRODUCT USA INC.,
Petitioner

v.

OPEX CORPORATION,
Patent Owner.

IPR2024-00850
Patent 11,472,632 B2

Record of Oral Hearing
Held: August 27, 2025

Before BART A. GERSTENBLITH, RICHARD H. MARSCHALL, and
ARTHUR M. PESLAK, *Administrative Patent Judges*.

APPEARANCES:

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The above-entitled matter came on for hearing Wednesday,
August 27, 2025, commencing at 1:00 p.m., at the United States Patent and
Trademark Office, 600 Dulany Street, Alexandria, Virginia.

PROCEEDINGS

(1:03 p.m.)

JUDGE GERSTENBLITH: Please be seated. Hello, everyone. We are here for oral arguments in IPR2024-00850, *Exotec v. OPEX*. I am Judge Gerstenblith, and appearing with me in-person today is Judge Marschall, and appearing by video is Judge Peslak.

Starting with Petitioner, will Counsel please step up to the podium and enter your appearance for the record?

MR. HAYNES: John Haynes with Alston & Bird, representing the Petitioner. And with me is Brian Ellsworth.

JUDGE GERSTENBLITH: Thank you, Mr. Haynes. And for Patent Owner, please.

MR. SHAW: Good afternoon, Your Honors. David Shaw from Desmarais LLP on behalf of Patent Owner OPEX Corporation. With me are my colleagues Sam Ha and Alex Landyshev.

JUDGE GERSTENBLITH: Welcome.

MR. SHAW: Thank you.

JUDGE GERSTENBLITH: We set forth the procedure for today's oral hearing in our order setting oral argument, which is entered in the record as Paper 31. In that order, we indicated that each party will have 60 minutes of total argument time. We have a court reporter who is creating a transcript of the hearing, and that transcript will constitute the official record of this hearing.

When we begin, we will start with Petitioner, who may present its case with regard to the challenged claims and grounds set forth in the petition. Petitioner may reserve time for rebuttal. Patent Owner may

1 respond to Petitioner's argument and may also reserve time for sur-rebuttal.
2 Petitioner may then present its rebuttal, followed by Patent Owner's sur-
3 rebuttal.

4 A few things to keep in mind. First, it's my understanding that we are
5 not discussing any information that the parties deem confidential. Mr.
6 Haynes, is that correct from Petitioner's side?

7 MR. HAYNES: That's correct, Your Honor.

8 JUDGE GERSTENBLITH: Okay, great. And Mr. Shaw, is that
9 correct from Patent Owner's side?

10 MR. SHAW: It is, Your Honor.

11 JUDGE GERSTENBLITH: Excellent. Thank you. The hearing is
12 open to the public, and there may be others listening, and there obviously are
13 others in the hearing room here today. Second, please be as clear as possible
14 during your argument regarding what slide you are referring to or what
15 exhibit or paper number, so that the record is clear and that we may follow
16 along. We have electronic versions of all the papers in the record, as well as
17 your demonstratives.

18 And when it's your turn, if you would please let me know how much
19 time you would like to reserve for rebuttal. I'm happy to remind you when
20 we reach that point. Also, I will have a timer set for the 60 minutes, so if
21 you end up going over the initial time you allot, you can keep going, but
22 you'll know how much you have of the total time left.

23 I anticipate that we will take two short breaks, one after Petitioner
24 concludes its opening, and another after Patent Owner concludes its opening
25 argument. Are there any questions about the process for today, or any other
26 questions from Petitioner's side, Mr. Haynes?

1 MR. HAYNES: No, Your Honor.

2 JUDGE GERSTENBLITH: Thank you. And are there any questions
3 about the process for today, or any other questions from Patent Owner's
4 side?

5 MR. SHAW: No, Your Honor.

6 JUDGE GERSTENBLITH: Thank you very much. With that, Mr.
7 Haynes, when you are ready, you can come up to the podium and let me
8 know how much time you would like to reserve, and start whenever you're
9 ready.

10 MR. HAYNES: Thank you, Your Honor. I would like to reserve 20
11 minutes for rebuttal, if I could. May I begin, Your Honor?

12 JUDGE GERSTENBLITH: Yes.

13 MR. HAYNES: May it please the Board. This is a road map of what
14 I'm going to cover today. The good news is there's not a ton of disputes
15 between the parties, but I would like to start with just an overview of the
16 challenged patent. I know Your Honors are familiar with that, but there are
17 a few key points I think are worth noting before we get into the nature of the
18 disputes. I'll then go over the disputes and respond to some of the specific
19 challenges that have been raised by the other side thus far.

20 So with that, let me start with just the patent itself. And I highlight
21 the cover here primarily just to explain to the Court, this patent closed prior
22 to 2019. By that point in time, autonomous robot systems and warehouses
23 to pick and place objects were widely deployed. There were lots of systems
24 out there, and the basic concepts for how you do the basics of picking and
25 retrieving items from shelves were well known, both with single-robot
26 systems and for systems that use multiple robots with specific functions.

1 The '632 patent is directed towards a specific implementation of a
2 warehouse system that uses a robot with three-dimensional travel
3 capabilities. It can travel on the warehouse floor, it can travel up the storage
4 shelves and pick and retrieve an item, then it can come down and go on the
5 floor. It also discloses that in order to reduce congestion, you can travel
6 underneath the shelves so that you have more pathways on the floor. So you
7 can travel underneath and also along the row of the shelf and then turn while
8 underneath and come out. It's that combination of elements that they got a
9 patent on.

10 It's noteworthy that looking at this combination of elements, it was the
11 entirety of the combination that they got the claims allowed on, but their
12 focus was on the ability of having this three-dimensional travel. This
13 concept of traveling underneath the shelf is not new. They weren't the first
14 ones to say, if you want more travel pathways on the floor, travel under a
15 shelf. That was already known at the time.

16 If you look at the -- when it talks about how it did that, the '632 patent
17 doesn't get into the details of the specific routing algorithms that are used or
18 the specific collision avoidance mechanisms that are used. It talks in general
19 terms about available sensor technology and basics of how you go about
20 routing along the floor and then traveling vertically. But it doesn't get into,
21 the point of novelty is not some particular implementation of a new and
22 novel sensor technology that would allow you to go underneath the shelf. It
23 doesn't talk about that at all. It talks about available sensor systems.

24 It even says you could have an autonomous robot, which is routing
25 itself, or semi-autonomous robot that communicates with the central
26 controller to perform routing functions in concert with the robot. But again,

1 those basic concepts are not things that they claim to be novel. Those are
2 things that were already out there, and the patent gives examples of
3 technologies that were known that were already out there to do these things.

4 And if you look at the notice of allowance again, it summarizes that
5 it's the combination of the three-dimensional ability to travel and the notion
6 of traveling under the racks, turning while under the racks, and crossing
7 aisles, basic concepts. But again, nothing in the claims or the reason why
8 they were allowed that is directed to some novel feature or some novel
9 sensor that enables that travel. Enabling it was something that everybody
10 knew how to do.

11 So that brings us to the disputes. And I'm going to start with what's
12 not disputed, because this is a good case and somewhat unique, in that
13 there's not really a fight over the fact that every single element of the claims
14 is specifically disclosed in the combination of Raizer and Hangzhou. Every
15 single element. And if you look at the full amount of the disclosure, every
16 element of the claims is there. So they don't dispute that the elements of the
17 claims and performing each step of the method in the combination is
18 disclosed.

19 They also don't dispute that Raizer itself discloses a robot that can
20 travel in three dimensions. A robot that can travel across the floor, a robot
21 that can climb vertically, and a robot that has the ability to go anywhere on
22 the warehouse floor and to turn 360 degrees around a vertical axis. So the
23 capabilities of this robot in Raizer can do everything in the claim method.
24 You know, it's changing. It already has full capability to do all of that.

25 JUDGE GERSTENBLITH: Counsel, just a small reminder to call out
26 the slide number --

1 MR. HAYNES: I'm sorry, Your Honor.

2 JUDGE GERSTENBLITH: Thank you.

3 MR. HAYNES: The one reminder that I missed. Speaking from
4 Slide 9 at this point.

5 JUDGE GERSTENBLITH: Thank you.

6 MR. HAYNES: There's also no dispute that Hangzhou talks about a
7 floor robot that travels underneath the rows, can turn underneath the rows,
8 and cross aisles. And Hangzhou talks about how that's good. You want that
9 flexibility. You want the ability to have additional travel pathways to
10 maximize the search space so that known programs can come up with routes
11 that avoid collisions and reduce congestions where you have to make one
12 robot wait for something else.

13 And what we're relying on in Hangzhou is not the shelf designs or
14 anything fancy. We're relying on the fact that it discloses the knowledge
15 that a person of ordinary skill in the art would have already been aware of,
16 that maximizing travel routes on the floor is good, and it tells you lots of
17 different routes that you can use. But what Hangzhou discloses, it doesn't
18 say that that's somehow unique to that two-robot system that Hangzhou has.
19 It talks about what the floor robot can do. And that's what we're relying on.

20 The robot in Raizer doesn't need a separate robot. It has three-
21 dimensional capability. So all it needs to do is route on the floor to go any
22 place in the warehouse, as the patent explicitly explains. So --

23 JUDGE GERSTENBLITH: Counsel, when you say, as the patent
24 explicitly explains, you mean as Raizer?

25 MR. HAYNES: As Raizer explicitly explains.

26 JUDGE GERSTENBLITH: Thank you.

1 MR. HAYNES: With respect -- I'm on Slide 10 now. With respect to
2 what Patent Owner disputes, they say, well, even though everything was
3 known, even though Raizer and Hangzhou were in exactly the same space,
4 even though they're both automated warehouse systems, that nobody would
5 have thought of combining these things together. They say, even if you
6 were going to combine them together, that there's no reasonable expectation
7 of success. And then they say that in our petition, we didn't disclose in
8 sufficient detail what that combination would be.

9 So I'll take each of those in turn. But the thing I want to keep in mind
10 is these criticisms are not claim features, and there's nothing specific in the
11 teaching of the references that supports any one of these points. And they
12 also go against common sense, as well as the knowledge of a POSITA at the
13 time.

14 So going to Slide 10, let's talk first about motivation to combine and
15 what the actual combination is. There's been a fair bit in Patent Owner's
16 pleadings that states that it's not clear what the combination is. So I think it
17 is clear in our petition. But just to eliminate any doubt, we're talking about
18 the system of Raizer with the fully three-dimensional capable robots of
19 Raizer combined with the robots can go anywhere in the floor, in Raizer, and
20 Hangzhou just provides additional teachings of routing on the floor of a
21 floor robot. That's what we're relying on Hangzhou for.

22 And for the specific fact that it calls out in both Raizer and Hangzhou
23 that hiring multiple -- that optimizing the floor space to allow for more travel
24 paths improves efficiency, reduces congestion, and helps avoid collisions.
25 So we'll get to it with some of the dependent claims at the end, but there's no
26 real fight about -- we're not saying that we're relying on Hangzhou's robots

1 or the specific shelf design of Hangzhou. We're just saying Hangzhou
2 discloses that you would raise the lowermost shelf to allow travel underneath
3 the shelves of a robot carrying a package.

4 JUDGE GERSTENBLITH: Counsel, you're specifically talking about
5 Claim 1, I think, right? Because in Claim 5, Petitioner relies on Hangzhou
6 for more than just that, right?

7 MR. HAYNES: So in Claim 5, we rely on Hangzhou for all the steps
8 of the method, but as well as the teaching in Hangzhou that you can turn the
9 robot underneath the rack. Raizer itself says you can go anywhere on the
10 floor. In terms of designing that lower rack space or modifying or building a
11 new rack that allows the robot to travel and turn, that's well within the level
12 of ordinary skill. But Hangzhou tells you how to do it and gives examples
13 of how to do it. We do rely on Hangzhou for that.

14 JUDGE GERSTENBLITH: Okay. Thank you.

15 MR. HAYNES: Now, I mentioned -- on Slide 13 now. I mentioned
16 that Raizer specifically tells you, you can go to any location on the floor.
17 And we've called out in the slide the specific part where it says that. And we
18 also call out that in Raizer, it tells you why you want to do that. And this is
19 not a new concept that was first recognized in Raizer or Hangzhou or even
20 back in 2016 in the Gordon reference.

21 This is a concept of maximizing travel paths because a known goal in
22 a warehouse system is you don't want the robots to stack up, slows things
23 down, and you don't want them to run into things. Those are basic principles
24 and they're common goals across any warehouse system. But there's no
25 doubt that that was a goal because Gordon says it explicitly, Raizer says it
26 specifically in the passage here on Slide 13, and Hangzhou also says that

1 that's a specific goal.

2 Looking at Slide 14, another important thing to note about Raizer is it
3 contemplates that its system is flexible and adaptable. It's easily added to
4 existing warehouses, but it can also be put in any new warehouse. And in
5 terms of -- we're going to talk about some of the criticisms about the ability
6 to implement the Raizer system in a warehouse. You don't have to modify
7 the whole warehouse to be able to travel under one row or to be able to turn
8 in one place under that row, or to be able to cross the aisles in one place.
9 You can modify just that pathway.

10 And Raizer explicitly says, we're flexible. Our robot has full
11 movement capability and it can go any place on the warehouse floor. So it
12 explicitly teaches that flexibility, and it's that flexibility that allows you to
13 put it in a new warehouse, or to put it in an existing warehouse in a retrofit
14 with minimal changes.

15 JUDGE GERSTENBLITH: Counsel, does Petitioner actually argue
16 that Raizer teaches this limitation 1D1, driving the first vehicle along a path
17 under a first one of the racks?

18 MR. HAYNES: We don't argue that there's a specific disclosure of
19 that in Raizer. However, Raizer says it can go any place on the floor and in
20 any existing warehouse. And if an existing warehouse has shelves above the
21 floor that fit the robot and the package, you can drive underneath it. Raizer
22 says that. It doesn't specifically teach that you should do that.

23 JUDGE GERSTENBLITH: But my question is, I think you answered
24 it, that Petitioner does not make that argument that Raizer teaches this or
25 suggests this.

26 MR. HAYNES: Not as an explicit disclosure, apart from the fact that

1 it can go anywhere on the warehouse floor and be used in any existing
2 warehouse.

3 JUDGE GERSTENBLITH: So there's a section in the petition on this
4 limitation on page 20. And the fourth paragraph says, should Raizer be
5 determined to not disclose driving a vehicle along a path under one of the
6 racks, a POSITA would have looked to Hangzhou. But I don't actually see
7 an argument being made that Raizer does disclose this. And I'm
8 understanding what you're saying that it doesn't specifically disclose that,
9 and that Petitioner doesn't make an argument on this limitation based on
10 Raizer alone.

11 MR. HAYNES: Not as a full disclosure of the limitation. The
12 teaching of you can go anywhere on the warehouse floor, combined with the
13 teaching of Raizer that you can put it in any warehouse, a POSITA would
14 understand in our view that you could travel underneath the row, but it
15 doesn't specifically teach that. Hangzhou specifically describes that exact
16 path of travel.

17 JUDGE GERSTENBLITH: Okay, thank you. I just wanted to
18 clarify.

19 MR. HAYNES: With respect to this notion of traveling underneath
20 shelves, both parties' experts, both Dr. Spenko and Dr. Singhose, in the
21 excerpts we show on Slide 15, explained that going underneath the shelves,
22 that was known. And the testimony from both of them was about the
23 Gordon reference. And that Gordon reference specifically explained that for
24 further flexibility, you can raise the lower most shelf off the floor to allow
25 travel of a loaded robot underneath the shelf. That provides additional
26 flexibility. And that's in 2016.

1 So a person of ordinary skill in the art was already aware of, one, the
2 desire to have flexible travel pathways, and two, that one of those pathways
3 would be going underneath shelves.

4 JUDGE GERSTENBLITH: Counsel, I apologize. I'm going to pause
5 you for one second because I'm told that Judge Peslak cannot see the
6 presentation. So I'm being asked if you could disconnect the laptop from the
7 HDMI cable and then just reconnect it. We'll see if that makes a change.
8 And he can follow along with the slide numbers. So if it doesn't work, we're
9 okay. And I apologize for stopping you.

10 MR. HAYNES: That's okay, no problem. I hope we didn't make it so
11 he can't see.

12 JUDGE GERSTENBLITH: Judge Peslak, is that any better?

13 JUDGE PESLAK: Yes, I can see it from there.

14 JUDGE GERSTENBLITH: Okay, great. Great, thank you very
15 much. You can start back whenever you want.

16 MR. HAYNES: Coming back to the motivation to combine, both
17 Hangzhou and Raizer are directed to warehouse systems to pick and place
18 items on shelves using autonomous or semi-autonomous robots that navigate
19 along the floor to load or retrieve items from the shelf. So we're talking
20 about exactly the same field, exactly the same design goals, and those design
21 goals, as I've already said, are specifically called out in both references.

22 The main design goal, and this is a design goal of autonomous robot
23 systems, or semi-autonomous systems, is to avoid congestion and reduce
24 traffic jams and avoid collisions. When you've got robots traveling on the
25 floor, they need to not run into each other, and you need to optimize it so
26 that they're not stacked up all trying to go to the same place when there's

1 another route that could avoid a traffic jam.

2 So that flexibility is a known goal, and it's recognized in both Raizer
3 and Hangzhou. And that's the motivation as to why you would want to
4 consider all available travel paths using the robot of Raizer, which is capable
5 of all available travel paths.

6 Now, with respect to the specific teachings of Hangzhou, and again, a
7 person of ordinary skill in the art would have considered ways to reduce
8 collisions and congestion on Raizer alone. But when you get to Hangzhou,
9 any doubt that a POSITA would have known about and considered travel
10 paths underneath the rack turning underneath the rack and crossing aisles to
11 get additional flexibility from a floor robot is specifically disclosed in
12 Hangzhou.

13 And we don't dispute. Hangzhou has a different system. It's got a
14 two-robot system, and it's got a specific different way of sort of having a
15 two-channel system within the rack. We're not saying that you need that
16 rack system. We're looking at Hangzhou solely for the teaching that to
17 increase flexibility, to maximize the search space, using the words of
18 Hangzhou, that you would want to consider all available travel paths and
19 then do your route planning to maximize the use of all available paths,
20 including traveling under the shelves, going across a row, turning and going
21 across aisles, which is what the method of the claims are directed to.

22 Dr. Spenko explained, and I think you even read a similar passage
23 from our petition on Slide 19, that a person of ordinary skill in the art who is
24 looking to implement Raizer in a warehouse, he's going to look to the
25 knowledge of the art of maximizing those travel paths following the express
26 goals of Hangzhou to reduce collisions. And again, the floor robot in

1 Hangzhou is what is talked about with these travel paths.

2 And the collisions that it encounters may be a little different. There
3 you do have a lifting robot that's moving across the aisle. But the idea of
4 having maximum travel paths to avoid obstacles from a floor robot is fully
5 disclosed in Hangzhou. It teaches exactly how to do it, it gives a bunch of
6 different routing options, and it teaches that you should maximize the travel
7 space.

8 The fact that there are lifting robots that you're avoiding with the floor
9 robots there is irrelevant to this concern, because it doesn't say that you only
10 need flexibility on the floor if you have two different kinds of robots. The
11 flexibility on the floor is to avoid collisions. And yes, because it has lifting
12 robots, it talks about how to avoid those collisions, but it's not limited to
13 that. And there's nothing in Hangzhou that suggests at any point that you
14 would not consider such paths in a one-robot system.

15 There's no teaching away whatsoever that these additional travel paths
16 are somehow not available if you're using just one robot. You're still going
17 to have the opportunity for collisions when you're coming out of the aisle,
18 you're still going to have collisions as you're getting to the aisle, and
19 congestion as you're getting to aisles. So having those additional travel
20 paths applies with equal force to Raizer.

21 Slide 20 is just some examples of the different travel paths in
22 Hangzhou. I don't think there's any debate that Hangzhou discloses all the
23 claimed travel paths as well as some additional ones as well. So I think in
24 terms of the disclosure that such paths were known and available, I don't
25 think that's in dispute at all. The only question is would a person that's
26 implementing Raizer have considered travel paths to maximize the search

1 base? We submit that's a matter of common sense, the knowledge of a
2 person of ordinary skill in the art, and expressively taught in Raizer -- I'm
3 sorry, in Hangzhou.

4 Going to Slide 22, I'm going to address some of the specific
5 arguments that I think we're going to hear about we saw in Patent Owner's
6 response. The first one is that the combination of Raizer and Hangzhou runs
7 counter to Raizer's teaching that you want to be able to implement it in
8 existing warehouses.

9 The first point on this is that yes, Raizer does say that, but it also says
10 you can implement it in new warehouses. So this concern only applies if
11 you're retrofitting. That's the starting point. If you're using in a new
12 warehouse, this argument goes away entirely. In a new warehouse, it has no
13 application as to whether or not in that implementation of Raizer it renders it
14 obvious.

15 It's also noteworthy on Slide 23, we've cited the portion of Raizer
16 where it, in paragraph 112, where it specifically says it can be put in a new
17 warehouse or a retrofit warehouse. But Hangzhou also recognizes the same
18 thing. It says you can do this in a new warehouse or you can do it in a
19 retrofit warehouse.

20 So the main attack here is that somehow implementing this in an
21 existing warehouse would be cost prohibitive, that it would cost way too
22 much to redesign a whole warehouse to be able to implement these travel
23 paths. But that ignores the teaching of Raizer. Raizer says you can
24 implement this in any existing warehouse. It also says you can implement it
25 aisle-by-aisle or row-by-row, piece-by-piece. And the concept of modifying
26 the lowermost shelf does not require a redesign of the whole warehouse.

1 And again, the claims don't say you have to have the entire warehouse
2 that allows travel under every shelf or an entire warehouse that allows
3 crossing the aisles at every single point. You just have to do it once. You
4 just have to travel under part of a shelf. Making that modification to allow
5 an additional travel pathway to reduce congestion would not be expensive.

6 And we have testimony from Dr. Singhose, who talks about when
7 you're looking at designing these warehouses, you have a lot of flexibility.
8 You've got to look at the size of the packages to see if, you know, your
9 shelves have got to fit the packages, first of all. And then on the lower shelf,
10 you can look at it and say, how much space do I need to allow my robots to
11 fit through with the package?

12 And you might not do it with your biggest packages. It might not
13 make sense to have your big packages routed underneath that way. But for
14 some packages, where there's clearance, or where you can create an aisle
15 across different shelves, it makes perfect sense to increase additional
16 pathways in order to reduce congestion and avoid everybody taking the same
17 path and having to wait their turn.

18 And Dr. Singhose explains that. His argument about retrofitting is
19 that well, if you had to go in and change things, that would be too expensive.
20 But the assumption there is that you have to redo the whole warehouse. His
21 claim doesn't talk about that. It talks about just having one path that goes
22 under the aisle partway, turning, and crossing aisles. And that would not
23 require a whole warehouse modification. In fact, an existing warehouse, if
24 it's got clearance, you could just do it along one aisle where there's already
25 clearance there because the packages that were originally there were big
26 enough to allow it.

1 The next argument against the combination is that Hangzhou teaches
2 away from single-robot systems. And there's two points on that. The first
3 one is they're flipping the argument on its head. I'm on Slide 25, sorry.

4 JUDGE GERSTENBLITH: Hang on one second. Judge Peslak, go
5 ahead.

6 JUDGE PESLAK: I just have a question about Claim 11. Does
7 anything in Claim 11 actually require the robot to drive under the shelves?

8 JUDGE GERSTENBLITH: Were you able to hear that?

9 MR. HAYNES: I think so. I think your question was, does Claim 11
10 require the robot to drive under the shelves?

11 JUDGE PESLAK: Yes.

12 MR. HAYNES: Yes. That is correct, Your Honor. And my point
13 was, you can drive under the shelves, but it doesn't say for what length. And
14 it doesn't say that you have to drive under every shelf. So if you wanted to
15 implement Raizer in a warehouse, you could modify the lowermost shelf of
16 one shelf to allow it to drive under the shelf and turn and then cross aisles
17 and go across other things by traveling underneath.

18 JUDGE PESLAK: Okay, thank you.

19 MR. HAYNES: You're welcome. I'm on Slide 25 now. The other
20 argument they make is that Hangzhou teaches away from single-robot
21 systems. And I think that's wrong both as a factual matter and it also
22 misunderstands the combination.

23 So, on Slide 26, as a factual matter, Hangzhou talks about both single-
24 robot systems and dual robot systems. And it points out some disadvantages
25 from both types of systems and explains how its two-robot system is better
26 than those prior art systems. But it doesn't say single-robot systems are bad,

1 and it certainly doesn't say that you cannot use the additional travel
2 pathways of Hangzhou in a floor robot. And the combination that we're
3 relying on here is the floor robot of Raizer that has three-dimensional travel
4 capability combined with the explicit disclosures in Hangzhou of ways to
5 optimize floor travel of that robot.

6 And Hangzhou does not say anything about you only need to go under
7 shelves when you have two-robots. There's no teaching whatsoever that
8 suggests that the problems of congestion and collisions only arise because
9 you have two-robots. And that would make no sense. This is a common
10 goal in this area to avoid collisions and reduce congestion.

11 And Dr. Singhose, in terms of what Hangzhou said, he explicitly
12 acknowledged that Hangzhou is talking about specific examples. And
13 nowhere did he say you should never have a one robot system. But again, I
14 think the bigger point is nowhere did it say you should not consider
15 additional travel paths in a one robot system.

16 So if you're starting with Raizer, which is the system we are starting
17 with in our combination, you would start with the Raizer system. And it's
18 teaching that it can go anywhere on the warehouse. And then when you're
19 doing your route planning, you would consider ways to optimize that. And
20 those ways are expressly set out in Hangzhou. And there's nothing in
21 Hangzhou or Raizer that suggests that you could not implement those travel
22 paths using Raizer's robot.

23 That brings us to reasonable expectation of success. This argument is
24 made a little bit with the motivation in mind and a little bit on reasonable
25 expectation of success. But it focuses on one line in Raizer that talks about a
26 survey mode where the robot is configured to do a mapping of the

1 warehouse to create a map of where the shelves are and what travel paths
2 there might be.

3 The argument from the Patent Owner is that in that embodiment, it
4 would be difficult to do a survey mode where the vehicle is running
5 underneath the shelf because there would be multi-path effects that would
6 make that very challenging.

7 First point on this argument is none of the prior art talks about this.
8 Their expert manufactures it and says, this will be really hard. But the most
9 important thing to understand about this argument on survey mode is that's
10 on the claims. Claims don't talk about how you have to get a map of the
11 warehouse. And Raizer explains that you can get -- sorry, I'm going to Slide
12 30 now.

13 Raizer explains that you can preload the survey -- the structure of the
14 warehouse and available routes into the robots. And what the claim is
15 directed to is once the robot is moving around, you have to drive it certain
16 ways. But this idea that you would have multi-path effects in survey mode
17 that would make that impossible is, one, not required by the claims. And
18 two, Raizer itself says you can preload that.

19 And it says that that survey mode is in some embodiments. It's not a
20 requirement that you always do it with all robots. You can have one robot
21 that you configure or you can manually enter the warehouse layout. And
22 Raizer specifically talks about you can have a central controller that can help
23 with routing, the RTTM. And it also talks about the robots themselves are
24 self-learning. They can learn on their own. And there's no difference for
25 those robots being able to drive around the floor and detect obstacles, other
26 robots or posts or whatever, versus driving under the rack once it's been

1 given the route pathway.

2 And so this idea that the survey mode would tell the person you can't
3 use the travel pathways assumes, one, falsely, that you need to do a survey
4 mode. That's not required by the claims or Raizer. And two, once you're not
5 in survey mode, there's no dispute that the Raizer robots can travel across the
6 floor. They can detect obstacles.

7 And what we have on Slide 30 is the '632 patent doesn't talk about
8 specific ways to route or specific mapping or anything like that. In fact, it
9 discloses a variety of conventional sensor technology that you could use for
10 this mapping. That same variety of sensor technology is disclosed in Raizer.
11 It talks about RFID, optical sensors. It talks about triangulation using
12 anchor point navigation. All of those things are specifically disclosed in
13 Raizer as sensor options.

14 And the reason why both patents do that is because neither patent
15 claims to have invented a novel way to drive the robot. Once you have the
16 robot and its capabilities, it's well within the person of ordinary skill to
17 program those to take certain paths. And nobody disputes that point.

18 JUDGE MARSCHALL: Well, I would say Patent Owner disputes it
19 to the extent that there's proprietary software in Raizer that's not available
20 and part of the prior art. And that one of ordinary skill in the art would not
21 be able to write that code themselves, correct?

22 MR. HAYNES: They do make that argument. Let me address that
23 point directly. With respect to this proprietary software argument, the
24 argument -- they're taking patents that are talking about whether something
25 qualifies as prior art where if you're relying on a particular disclosure of
26 what that software did that was claimed, that might be relevant. But it's not.

1 Yeah, they have proprietary software to route the robots. But that fancy
2 software to do advanced routing, everybody's going to write their own
3 software for that.

4 And the fact that their system was proprietary doesn't mean that you
5 can't take the teaching of Raizer and that robot and write software to travel
6 the simple paths that are claimed in the method claim. And the fact that it's
7 proprietary doesn't mean that it's somehow secret or a person of ordinary
8 skill of the art wouldn't have been able to write the software. And on Slide
9 32 --

10 JUDGE PESLAK: Excuse me.

11 MR. HAYNES: Yes.

12 JUDGE PESLAK: Patent Owner's expert says that PhDs have a hard
13 time writing this kind of software. What's in the record on your side to
14 dispute that a person of ordinary skill of the art would actually be capable of
15 writing the software?

16 MR. HAYNES: So, there's two things. First of all, those statements
17 about a PhD not being able to write the software is focused on the survey
18 mode. And their expert's view that in survey mode you would have
19 complicated multi-path effects, and that writing software to avoid those to
20 do the mapping mode would be overly complicated.

21 Our expert, Dr. Spenko, explained in his deposition and in the
22 declaration that he adopted from Dr. Derby that -- well, not the Derby
23 declaration because this issue of multi-path effects wasn't raised there. That
24 these multi-path effects, they arise, the people know how to deal with them.
25 But again, the point about PhD wouldn't be able to do it, that's in the
26 mapping mode, in the survey mode that isn't claimed.

1 What Dr. Singhose said when you started talking about could you
2 write software to drive the robot as claimed in these patents to go under the
3 aisles and travel, his testimony is on Slide 32. He said, a person of ordinary
4 skill in the art could write that software. And Dr. Spenko said the same
5 thing.

6 So the complicated mapping mode and dealing with multi-path
7 effects, they say that that's something people couldn't have figured out. We
8 dispute that. But with respect to the claimed travel pathways, both experts
9 agree that's something that was well within the person of ordinary skill in the
10 art and you wouldn't need anything proprietary to figure that out.

11 And frankly, they have to say that because the '632 patent doesn't give
12 you any special techniques for figuring out how to wrap. It's assumed that
13 people know how to do that in the '632 patent. It's assumed that you know
14 how to do that in Raizer for the same reason. A person of ordinary skill in
15 the art would have known how to do it as both experts explained in Slide 32.

16 JUDGE MARSCHALL: I had a question on survey mode.

17 MR. HAYNES: Yes.

18 JUDGE MARSCHALL: I believe you're saying, well, it's not
19 claimed, so it's less relevant. But even if it's relevant to motivation, that it's
20 not required by Raizer itself. Is that accurate?

21 MR. HAYNES: That's correct. In Raizer it says in some
22 embodiments. That's in paragraph 34 of Raizer, where it talks about in some
23 embodiments you can have this survey mode. But it also says that you can
24 preload the robots with the map of the warehouse.

25 And Raizer has multiple different disclosures about what you can do.
26 You can have a controller that's communicating where the controller is

1 doing the routing, you can have the robot do the routing on its own, or they
2 can communicate with each other so that the pathways are given by the
3 controller and the robot then senses things along the way. So it discloses the
4 full gamut of what to do.

5 The fact that they wrote their own software to implement that doesn't
6 mean that somebody else couldn't write software to do the basic functions
7 that are coming here. And the only complaint really in survey mode is that
8 in survey mode, according to Dr. Singhose, that would be too hard because
9 of these multi-path effects. We disagree with that. But regardless of
10 whether you agree or disagree with that, it's irrelevant because hunch don't
11 require it.

12 And on motivation, there's no lack of motivation to route things
13 underneath shelves because it might be harder to do mapping. First of all, I
14 don't know that you would need to map under the shelves as long as you
15 mapped the pathways. So the notion that you would have to use a robot to
16 map the whole warehouse and every possible place the robot can go, that's
17 not -- Raizer doesn't say that, and it's also not required by the '632 patent or
18 anything else.

19 And the notion that a person of ordinary skill in the art couldn't figure
20 this out, if that's true, then the '632 patent didn't tell you how to do it.
21 There's nothing in the '632 patent that tells you how to do, address the multi-
22 path things that they're talking about. The '632 patent is silent about how
23 you get the warehouse layout. And the reason for that is they're talking
24 about driving the robot, and that's something that a person of ordinary skill
25 in the art knew how to do.

26 The final point from the Patent Owner is about reasonable expectation

1 of success. And part of this is based on the survey mode. But there's also an
2 argument that you wouldn't have expected to be able to implement Raizer
3 and stay true to the goals of being able to retrofit, keeping expenses down,
4 those types of things.

5 But what we're looking at is what a person of ordinary skill in the art,
6 having read Raizer, having been told we are flexible, you can implement us
7 one piece at a time, you can put us in existing warehouses, any existing
8 warehouse, would they have expected to be able to route robots both
9 underneath the shelf and turn and cross aisles? That's the question. Is there
10 a reasonable expectation to be able to drive a robot that can do those things?

11 Raizer's robot, it is undisputed, can do those things. It can drive
12 anywhere on the warehouse floor. It's capable of turning. And so in terms
13 of would you have expected it to succeed, there's no reason to expect it
14 wouldn't succeed. That is basic routing that is assumed in both Raizer,
15 there's a lot of examples about known ways to do routing, but it's also
16 assumed in the '632 patent, right? Everybody assumes you know how to
17 drive the robots.

18 So once you're saying I need more travel pathways, I want to optimize
19 my floor space, I want to minimize collisions, do you have an expectation of
20 success that you can program the Raizer robot to do that? Absolutely. And
21 the survey mode does not take away from that or teach otherwise in any
22 way, shape, or form.

23 On Slide 34, coming back to the multi-path, Dr. Singhose recognizes
24 when you're not talking about survey mode, when you're just driving the
25 robots around the floor, he says a person of ordinary skill in the art would
26 understand that multi-path effects and they would understand that if they're

1 going under the shelf, they would not allow a sensor that could suffer from
2 multi-path effects.

3 Well, Raizer gives you lots of different sensors that you can use when
4 you're going underneath the shelf. And Dr. Singhose, Patent Owner's expert
5 says, you can use other sensors to avoid these multi-path effects when you're
6 driving around. He focused on the problem really only in survey mode,
7 because in survey mode, you know, use the Roomba vacuum cleaner
8 example, when you're trying to map out every square inch of the floor space,
9 multi-path effects can be a problem.

10 We don't think that's a problem that a person of ordinary skill in the
11 art would have been able to overcome, but certainly a person of ordinary
12 skill could have mapped out where the shelves are in the warehouse and
13 programmed a robot to do that. That's well within the level of ordinary skill.
14 And again, how do we know that? Because --

15 JUDGE PESLAK: Counsel, can you just explain for me what multi-
16 path effect means?

17 MR. HAYNES: So the concept is in certain types of sensors, and I
18 think LiDAR being one of them, when you are moving and trying to map
19 your surrounding areas, you're essentially shooting out light, and that light
20 gets reflected back, and you use those reflections to determine where things
21 are. Multi-path effects are when you shoot that light out, it may bounce off
22 of other things, or if it bounces off of a surface that's particularly reflective.
23 I think some of the examples in the textbook that Dr. Singhose cast were
24 almost like a disco ball.

25 First of all, that's not a problem you're going to have in a warehouse,
26 but even, you know, you could have some reflection such that there's a

1 scattering of the light, or it gets bounced off of more than one surface so that
2 it has a hard time identifying what sent the light back to it. It might be
3 confused. But that concept -- I'm sorry, did you have a question, Judge
4 Peslak?

5 JUDGE PESLAK: The '632 patent discloses using LiDAR
6 triangulation, and then some other LiDAR sensors. And so what is Patent
7 Owner's issue with Raizer? Because I also understand using Raizer,
8 wouldn't there be a distinction between LiDAR and what's disclosed in the
9 '632 patent? Am I missing something here?

10 MR. HAYNES: I'll let Patent Owner give their own answer. But
11 from my perspective, Your Honor, there really isn't a difference, which is
12 why Dr. Singhose doesn't focus on the travel of the robot on the warehouse
13 floor. He focuses only on the survey mode, because multi-path effects are
14 going to exist, right? Sensors have to deal with multi-path effects. That's
15 just a fact. But the fact is, known sensors know how to deal with that. And
16 even the textbook that Dr. Singhose relies on talks about ways to deal with
17 multi-path effects, either by focusing on the first received or the shortest
18 distance.

19 And so their argument, you know, you're absolutely correct, Judge
20 Peslak, their '632 patent uses LiDARs. It's going to have multi-path effects,
21 but that doesn't mean you can't do it. It just means you've got to deal with
22 multi-path effects. And for that reason, Dr. Singhose didn't focus on just
23 driving a robot around the floor. He said, well, when you're trying to do a
24 mapping mode, where you're actually trying to map the exact area
25 underneath a rack, you would have more multi-path effects, which would be
26 more problematic.

1 Our response to that is, people know how to deal with that, but also
2 that survey mode is irrelevant to this discussion, because you don't have to
3 do a survey mode to practice the patent.

4 And this testimony from Dr. Singhose that's shown on Slide 34, he
5 was being asked in the context of the '632 patent. You know, he's like, look,
6 a person of ordinary skill in the art would use sensors and be able to deal
7 with these multi-path effects when you're driving the robot around. So
8 there's really no dispute on that fact. His only point was, it's harder if you're
9 trying to do a mapping of the entire warehouse where you're traveling under
10 the rack because you get more multi-path. And that's what he said was
11 particularly difficult.

12 Frankly, a lot of the things that he pointed out with multi-path, you
13 know, there are ways to deal with that in a warehouse that people know how
14 to deal with it. One, there's no difference between a reflection of a shelf leg
15 when you're driving down an aisle than there is a reflection of a shelf leg
16 when you're underneath it. The only difference is you've got a shelf above
17 you that you've got to account for as well. But people of ordinary skill in the
18 art knew how to deal with multi-path effects and could have dealt with them.

19 We've been talking about this on Slide 35. This is the textbook they
20 used with some examples of multi-path effects. But as we pointed out in our
21 papers, in this example, multi-path effects were out there and were known,
22 and people knew how to deal with them. The patent doesn't say, we
23 invented some special way to drive underneath the racks that avoids all
24 multi-path effects. They disclosed LiDARs just like Raizer does. So you're
25 using the same types of sensors to do exactly the same thing. So Raizer's
26 robot is fully capable of performing every step of the patent without

1 modification. All you need to do is the route planning.

2 Okay. With that, I'll reserve the remainder of my time unless you
3 have further -- well, actually, I'm going to reserve the remainder of my time.
4 We didn't discuss the dependent claims. I'll let them go and see how much
5 we focus on that, and I'll come back and address the dependent claims in my
6 rebuttal, if that's all right.

7 JUDGE GERSTENBLITH: Yes, if they raise the dependent claims,
8 you can respond.

9 MR. HAYNES: All right. Let me just say on the dependent claims,
10 we've already answered your question about five and how we're relying on
11 how it turns. I think with respect to the first limitation on the dimensions,
12 I'm not exactly sure what their argument's going to be on that. We believe
13 that Raizer explicitly discloses the dimensions both in the figure, but also in
14 the text as shown on Slide 39. So the figure on Slide 38 and the text on
15 Slide 39 where it says the frame has two long beams and a short beam that
16 connects them.

17 So that is the relative dimensions of length greater than width as
18 illustrated in the figures. We think that's explicitly shown.

19 With respect to 5C, again, we're relying on Raizer's robot. But the
20 teaching of 5C about how much spacing you have to have in the aisles to
21 help with the turning, that's what we point to Hangzhou for, not the robot
22 itself, but just that you need some space to make sure you can turn.

23 Frankly, that's common sense, but Hangzhou shows it. So you don't
24 have to assume that a POSITA would have known it. Hangzhou tells you
25 this is how you would do it. So that's what we rely on Hangzhou for. We're
26 not relying on the robot of Hangzhou. We're relying on the teaching that

1 you can turn that robot under the shelf as long as you have the shelf wide
2 enough.

3 Then on 8 and 9, again, in terms of turning the vehicle, we think that's
4 explicitly disclosed in Raizer as set out on Slide 41. But I think their
5 argument here is really more about, you know, they're saying we're relying
6 on Raizer -- sorry, Hangzhou's robot, not the Raizer robot. Again, that's not
7 what we're doing. We're relying on the Hangzhou -- sorry, the Raizer robot
8 and Hangzhou's teaching that you can turn underneath the aisle.

9 But Raizer itself says that the wheels on the front can turn on a
10 vertical axis 360 degrees to turn the robot. And so that is how you -- the
11 robot is capable, and Hangzhou tells you the path you should use. With that,
12 I reserve the rest of my time. Thank you, Your Honors.

13 JUDGE GERSTENBLITH: Thank you. You can see you have
14 almost 14 minutes remaining. We're going to take a short five-minute
15 recess, and we'll be back at 2 o'clock to resume with Patent Owner's
16 opening.

17 (Whereupon, the above-entitled matter went off the record at 1:55
18 p.m. and resumed at 2:01 p.m.)

19 JUDGE GERSTENBLITH: Thank you. Please be seated. Okay.
20 Mr. Shaw, how much time would you like to set aside preliminarily for
21 rebuttal?

22 MR. SHAW: Yes, Your Honor. A warning at ten minutes.

23 JUDGE GERSTENBLITH: Ten minutes. Okay, great. I'm going to
24 do the same thing as I did with Petitioner. Just let it run from 60, but you
25 know how much time you'll have in total.

26 MR. SHAW: Certainly, sir.

1 JUDGE GERSTENBLITH: And whenever you're ready, please feel
2 free to start.

3 MR. SHAW: Thank you, Your Honor. So first I want to step up to a
4 30,000-foot view and talk about what's going on with the primary dispute,
5 which is the motivation to combine. So what happened here is Petitioner
6 started by pointing to a number of problems that Raizer doesn't actually
7 have. They followed that up by proposing to solve those problems with a
8 couple of solutions that Raizer doesn't need and that Raizer explicitly tells
9 you that he doesn't want in his system. And when they do that, they ignore a
10 couple of problems with the proposed combination.

11 First of all, they ignore that the proposed combination, the proposed
12 solution, is actually going to create more of the problem that they're
13 purporting to solve. The other thing they ignore is that the proposed
14 combination is going to interfere with, if not outright destroy, a number of
15 the stated purposes of Raizer, which is contrary to Federal Circuit case law.
16 This is a quintessential case of hindsight reconstruction, and the petition
17 should be denied.

18 And, Your Honor, if you'll bear with me, I'm going to run my own
19 slides and I'm going to jump around a little bit. So please just give me a
20 second if I have to change the slide myself. So the first thing I want to talk
21 about is the '632 patent.

22 JUDGE GERSTENBLITH: Just don't forget to call the slide number
23 out.

24 MR. SHAW: Of course. And I'm looking at Patent Owner's Slide 11.
25 But first I want to address something Counsel said. So. Counsel said that the
26 '632 vehicle goes under the rack for the purpose of reducing congestion.

1 The '632 patent never actually says that, okay? Here on Slide 11 is what the
2 '632 patent talks about as its purpose, and particularly here in this excerpt on
3 the right side.

4 So what OPEX in the '632 patent talks about is how, in the art, folks
5 try to achieve greater efficiency in automated systems by sort of piling on
6 top of their existing automation with various retrofit solutions. And
7 basically putting Band-Aids on their automation as it becomes outdated or
8 stops working as well as it originally did.

9 But what OPEX says here in the '632 patent background, they say,
10 sooner or later, however, a point of diminishing returns is encountered. So
11 when you try to do that piling on of automation on top of automation, you're
12 going to get a point of diminishing returns. That's where the '632 patent
13 comes in. And it says, when the point of diminishing returns is reached, a
14 facility operator may be forced to abandon pre-existing material handling
15 infrastructure. So that's what the '632 patent is for.

16 And I think that's important because when you set that off against the
17 main goal of Raizer, what Raizer says is his main goal, which is to retrofit
18 any existing warehouse, it starts to come into focus why there are these
19 incompatibilities between reading Raizer in a combination that supposedly
20 practices the '632 patent and these incompatibilities that would cause a
21 person of ordinary skill not to be motivated to make that combination. The
22 one other thing I want to talk about --

23 JUDGE PESLAK: Mr. Shaw?

24 MR. SHAW: Yes, Your Honor.

25 JUDGE PESLAK: We have to focus on the claims here. So I just
26 wanted to make sure a couple of things are clear on the record. Other than

1 Claims 5, 8 and 9, Patent Owner doesn't dispute any claim limitations,
2 correct?

3 MR. SHAW: In the sense that we don't dispute that the combination
4 or the individual prior art references disclose the individual elements of the
5 independent claims.

6 JUDGE PESLAK: Okay. You dispute everything but 5, 8, 9, on
7 motivation to combine and reasonable expectation of success, correct?

8 MR. SHAW: That is correct, Your Honor, yes.

9 JUDGE PESLAK: Okay. So, another question. Is there anything in
10 any of the claims that requires software?

11 MR. SHAW: Apologies, Your Honor, I couldn't hear you. Could you
12 say that again?

13 JUDGE PESLAK: Right. Is there anything in any of the claims that
14 requires software or even a computer processor?

15 MR. SHAW: Not to my recollection, Your Honor. But I think the
16 important point there is that Raizer does require software and does require
17 computer processing. And so in order to make a combination with Raizer,
18 you do have to go into the software.

19 JUDGE PESLAK: Okay. Thank you.

20 MR. SHAW: You're welcome. So one other thing that I wanted to
21 point to is, Counsel said the '632 patent doesn't disclose a novel way to drive
22 the robot. If you look at the notice of allowance, the examiner says the point
23 of novelty is the ability for one vehicle to drive in all the directions to all the
24 places that the '632 patent drives. So we dispute that it doesn't disclose a
25 novel way to drive the robot.

26 Now, Petitioner touched on this, and I just want to reorient here, and

1 it's shown on OPEX's Slide 22. What is the combination we're actually
2 talking about? The combination is Raizer as is, with Hangzhou's ability to
3 drive under the racks. That's the only thing they're pulling from Hangzhou,
4 is the ability to drive under the racks, okay? So with that background, I want
5 to talk a little bit about the references, starting with Raizer. And I'm going
6 to jump to OPEX -- well, actually what I'm going to do is I'm going to jump
7 to Petitioner's own Slide 13.

8 And so when Petitioner showed this slide and talked about Raizer,
9 they said, well, this paragraph 104 in Raizer clearly discloses that the vehicle
10 can drive anywhere on the floor. If you look at the actual context of the
11 sentence, all it's saying is that the vehicle does not have to follow a track.
12 That's what it means by drive to any location on the floor. It doesn't mean
13 that it can go anywhere it wants to. In context, it means it just doesn't have
14 to follow a track to drive around on the floor in the places where I want it to
15 go.

16 And as you correctly pointed out, Your Honor, Petitioner never
17 alleges that Raizer discloses driving under the racks in either direction
18 required by the asserted claims. They only rely on Hangzhou for that.

19 Now, if we jump to Petitioner's Slide 14 and continue on Raizer, I
20 want to talk about one other thing here. So counsel talked a lot about how
21 Raizer says it can be installed in a new warehouse. And it does say that. We
22 don't dispute that. But it is important to note the context where it says it.
23 First, if we look here in paragraph 112 where it says it, it says, although a
24 main idea behind the present invention is to retrofit existing warehouses, the
25 system can obviously be installed in new structures.

26 JUDGE MARSCHALL: If you could try to stay near the podium just

1 so Judge Peslak can hear you clearly through the microphone.

2 MR. SHAW: I appreciate it, Your Honor. I apologize. I tend to
3 wander. And so what Raizer is telling you is, my one system needs to be
4 able to retrofit any existing warehouse or be installed in any new warehouse.
5 You can't pick and choose between those things. He wants his system to be
6 able to do it all. And it's the retrofitting point that's the biggest point here.
7 And it's the same thing on the left of their Slide 14 in paragraph 16. It says,
8 it is another purpose of the present invention to provide an automatic
9 warehouse system that can be relatively inexpensively and easily added to
10 existing warehouses.

11 The point of this invention, the main idea behind this invention, he
12 says so himself, is retrofitting. And it's not just retrofitting one warehouse,
13 Your Honor. If we jump to Patent Owner's Slide 15, we've got here
14 paragraph 81 from Raizer. And what he says explicitly, the system of the
15 invention is designed to plug and play in any warehouse. He wants to be
16 able to retrofit every single warehouse in existence. That is why this system
17 is designed. That is the main idea behind this invention. And if you see
18 here on the bottom left, Dr. Spenko, Petitioner's own expert, agrees with
19 that. Now, why does Raizer --

20 JUDGE MARSCHALL: But doesn't Raizer say that the system can
21 obviously be installed in new structures as well? So how does that help? I
22 mean, it's obviously disclosing both options, a retrofit or in a new structure.
23 So how does it help you to argue that portions of it emphasize the retrofitting
24 nature?

25 MR. SHAW: I'll tell you why, Your Honor. Because as you've seen
26 from the -- so Raizer has one system that wants to be able to be in a new

1 warehouse or retrofit, right? And as we've seen from the evidence, and I'm
2 going to get to this in a little bit, but I'll touch on it right now. You can't
3 retrofit a system that drives under the racks onto every existing warehouse.

4 Our expert, Dr. Singhose, in his declaration, I believe it's paragraph
5 109, he talks about a lot of warehouses store items under the racks. He also
6 talks about how there's going to be racks that are too low and your robot
7 with the item can't fit under it. There's also going to be racks that are too
8 narrow and your robot can't drive underneath it.

9 And so when you encounter that kind of warehouse, you can't retrofit
10 Raizer onto that kind of warehouse, and you've interfered with Raizer's
11 purpose of being plug and play in every existing warehouse, his main idea of
12 retrofitting. That's the problem.

13 And the reason that Raizer focuses on retrofitting, he tells you there
14 are problems in the prior art that he's trying to avoid. Paragraph 5, he's
15 trying to avoid large capital equipment investments when you put his system
16 in a warehouse. Paragraph 6, the second and third highlights, he's trying to
17 avoid having to reorganize the warehouse, making a large effort to
18 reorganize items in the warehouse before you install the system. Instead,
19 and he even says in paragraph 7, I believe, which unfortunately is not on the
20 slide, he's also trying to avoid downtime, which is a result of this effort to
21 reorganize the warehouse.

22 He wants you to just be able to come in, bolt his tracks onto the
23 existing shell structure, and set his robots loose in the warehouse. If you
24 require driving under the rack, and you have racks without enough room to
25 drive under, you can't do that. You've frustrated the entire purpose of
26 Raizer, which is to retrofit onto every existing warehouse, as he says in

1 paragraph 81.

2 JUDGE GERSTENBLITH: But, Counsel, what's the problem with
3 Petitioner's argument that you don't have to go under every single rack?

4 MR. SHAW: So, Your Honor, I think the first problem with that is
5 that it's a brand new argument that we've not heard before. So in the
6 briefing, they talk about how the purpose of their combination, the problem
7 it solves, is by maximizing vehicle paths throughout the warehouse. By
8 being able to go under many racks or every rack is what they keep saying.
9 They never before today said, we only want to be able to go under one rack.

10 The other problem you're going to run into is even if you only go
11 under one rack, you still could come to a warehouse where all the racks are
12 too low, all the racks have items stored under them, and you're going to have
13 to go through a capital investment, you're going to have to go through a
14 reorganization to reorganize those shelves, move items out from underneath
15 them, replace them, and that's, again, going to frustrate the purpose of Raizer
16 to be plug and play in that warehouse.

17 JUDGE GERSTENBLITH: So you seem to be making the argument
18 that if Raizer can't apply to every single warehouse that one could possibly
19 imagine in the universe, then it wouldn't -- then somehow Raizer's purpose is
20 frustrated. But that basically means that Raizer wouldn't apply in the first
21 instance. So, in other words, Raizer says, hey, we want to make this easy.
22 But if you have a complex warehouse, it may be more complex for you to
23 implement this system. I don't get how going under the shelf changes any of
24 that.

25 MR. SHAW: So I think two points, Your Honor. First of all, Raizer
26 says it. So it's not something that I'm coming up with. Raizer says I want to

1 be plug and play in any warehouse. So if there is a warehouse out there that
2 he's not plug and play in, I do think that frustrates his purpose, as I'm saying.
3 That's why he has very simple travel paths where his rails go on the existing
4 shelves and the robots drive up and across those rails without going under
5 things because that complicates.

6 And the reason he doesn't want to complicate is all these problems in
7 his background that he's trying to solve, and particularly, he talks about a lot
8 that he provides an automatic warehouse system that's suitable for small and
9 medium-sized warehouses. So Raizer is your entree to automation. If you
10 look at paragraph 3 of Raizer, he says, I don't remember the exact words, but
11 he says primarily the invention is for automating warehouses that are
12 currently based on manual labor.

13 So he's not advanced automation for your Targets, your Walmarts,
14 your Amazons with these massive warehouses. He's for small and medium-
15 sized warehouses. He's giving them a cheap, simple, quick solution to take
16 that first step in automation that the background of the '632 patent disparages
17 and says has diminishing returns. So that's how it all ties together from our
18 perspective, Your Honor.

19 JUDGE GERSTENBLITH: There could also be a warehouse that has
20 a very small or no sort of gap in between the shelves that Raizer's robot
21 wouldn't fit, right?

22 MR. SHAW: Well, Your Honor, I think -- I'm not certain about that
23 because if you recall from Raizer's figures, the arms, when they engage with
24 the rails, they can telescope inward and outward to accommodate narrower
25 and wider spreads between the rails. So I'm not sure.

26 JUDGE GERSTENBLITH: You're talking about shelf space. I'm just

1 talking about the passageway in between the shelving units, so from a more
2 of a horizontal dimension as opposed to a vertical dimension. If those
3 shelves were so close to one another that Raizer's robot couldn't fit to then
4 hook on, that would also frustrate Raizer. Like, that warehouse might not be
5 able to use Raizer's system, right?

6 MR. SHAW: I think that's right, and I think Raizer tells you that he
7 doesn't want you to use his system in that warehouse because moving those
8 shelves around is going to require this large capital equipment investment
9 and this very large effort to reorganize the warehouse.

10 JUDGE GERSTENBLITH: So it doesn't frustrate Raizer's purpose
11 that it can't be used in any warehouse.

12 MR. SHAW: I'm sorry, Your Honor, I'm not certain that I understand.

13 JUDGE GERSTENBLITH: So when I asked you about different
14 warehouse configurations, you said, well, that's no good because Raizer says
15 it should be used in any warehouse. And I gave you a configuration of a
16 warehouse where it couldn't be used and you said, well, that's okay because
17 he doesn't want you to spend a lot of money to do it. You get what I'm
18 saying? On the one hand, you told me it has to be in any warehouse, and the
19 next hand you told me, well, it's okay if it's not in every one because it
20 doesn't want you to spend a lot of money.

21 MR. SHAW: I guess I'm struggling a little bit, Your Honor, because
22 it's not an argument that either party has made, so I haven't really wrestled
23 with it.

24 JUDGE GERSTENBLITH: Okay. That's all right. I just wanted to
25 make sure I understood what your argument was.

26 MR. SHAW: Yeah. So with that background of Raizer, I just want to

1 talk very briefly about Hangzhou, and I am on the Patent Owner's Slide 18.
2 So Hangzhou uses two different robot types, the Trolleys 200 are the little
3 vehicles outlined in red here, and then it has the stacking vehicles 300
4 outlined in blue. So the trolleys that are outlined in red, they do go under the
5 racks. We don't dispute that. And the stacking vehicles outlined in blue,
6 their purpose is to lift items vertically to put them on the shelf. It's kind of
7 like a forklift, is the way I think about it.

8 And I think the important point here is that none of Hangzhou's robots
9 ever leave the floor. They're all ground bound. They can't travel vertically.
10 And I think that's going to create a lot of the issues that -- well, let me just
11 move on to the disputes. And we're going to maintain all the arguments in
12 our brief, but I want to focus on a couple of the disputes, and I want to start
13 with substantive reasons why a person of ordinary skill would not combine
14 Raizer and Hangzhou to meet the independent claims.

15 Now, before we get into that, Counsel talked a lot about what Raizer
16 could do, or what a person of ordinary skill in the art could do with
17 combining Raizer and Hangzhou, but we all know that's not the pertinent
18 question here. The pertinent question is what a person of ordinary skill in
19 the art would be motivated to do, and our argument is they would not be
20 motivated to combine Raizer and Hangzhou in the way that the petition
21 states.

22 Now, the first reason that I want to talk about for that -- and I'm on the
23 Patent Owner's Slide 45. So the motivation is premised on the idea that
24 Raizer needs additional horizontal travel paths to move about the warehouse,
25 and a person of ordinary skill could put that travel under the rack. The
26 problem with that is that Raizer doesn't need to travel under the rack.

1 So let's talk about this in a little more detail. And the text on the left
2 sort of shows the argument they're making for motivation to combine, and
3 here's how it goes at a high level. We know that Raizer's vehicles can drive
4 vertically. Therefore, a person of ordinary skill in the art would want to
5 maximize their storage by raising the shelves up to the ceiling of the
6 warehouse.

7 Right away, that's already requiring the large capital investment, the
8 reorganization of the warehouse that Raizer doesn't want, because they're
9 saying you have to expand the shelving, you have to reorganize the shelving,
10 replace the shelving to get up to the ceiling. But even imagine that you
11 would want to do that. So then the next step in the argument, they say, once
12 you have those taller shelves, you want to add more vehicles. And once you
13 add more vehicles, you need new travel ways, you need new paths for the
14 vehicles to travel to avoid collisions and reduce congestion.

15 And what the petitioner ignores about that is that if you were to
16 expand the shelves in Raizer, he would already add additional horizontal
17 travel ways without going on the floor. Let me show you what I mean. If
18 you jump to the Patent Owner's Slide 48, this is Figure 12A from Raizer on
19 the slides.

20 So imagine you started with a system with just those bottom two
21 shelves. You've got one horizontal travel way that that bottom robot can
22 drive on, right? As you add the third, fourth, fifth, sixth shelves in those --
23 in this figure, for every new shelf you're adding a new travel way where
24 those upper robots can now drive horizontally up off the floor and avoid the
25 other robots that are on the floor, thereby reducing congestion and doing all
26 the things that Petitioner says you need to go under the racks to do.

1 So Raizer has a simpler solution than going under the racks, which is
2 this vertical expansion of the horizontal travel paths. Now let's talk --

3 JUDGE GERSTENBLITH: Counsel, just before you do that, I just
4 want to make sure I understand.

5 MR. SHAW: Sure.

6 JUDGE GERSTENBLITH: You're not contesting that traveling
7 under the bottom rack increases the travel paths, right?

8 MR. SHAW: No, of course that's an additional travel path.

9 JUDGE GERSTENBLITH: Okay. I just wanted to make sure.

10 MR. SHAW: No, but my point is that number one, Raizer doesn't
11 need it because he already increases travel paths. And I'm going to get to in
12 a second, we've briefed a lot of the problems that going under the rack is
13 going to cause. So that one additional travel path, the juice isn't worth the
14 squeeze. Nobody would want to put that in Raizer because they don't need it
15 and it's going to cause more problems than it solves.

16 JUDGE GERSTENBLITH: Thank you.

17 MR. SHAW: Of course. And if we jump to Patent Owner's Slide 19
18 and contrast Raizer with Hangzhou. So we've talked about Hangzhou a little
19 bit, and on the top left here we have Figure 1 of Hangzhou. And again, it's
20 got the trolleys that are number 200 driving all around the outside of the
21 racks. And it's got those stacker vehicles, 300, that are in five of the six
22 aisles between the storage spaces.

23 Now, first it's important to note here that those stacker robots, they
24 can only drive in the aisles. The patent calls them the stacking row
25 laneways. And in the middle right, the one is labeled 12 and sort of outlined
26 in a dotted line. So they can't get out of the way. They're in the aisles all the

1 time. That's the only place they can go. That's different than the trolleys.
2 So the trolleys can drive around outside the racks and they can drive under
3 the racks. Hangzhou tells you they preferably don't ever go into the aisles.

4 The other thing Hangzhou tells you is that that stacker vehicle
5 planning has higher priority. So what that tells you is the only reason that
6 Hangzhou's trolleys have to go under the racks is because they can't travel
7 horizontally any other way. They can't -- they're not supposed to go into the
8 aisles where the stacker vehicles are. And they can't climb up the shelves
9 and travel horizontally up off the ground like in Raizer. That's why they go
10 under the racks.

11 JUDGE PESLAK: Mr. Shaw?

12 MR. SHAW: Yes. I believe Judge Peslak froze.

13 JUDGE GERSTENBLITH: We're having some technical difficulties,
14 but we're going to pause the clock --

15 JUDGE PESLAK: (Audio interference.)

16 JUDGE GERSTENBLITH: Judge Peslak, you just froze. Can you
17 start over?

18 JUDGE PESLAK: I'm sorry. Doesn't Figure 1 of Hangzhou show
19 robots traveling across the aisles where the stacking vehicles are?

20 MR. SHAW: Yes, Your Honor. So there are embodiments in
21 Hangzhou where the trolleys can cross the aisles. And I'm sorry if I
22 misspoke or gave the opposite impression. What I said is that the trolleys
23 preferably don't go into the aisles according to Hangzhou. I believe that's
24 paragraph 48.

25 JUDGE PESLAK: Okay.

26 MR. SHAW: Thank you for the clarification, Your Honor. So the

1 point is Raizer doesn't have either of these problems where it can't leave the
2 ground and it can't go into the aisles. So it doesn't need to go under the racks
3 the way that Hangzhou does because it has other ways to move around the
4 warehouse horizontally.

5 Now, I want to jump to Patent Owner's Slide 26 and talk about
6 another issue with the motivation to combine. And this is -- so on Slide 26
7 is their explanation of the motivation to combine. And the highlighted part
8 is the three things that they say motivate the combination. Decreasing
9 congestion, avoiding autonomous robot collisions, and maximizing space
10 utilization. Now, there's two problems with this, building on what we just
11 discussed.

12 Number one, Raizer doesn't have problems with congestion, robot
13 collisions, or space utilization. And number two, if you add the under-shelf
14 travel from Hangzhou, it actually creates congestion, creates potential
15 collisions, and so it undermines the motivation to combine. So let me
16 explain what I mean by that if we jump to Patent Owner's Slide 29. And you
17 see here on the right, this is paragraph 98 from Raizer. And this is the only
18 time that Raizer ever mentions congestion. And what does he say? He says,
19 I already solved that problem. I don't have an issue with congestion.

20 The system of the invention is a self-learning system where
21 algorithms can track the movement of the robots and organize the routes of
22 traffic in and around the warehouse to reduce congestion and prevent traffic
23 jams. He totally prevents traffic jams. He doesn't have a problem with
24 congestion or collisions because his robots can drive up and move along the
25 shelves horizontally.

26 JUDGE MARSCHALL: Even if that's true to some extent, it's not as

1 if Raizer needs to call out a deficiency or a problem in order to support a
2 motivation to combine, right?

3 MR. SHAW: I agree with that, Your Honor, but the issue here is the
4 problem that Raizer -- that the combination supposedly solves, Raizer
5 already solves. So the idea that a person of ordinary skill would be
6 motivated to go under the racks in Raizer to prevent traffic jams, it's
7 unnecessary or redundant at best, and we have the case like to the S-Tech
8 systems on the left that when you try to add a redundant function, that
9 doesn't motivate a person of ordinary skill to make the combination.

10 JUDGE MARSCHALL: If it were 100 percent redundant, that
11 certainly makes sense. But wouldn't it be kind of a belt and suspender sort
12 of thing where Raizer has one way of addressing the issue, which is largely
13 successful for Raizer. Hangzhou has another way of doing it, which is
14 successful for Hangzhou. But combining them would nevertheless be
15 advantageous, even if it's marginally so.

16 MR. SHAW: So I think the issue is that combining them is not going
17 to be advantageous. It's actually going to create more congestion and
18 collisions, which is the next point I'm going to go to. So if we jump to
19 OPEX's Slide 32. Again, let's imagine that Raizer does need to avoid
20 congestion or collisions for some reason, even though he says that he's
21 solved the problem. Hangzhou explicitly tells us that traveling under the
22 rack creates potential collisions and creates greater congestion. So his
23 under-rack travel doesn't help the problem that it's supposed to solve.

24 If you look here, paragraph 59 on the left, it says, potential collisions
25 may occur since the stacking device and auto-guided trolleys carrying
26 standardized containers need to use the cache space below the shelves. So

1 cache space below the shelves is driving under the rack. Potential collisions
2 may occur because the vehicles drive under the rack. It doesn't solve the
3 problem, it exacerbates it.

4 JUDGE MARSCHALL: But nevertheless, Hangzhou uses it. So it
5 must have weighed the pros and cons and felt like it was still advantageous.

6 MR. SHAW: It's advantageous in Hangzhou because Hangzhou's
7 vehicles can't leave the floor to get out of the way. That's not a problem in
8 Raizer, Your Honor. In addition, over here on the right, in paragraph 63 of
9 Hangzhou, here he's talking about what you mentioned earlier, Judge Peslak,
10 where the trolleys can cross an aisle. And again, he says when you're
11 crossing an aisle, you have to run a planning algorithm to make sure that the
12 aisle is clear before you cross.

13 So you're trying to avoid congestion, or you're worried about
14 potentially colliding with another vehicle when you cross the aisle. And for
15 that reason, he says, you have to run this algorithm, and if there's a problem,
16 then you have to run the algorithm again and wait longer to cross the aisle.
17 So number one, crossing the aisle is creating potential collisions, creating
18 potential congestion. The other thing it's doing is it's introducing delay in
19 the trolleys driving around the warehouse in Hangzhou. They have to wait,
20 potentially, to cross the aisle if there's something in the way.

21 And that's important because if you look at paragraph 80 of Raizer,
22 when he's talking about his anchor point navigation system, he says the
23 reason that he does that is so that the robots can drive around to where
24 they're going as fast and efficient as possible. So he doesn't want the robots
25 to get slowed down in addition to not needing to go under the racks, because
26 he has all these additional travel ways up on the shelves.

1 To summarize that, even if we were to assume that Raizer has a
2 problem with congestion and collisions, which it's Patent Owner's position
3 that he doesn't, Hangzhou doesn't solve it. Hangzhou just makes it worse.
4 So you wouldn't want to travel under the racks in Raizer either way.

5 One other thing I wanted to talk about, if I jump to Patent Owner's
6 Slide 30. So we've talked before about another thing they say in the
7 motivation to combine, is you'd want to make the combination to efficiently
8 use space. That's another thing that Raizer already does. Raizer tells us both
9 in paragraph 31 and paragraph 105 that he maximizes the efficient use of
10 shelf space. So he doesn't need more efficient space. He's already
11 maximized.

12 And the other thing this tells me, if he's maximizing efficient use of
13 shelf space, he's probably storing items under the shelf that'll be in the way if
14 the robots try and drive around under there. So, again, Raizer explicitly tells
15 you all the reasons why he doesn't want you to drive under the shelves. It
16 creates more problems than it allegedly solves.

17 JUDGE PESLAK: Mr. Shaw?

18 MR. SHAW: Yes, Judge.

19 JUDGE PESLAK: Where does Raizer say it stores items under the
20 shelf?

21 MR. SHAW: So, it doesn't explicitly say it, Your Honor, but in both
22 paragraph 31 and paragraph 105, Raizer says that he maximizes the efficient
23 use of shelf space. And to me, that implies storing items everywhere
24 possible as tightly together as possible, which he also says in those
25 paragraphs. There's not space between the items. They're crammed in there
26 as tightly as he can get them to maximize efficient use of space

1 So with that, I do want to jump -- well, actually, I have one other point
2 that I want to make about retrofitting with under-shelf travel. And this is
3 going back to the questions you were asking me before about that. So if we
4 jump to the Patent Owner's Slide 43. And I've already told you why Raizer
5 doesn't want and actually explicitly pushes back against under-shelf travel,
6 but I do want to point out one thing in Petitioner's arguments.

7 So they talk about here, and it's in this top left quote from their reply
8 brief at page 9. The last sentence they say, Dr. Singhose confirmed that a
9 POSITA would have a lot of freedom in setting shelf height and would
10 clearly set a shelf height in a warehouse based on the combined height of a
11 robot and the item that it carries. He was talking about building a brand new
12 warehouse to practice the '632. He wasn't talking about retrofitting a
13 warehouse that already existed with Raizer. I think this is a little bit of a
14 misleading use of that quotation. I just want to point that out.

15 JUDGE MARSCHALL: Well, Raizer does say it works in brand new
16 warehouses. So there's nothing inappropriate with that possibility too, right?

17 MR. SHAW: No, but I think the way they're using the quote is to try
18 and suggest that Dr. Singhose admitted that a person of ordinary skill would
19 go in and move the shelves around when he's trying to retrofit a warehouse
20 with Raizer, and that's decidedly not what Dr. Singhose was talking about.
21 That's the only point I'm trying to make, Your Honor.

22 And so just to sum up, although in response to your questions, I've
23 already talked about what I wanted to say with respect to how driving under
24 the shelves is taught away from by Raizer. At the very least, traveling under
25 the shelves interferes with Raizer's stated purpose of being plug and play in
26 any warehouse.

1 And we've seen -- we have cited here this Federal Circuit case that it's
2 error to avoid evidence that a proposed modification would interfere with
3 Raizer's stated purpose. And that's what the proposed modification does
4 here. It interferes with this stated purpose of retrofitting any existing
5 warehouse in a plug and play fashion.

6 Now, I want to jump to the reasonable -- well, actually I want to talk
7 about survey mode for a second. Apologies. And I mentioned -- sorry, I
8 thought I heard someone starting a question. I mentioned this before.

9 So, Counsel mentioned that survey mode isn't claimed in the '632
10 patent, but Raizer requires survey mode. And so when you're making a
11 combination with Raizer, you can't just ignore the fact that he uses survey
12 mode to map the warehouse, and then he uses that map to navigate the
13 warehouse.

14 JUDGE MARSCHALL: Doesn't Raizer also say that you can
15 download a map?

16 MR. SHAW: I don't think so, Your Honor. So if you look at
17 paragraph 83 of Raizer, and I think we have that on a slide, if you give me
18 one second. Can I just step away from the podium and --

19 JUDGE MARSCHALL: Sure.

20 MR. SHAW: Apologies, Your Honor. I just want to show you what
21 I'm talking about when I talk about that.

22 JUDGE MARSCHALL: We also have the reference. So if it's easier
23 just to use the reference, that's fine also.

24 MR. SHAW: Yeah, that would be fine, Your Honor. So if you look
25 at paragraphs 83 and 84 of Raizer, this is where he talks about survey mode.
26 And thank you for that. Just saving me the trouble of looking for it. So

1 what Raizer says is he says the robots are preloaded with proprietary
2 software, and this starts on the fifth line of paragraph 84. Actually, let me
3 back up --

4 JUDGE MARSCHALL: That's on Slide 61 of your slides.

5 MR. SHAW: Thank you, Your Honor. That's extremely helpful, I
6 appreciate it. So this has paragraph 84, I agree. So you have to start first,
7 though, with paragraph 83, which says the system of the invention comprises
8 the following components. So he's telling you these components are
9 required. This is not an embodiment. This is the system of the invention
10 that requires the following components.

11 And then when he gets to talking about the preloading of the software,
12 he says the robots are preloaded with proprietary software, which includes
13 the warehouse layout, routes, intersections, and designated areas. That's, I
14 think, what you're talking about, Judge Marschall. But he follows up by
15 saying this mapping survey is recorded by a survey mode of the robot
16 software.

17 So what that tells me, and Dr. Spenko here on the right agreed, the
18 robots go out into the warehouse and they conduct this survey mode to map
19 the warehouse. Then once that map is created, that's what's loaded onto all
20 the robots in the proprietary software. So the map has to actually be created
21 by the robots in that survey mode before it can be preloaded onto the robots.

22 JUDGE PESLAK: So, Mr. Shaw, if I understand your argument, is
23 your argument that because this software is described as proprietary, that for
24 some reason it can't be used in the combination?

25 MR. SHAW: I think the --

26 JUDGE PESLAK: An alternative way to phrase the question: Is it

1 beyond the level of skill of a person of ordinary skill in the art to do a map in
2 there?

3 MR. SHAW: I think the argument is two-fold, Your Honor. And I
4 apologize for interrupting. I thought you were done with your question. So
5 the first argument, and I mentioned this before, the combination uses Raizer,
6 right? And Raizer uses this proprietary software. And the only evidence in
7 the record of what that means is Dr. Singhose's testimony saying that in this
8 industry, in this art, a person of ordinary skill would read that and think that
9 that software was secret, and he couldn't modify it.

10 So that's the first level of the argument, is yes, Raizer's software is
11 proprietary. It can't be modified to map under shelves because it doesn't do
12 that now, and the person of ordinary skill can't access it. But the second tier
13 of the argument is the multi-path effects point that Counsel was talking
14 about, which is even if you could get in and adjust this survey function, this
15 mapping function, to try and map under shelves, doing that would be beyond
16 the level of ordinary skill in the art due to these multi-path effects and all the
17 problems they create.

18 JUDGE MARSCHALL: Can you respond to Petitioner's argument
19 that if it's so complicated, why didn't the '632 patent disclose any algorithms
20 for achieving this same function? In other words, they're arguing almost
21 non-enablement, even though they can't raise non-enablement, that it must
22 be something known in the art--how to provide this sort of source code--
23 because the '632 patent didn't even allude to that as being an issue.

24 MR. SHAW: I think the response to that is that Raizer does it using
25 proprietary software. So even if a person of ordinary skill could build some
26 other software to put in the robots of Raizer, Raizer tells you that he's using

1 his proprietary software with survey mode, and that substitution is not part
2 of the combination they've argued. The combination that they've argued is
3 take Raizer as it is and just drive under the shelves like in Hangzhou.

4 And so you can't just throw out bits and pieces of Raizer and say,
5 well, I'm not going to use this survey mode because it doesn't fit my
6 argument. Raizer says you use survey mode to map the warehouse in the
7 system of my invention.

8 JUDGE MARSCHALL: So it's your position that Petitioner is bound
9 to use Raizer's source code as is in their proposed combination?

10 MR. SHAW: Petitioner is bound to use the Raizer reference as is in
11 their combination because that's what they've argued from the petition in this
12 case. It would be a new argument to say otherwise. Now, I do want to
13 touch briefly on a couple of issues with the dependent claims, and I want to
14 jump to Patent Owner's Slide 86. Apologies. No, I'm sorry, I apologize. I
15 want to jump to actually the petitioner's own Slide 39 and talk about claim 5.

16 So we think that they have not shown that Raizer's robot meets either
17 element of claim 5. And in fact, their arguments are in tension with one
18 another internally on those points. So let's talk first about what the parties
19 are calling claim element 5B. The first vehicle has a length and a width, and
20 the length is greater than the width. So in the center here, Figure 5D is how
21 they started this argument in the petition.

22 They say, I can draw a line on Figure 5D of Raizer, and the line that
23 measures the length of the vehicle is longer than the line that measures the
24 width of the vehicle, and so that means the length is greater than the width.
25 And we came back and we responded, and we said, you know, everybody
26 knows that patent figures aren't drawn to scale, and you can't just measure

1 the drawings and say, QED, I proved it. You have to -- unless the reference
2 says my drawings are to scale, which Raizer doesn't.

3 And so then they came back, and they said, well, okay, that doesn't
4 matter, because Raizer's vehicle has these long beams 28, and they're shown
5 here in Figure 5D. And then Raizer also discloses, they say, shorter beams
6 12. And the shorter beam 12 is not in Figure 5D, but it's in 5B. Right here
7 at the front of the vehicle, it looks like it has the word squid on it. And they
8 say, well, Raizer calls those long beams and shorter beams, so that tells me
9 that the long ones are longer than the short ones.

10 The problem is that the short beam only goes from outside edge to
11 outside edge of the long beams, so here. And the width of the vehicle that
12 they measured is wider than that, because the wheels stick out to the side of
13 the long beams. So they still haven't accurately shown us any dimensions of
14 length and width that would allow us to compare those. And that's before
15 you even consider that the wheels in Raizer, as we discussed before, can
16 telescope even further outward to grab broader spaced tracks to drive
17 around.

18 So is this the width of the vehicle, or is it the width of the vehicle
19 when they're spread all the way out? They haven't wrestled with that either.
20 But more importantly, their argument is a failure of proof, because the
21 shorter beam 12 doesn't extend to the width of the vehicle. They have
22 nothing in Raizer that compares the length of the width -- the length of the
23 vehicle to the width of the vehicle and says, I'm longer than I am wide.

24 Now, that alone is enough to defeat this claim, but then when you turn
25 to 5C, you've got an even bigger problem. So when you get to element 5C,
26 it talks about the space between the edges of the path being a distance

1 greater than half the vehicle. And now if we go to our slide, Patent Owner's
2 Slide 91, you see what they say about that. They say here on the left that
3 Hangzhou discloses trolleys that are small enough to rotate in place by 90
4 degrees

5 Well, Counsel told you in his argument they're not relying on
6 Hangzhou's trolleys. They're relying on Raizer's trolleys. And that's
7 important because up here in the top right, Hangzhou tells you the reason my
8 trolleys can turn in place is because they're symmetrical, they're square.
9 So either Raizer's vehicle is longer than it is wide and then this disclosure in
10 Hangzhou doesn't get them where they want to go, or else Raizer's vehicle is
11 symmetrical and then it doesn't meet claim element 5B. Either way, they
12 haven't proven that claim 5 is invalid because it's not disclosed by the prior
13 art.

14 JUDGE PESLAK: Mr. Shaw?

15 MR. SHAW: Yes.

16 JUDGE PESLAK: Back to limitation 5B, I don't recall seeing the
17 argument in Patent Owner's response or sur-reply you just made that they
18 hadn't shown the width of the vehicle, including the wheel. Can you tell us
19 whether you actually made that argument?

20 MR. SHAW: Yes, Your Honor. Give me one second, please. So it is
21 in -- so in the Patent Owner response, from pages 56 to 57, we talk about
22 how the measurements on Figure 5D failed to show what they're trying to
23 show, and then they came back and talked about the post. And then when
24 we get into the surreply at pages 26 and 27 is where we talked about how
25 that doesn't show the width of the vehicle, even.

26 JUDGE PESLAK: Okay. I'll read that before we do our final written

1 decision.

2 MR. SHAW: Thank you, Your Honor. And then, last, I just want to
3 touch on Claims 8 and 9. So these require that the vehicle can spin around a
4 vertical axis. The vehicle can rotate around a vertical axis, right? So first,
5 they point to the fact that one of the wheels in Raizer can rotate around a
6 vertical axis. But the problem with that is the claim requires the entire
7 vehicle to rotate about a vertical axis, and wheel and vehicle are different
8 terms that mean different things. And in fact the '632 uses those terms in the
9 same sentence to refer to different things when it's talking about the zero
10 turn capability, so that's in column 8, lines 37 through 54.

11 And so failing that, they say, okay, well but Hangzhou's vehicle can
12 rotate about a vertical axis, so the claim is still met anyways. And there's
13 two problems with that. Number one, again, they're not relying on
14 Hangzhou's vehicle. They're relying on Raizer's vehicle, they've told you
15 that.

16 And number two, as I mentioned before, the only reason Hangzhou
17 says his vehicle can rotate around a vertical axis is because it's symmetrical,
18 and they're arguing that Raizer's vehicle is not symmetrical. So they haven't
19 proven that the combination meets the elements of Claims 8 and 9 either.

20 And unless any of Your Honors have any questions, I will reserve the
21 remainder of my time for reply.

22 JUDGE GERSTENBLITH: Thank you.

23 MR. SHAW: Thank you.

24 JUDGE GERSTENBLITH: You have a little over 12 minutes. And
25 when we return, we have Petitioner with a little over 13 minutes. And we'll
26 take a five-minute recess, and we'll come back at 2:55. Thank you.

1 (Whereupon, the above-entitled matter went off the record at 2:50
2 p.m. and resumed at 2:57 p.m.)

3 JUDGE GERSTENBLITH: You may be seated. Mr. Haynes,
4 whenever you're ready, you can proceed with your rebuttal.

5 MR. HAYNES: Give me just a minute to get plugged back in up
6 here.

7 JUDGE GERSTENBLITH: Sure.

8 MR. HAYNES: Judge Peslak, can you see the demonstratives?

9 JUDGE PESLAK: If you could give me a number, that'd be fine.

10 MR. HAYNES: Okay. I'm going to skip around a little bit, if that's
11 all right. Let me just try to address a few of the issues that were raised. I
12 don't have time to address all of them. I believe all of them were addressed
13 in our briefing. But let me just start out with all of the arguments they're
14 making about lack of motivation and lack of success. These are things that,
15 to believe them, you've got to read either something entirely into the
16 reference or ignore what the reference actually says.

17 So if you start with the notion that Raizer is supposed to provide
18 flexibility, and the robot is supposed to be able to travel anywhere on the
19 floor, and you're supposed to be able to use that system in any existing
20 warehouse. Well, if that existing warehouse has defined travel pathways
21 under a rack, Raizer is going to use them.

22 So their argument that it doesn't work in all warehouses is actually the
23 opposite of what we should be looking at. We should be looking at does it,
24 would it work in a warehouse to allow under-rack travel, because Raizer
25 itself places no limitation whatsoever on where the robots can travel on the
26 floor. It says you can travel wherever you want to go.

1 Second, this notion of retrofitting. There seems to be an impression
2 that by retrofit, that means plug and play. You don't change a thing. You
3 just put the rails up and walk away and everything works the same as it did
4 before. That's not what Raizer is talking about -- that's not what Raizer is
5 talking about when it talks about flexibility and being able to adapt. You're
6 not -- you're going to have to make some changes, but Raizer gives you the
7 flexibility to take full advantage of what the warehouse allows you to do.

8 And a person of ordinary skill knows that you can change the shelves.
9 That's common sense. Packages are different sizes, and they're going to
10 change over time. This notion that moving a shelf is somehow impossible or
11 incredibly cross prohibitive, that is not disclosed in Raizer at all. It doesn't
12 say that. It just says we want flexibility, and we want to maximize that
13 flexibility, and their robot gives you full capability. And to take advantage
14 of that full capability, you're going to use everything at your disposal -- in
15 your disposal to maximize the travel paths along the floor.

16 That leads us to the second issue, which is they say Raizer already
17 solved the problem. And I think their slide 29. But their argument is that
18 because the Raizer robots are self-learning, and because they can organize
19 the routes of traffic in and around the warehouse to reduce congestion and
20 prevent traffic jams when they're busy filling orders, they solved the
21 problem. But that doesn't say that they solved the problem by limiting the
22 robot travel above the floor, across the rails. It says in and around the
23 warehouse. Around the warehouse is when it's traveling on the floor.

24 This is saying our robots are smart. We solved the problem because
25 you can direct our robots anywhere you want to send them, and that
26 flexibility is what solved the problem.

1 Now this notion that it's somehow redundant, these solutions are not
2 redundant. Raizer improves on the prior art because it allows some
3 pathways above the ground, and that does help with congestion. And there's
4 no -- it's not quantified in any way in Raizer, but let's just say that's 20
5 percent improvement on congestion. But it's not redundant to also take
6 advantage of Raizer's teaching that you can travel anywhere on the floor and
7 turn the robot as you wish to get even less congestion and avoid more traffic
8 jams.

9 So you can take the ability to climb up, that gives you some
10 improvement, and you can take the express teaching that routing the robots
11 around the floor using their capabilities can provide additional advantages.
12 Those are not redundant. Those are additive things. And Raizer actually
13 suggests you can use both in the sentence that they point to on Patent
14 Owner's slide 29.

15 The next point is the notion that Hangzhou, when you go under the
16 aisles, teaches that by going -- sorry, under the rack and crossing an aisle,
17 that that somehow creates collisions that you otherwise would not have.
18 That's not what Hangzhou says. It says there may be collisions between a
19 lifting robot and a stacking robot, and therefore you've got to run an
20 algorithm to make sure those things don't run into each other. But that same
21 problem exists if you've got two of the same kind of robots where some are
22 climbing up and some are on the ground.

23 There was a suggestion that Hangzhou somehow says that the floor
24 robot should never travel in the aisles. It does not say that. They pointed to
25 one specific embodiment in Hangzhou where it says, preferably you're not
26 traveling in the aisles with the floor robot. You let the lifting robot travel in

1 the aisles. And that's disclosed in one of the embodiments there. But if you
2 look at paragraph -- well, start with Figure 10 of Hangzhou.

3 And you can see in Figure 10, which I'll have it on the slide, but you
4 can follow along. You can see in Figure 10 the floor robots are traveling
5 down an aisle in the center. That's one embodiment. And there's nothing in
6 Hangzhou that says the floor robots can't travel in the aisles. In fact,
7 Hangzhou also specifically says that the pathways that it discloses are not
8 exclusive in any particular embodiment, and that you should maximize all
9 possible pathways to be in the most efficient situation for that given
10 warehouse.

11 So far from saying, don't send a floor robot into the aisle. It's saying
12 here's a bunch of different pathway options. You should consider all of
13 these. You might use some of them in one part of the warehouse, you might
14 use some of them somewhere else, but it doesn't limit it to floor robots only
15 traveling underneath the shelf, and it certainly does not suggest that the only
16 reason you travel under a shelf is because you have a two-robot system. It's
17 not what it says.

18 And the fact that in the particular embodiment it's talking about you
19 could have a collision between a lifting robot and a floor robot, those
20 collisions are floor collisions when you have robots moving around. You
21 have to make sure that those pathways are not going to run into each other
22 and intersect at the same time. That's what routing algorithms do. And
23 Hangzhou gives an example of one algorithm where you could wait for a
24 second and let the lifting robot go by. But if you're maximizing the abilities
25 of the robot in Raizer, it gives you all sorts of options, right? You can take a
26 different path, you can go up, but all pathways yields greater efficiency and

1 flexibility.

2 Raizer is not about some rigid system that can only be used in one
3 warehouse. It's about the ability to use that robot's capabilities to make that
4 warehouse efficient, because that robot can travel anywhere you want on the
5 floor, and it can travel up and across the racks as well. But the fact that it
6 can travel across the racks does not suddenly mean you're not going to have
7 collisions on the floor. You've got to get from the picking station to the
8 specific point where you can climb up the rack. And if there's multiple
9 points around the floor, those robots, as they're getting to those points, are
10 going to block the access.

11 You know, if I've got an anchor point on the left side of a rack and an
12 anchor point on the right side of the rack, my picking station's on the left,
13 there's going to be congestion. There's going to be potential collisions and
14 blocking. Having more paths allows you to choose how to go around that,
15 and that's what a person of ordinary skill in the art would understand from
16 Raizer, which again, places no restrictions on what you can do. You've got
17 to use your common sense and the tools that are available to a POSITA at
18 the time.

19 Who knew traveling underneath the shelves provides additional
20 flexibility? Gordon said that back in 2016, and then Hangzhou tells you all
21 sorts of pathways that you should look at and try to take advantage of in
22 your warehouse. So that combination absolutely discloses the method of
23 these claims.

24 Now, there seems to be some suggestion that the only way you can
25 render it obvious is if the only possible way you could implement Raizer
26 was this way. That's not the test, right? You could implement Raizer in a

1 warehouse and you might make a choice that you don't want to go
2 underneath, but Raizer says I can implement it in any warehouse, including
3 warehouses that already have defined under-shelf traffic. If you do that, you
4 practice the pattern.

5 JUDGE MARSCHALL: Could you address Patent Owner's survey
6 mapping argument? And I think there's two parts to it. One is that it's
7 required, not optional, in Raizer. And also that the proposed combination
8 doesn't contemplate replacing that proprietary software with something else
9 that a POSITA might be able to come up with.

10 MR. HAYNES: Yeah. So if you look at paragraph 33 of Raizer, it
11 says, in embodiments of the system of the invention, the processor of each
12 robot is preloaded with dedicated software, which includes the warehouse
13 layouts, routes, intersections, and designated areas. Now, in the paragraph
14 that they pointed to, there's a parenthetical that says this is created in a
15 survey mode of the robot. But it does not say that's the only way that it can
16 be created, and it also doesn't say that it is required for every embodiment.

17 What you have to have is you've got to know the warehouse layout.
18 But there's nothing in Raizer that says, you can't use our system if you can't
19 map it. Now, again, the notion that survey mode is not applicable and you
20 can't use that survey mode of Raizer in any warehouse, we disagree with that
21 to begin with. The challenge is that you would need better sensors, and that
22 because the robots in Raizer are supposed to use less advanced censoring
23 when traveling on the floor, you would not use these better sensors for that.
24 But it discloses fine positioning sensors and better sensors. That's disclosed
25 in Raizer.

26 And it doesn't say you're not using those sensors when you're in this

1 survey mode. Their only argument is you would need better sensors than
2 what you would use for the -- I just forgot the acronym, the target, you
3 know, target point navigation. But it has other sensors and you can use
4 those other sensors in survey mode. And survey mode, you're not running
5 every time. You could also have one robot that you create to create a survey
6 mode and that gets preloaded on every other robot.

7 But the point being there's nothing in here that says, hey, if you can't -
8 - if you have to travel under a shelf, you can't use our system because our
9 mapping mode would somehow break down and we wouldn't be smart
10 enough to figure out to tell the robot that, hey, here's a pathway underneath
11 the shelf. And it also doesn't say you have to create that with sensors, right?
12 That mapping mode can be created by the robot from any variety of things,
13 including loading up, you know, floor plans or whatever. There's no
14 restriction on that. That's the point.

15 They're sort of saying you have to do it this way to even get started.
16 But the patent says in some embodiments, you're going to preload this. It
17 doesn't even say you have to preload the map in all embodiments, and that
18 would make sense because the robots, they're self-learning. They're
19 supposed to be able to teach themselves, you know, along the way. That's
20 what Raizer actually says. The robots are capable of self-learning.

21 And their argument is don't read that sentence, don't read that. Don't
22 believe that those robots are truly self-learning and can truly map themselves
23 because our expert thinks that multi-path effects would make that too hard.
24 But that's all you've got. He doesn't point to a single example of an
25 autonomous warehouse system where that was an issue, where multi-path
26 effects made it so that you could not drive a robot in the way that Raizer

1 specifically says you're supposed to drive it.

2 It's a self-learning robot that can communicate with a central
3 controller. Either one of those things, alone or working together, can define
4 travel routes using known techniques that both the '632 patent and Raizer
5 acknowledge were out there. And nobody's claiming that the '632 patent
6 was a brand new sensor that allows you to travel under the racks. You didn't
7 need one.

8 Let me just briefly address the argument on 5B. Again, we are well
9 aware that you can't rely on precise dimensions of a drawing to claim
10 dimensional aspects. I would submit that in this instance the drawing itself,
11 we're not talking about some millimeter mathematical measurement, we're
12 talking about a relative. Is it longer than it is wide? There's nothing in ratio
13 to suggest that the robot is wider than it is long. In fact, the figure shows it's
14 much longer than it is wide, and the spec that we point to says that the
15 support beams are longer than they are wide.

16 And we heard today for the first time, I told you when I got up the
17 first time, I wasn't sure what they're going to say. That's because I didn't
18 know the argument we heard today because it's not in their papers that the
19 measurement we're relying on is not the right measurement because it
20 doesn't extend to the end. But we disagree with that argument. It is a new
21 argument and it's too late to have made it. But what is shown there does
22 meet the limits because the support structure for the body of that robot is
23 longer than it is wide. And yes, the wheels extend a little bit further, but that
24 makes it longer. It doesn't make it wider.

25 JUDGE MARSCHALL: Could you address the argument about 5C
26 that Hangzhou is a square essentially, so it spins around in a different

1 manner than it would if applied to Raizer?

2 MR. HAYNES: So Hangzhou says, preferably to turn 90 degrees
3 under the rack is advantageous and it is symmetrical. It does not say that's
4 the only way you can do it. It doesn't say we're limited. The only way you
5 can turn under the rack is for it to be symmetrical. But Raizer says those
6 two front wheels, you can control them. You can control them
7 independently, right? And go forward and then go backwards, and both of
8 them can turn around a vertical axis of 360 degrees.

9 So that robot, you turn one wheel one direction, the other will go in
10 the other direction, it's going to spin like this. It doesn't matter whether it's
11 symmetrical or not. The Raizer robot is capable of turning on an axis. Now
12 is it going to be a little bit wider circle as it turns because it's not a square?
13 Yes. But it doesn't -- and then is it enabled to turn underneath the rack?
14 Yes. And that's all that's required. And Hangzhou doesn't say you can't turn
15 if you're not symmetrical. It just says preferably it's better if you're
16 symmetrical. And unless you have other questions, I believe that's all. I
17 might be a little over the time.

18 JUDGE GERSTENBLITH: Judge Peslak, do you have anything else?

19 JUDGE PESLAK: No, I don't.

20 JUDGE GERSTENBLITH: Okay. Thank you very much.

21 MR. HAYNES: Thank you, Your Honor.

22 JUDGE GERSTENBLITH: Mr. Shaw, just so you know, because
23 Petitioner went a little bit over, I added the two minutes onto your rebuttal
24 time to make it even.

25 MR. SHAW: I appreciate that, Your Honor. Thank you very much
26 for letting me know.

1 JUDGE GERSTENBLITH: And whenever you're ready, you can
2 start.

3 MR. SHAW: Great. So, ready to go. First of all, I do want to point
4 out. So, Counsel just said that this idea that the, you know, the wheels are
5 wider or that the vehicle is wider than that short beam 12, that that's
6 somehow a new argument. And I just want to point out in response, Judge
7 Peslak, also to a question that you asked me before.

8 If you look at page 57 of the Patent Owner's response, we argued with
9 respect to Raizer Figure 5E, that the micro pallet lifters of this device also
10 stick out to the sides further than the short beam, they telescope out to the
11 sides. And we pointed out that that's another reason that it's not clear and
12 they haven't proven that the vehicle is longer than it is wide.

13 The other thing I want to mention is that Counsel just made an
14 argument about the idea that Raizer's vehicle can somehow utilize a zero
15 turn capability by running its wheels in opposite directions. That's a brand
16 new argument. That's never been made before. The only argument they
17 made about Raizer being able to rotate about an axis was the wheel not the
18 vehicle itself.

19 And I also want to point out something that Counsel just said about
20 Hangzhou. If you turn to Patent Owner's Slide 91. Counsel said that the
21 Hangzhou trolleys can spin in place regardless of whether they're
22 symmetrical or not, and that Hangzhou somehow equivocates about that.

23 If you look in paragraph 48 up here on the top right of our Slide 91,
24 you can see what Hangzhou actually says, and he says trolleys are generally
25 designed in symmetrical so that they can turn in place. It's symmetrical that
26 allows it to be able to turn in place. It's not an equivocal thing that you don't

1 have to follow in order to be able to turn in place in Hangzhou. Now the
2 other thing I want to talk about, Counsel talked about retrofitting and --

3 JUDGE GERSTENBLITH: Let me just ask you about this.

4 MR. SHAW: Sure.

5 JUDGE GERSTENBLITH: Why does it have to turn in place?

6 MR. SHAW: Why does -- sorry, Your Honor. Why --

7 JUDGE GERSTENBLITH: What part of the claim requires the robot
8 -- the vehicle to turn in place?

9 MR. SHAW: I don't have it right -- so there is a -- well, actually let
10 me back up. We're talking about Claim 5. Let me get back to the slide,
11 Your Honor. I apologize.

12 JUDGE GERSTENBLITH: I think it's 5C, but I don't see that in 5C.
13 So that's why I'm trying to understand why we're talking about this.

14 MR. SHAW: Okay. Yeah, and I'll tell you. So it says that the -- I
15 apologize, Your Honor. I was talking about Claim 8, right? And so, yeah,
16 Claim 8 requires turning the vehicle about a vertical axis that extends
17 through the vehicle, and Claim 9 depends on Claim 8. It has that same
18 requirement.

19 JUDGE GERSTENBLITH: So are you saying that if you have to turn
20 about an axis that extends through the vehicle, why does it have to be the
21 middle of the vehicle? Can't that axis be anywhere in the vehicle? It's just a
22 vertical axis, right?

23 MR. SHAW: I'm just responding to what they pointed to, which is
24 Hangzhou is symmetrical and that's the reason it can turn in place.

25 JUDGE GERSTENBLITH: But is anybody debating that Raizer can
26 do what satisfies this?

1 MR. SHAW: Yeah, the only thing they pointed to is that Raizer's
2 wheel can turn about an axis. That was their argument in briefing, and that
3 satisfies this claim limitation. And I think what we've said is the wheel is
4 not the same. This requires the whole vehicle to be able to turn about an
5 axis. And I mentioned before, the '632 patent uses wheel and vehicle to
6 mean different things, and I think any -- it's, you know, plain as day --

7 JUDGE GERSTENBLITH: So I'm missing something. So if the
8 wheels allow the vehicle to turn, then how does the vehicle not turn?

9 MR. SHAW: I see what the problem is. So what Raizer says is it
10 talks about what the one individual wheel can rotate. It doesn't talk about
11 using the wheels in their argument. The part they're pointing to doesn't talk
12 about using the wheels to rotate the vehicle. So the wheel is kind of like a
13 caster that hangs on a post and it can just spin around an axis, the wheel
14 itself. That's different than what he just said in his reply about how the
15 vehicle has a zero turn capability. They haven't ever pointed to that. It's
16 never been argued before.

17 JUDGE GERSTENBLITH: So let me just make sure I understand.
18 You're talking about in their petition page 49?

19 MR. SHAW: Yes.

20 JUDGE GERSTENBLITH: Two drive and steering units where each
21 one comprises a front wheel configured to rotate the front wheel at least 360
22 around a vertical axis, that that is not rotating the vehicle also?

23 MR. SHAW: I agree, that's rotating just that wheel. That wheel is
24 able to rotate around an axis.

25 JUDGE GERSTENBLITH: Okay. And then you're saying that the
26 second piece, if it doesn't -- Raizer doesn't do that. Hangzhou has that, and

1 you're saying Hangzhou doesn't have that because why?

2 MR. SHAW: I'm saying number one, they haven't relied on the robots
3 of Hangzhou, and number two, Hangzhou says the only reason that its robot
4 can rotate in place is because it's symmetrical. And Petitioner himself is
5 arguing that the vehicles in Raizer are not symmetrical, so it's a failure proof
6 that the Raizer vehicles could turn in place and --

7 JUDGE GERSTENBLITH: But why do we need to turn in place?
8 That's where I started with this whole thing.

9 MR. SHAW: Because that it could rotate about an axis at all. The
10 only thing they're pointing to -- so I think I understand the confusion now.
11 So the only thing they're pointing to say that in Claim 8 the vehicle can
12 rotate about a vertical axis that extends through the vehicle, the only thing
13 they pointed to is Hangzhou's ability for its vehicle to rotate. But they're not
14 relying on Hangzhou's robot. They're relying on Raizer's robot.

15 And so in order for them to say, well, then Raizer's robot can do it too,
16 it would have to have all the same characteristics that permit it to rotate
17 about an axis. And Hangzhou says that characteristic is the fact that the
18 robot is symmetrical. So the fact that Raizer's robot is not symmetrical
19 would prohibit it from turning about the axis through the vehicle in the way
20 that the Hangzhou portion that they argue from does.

21 JUDGE GERSTENBLITH: Okay. Thank you for clarifying.

22 MR. SHAW: Sure.

23 JUDGE GERSTENBLITH: I asked a lot of questions, so if you need
24 an extra minute or two, it's fine.

25 MR. SHAW: No, I appreciate it. Thank you, Your Honor. The other
26 thing I want to talk about, so, Counsel talked a little bit about what

1 retrofitting means in warehouse in Raizer. Retrofitting refers to keeping the
2 capital equipment, keeping the structures that are already in the warehouse.
3 And paragraph 86 is just one example when it's talking about the picking
4 station. It says, the structural components of the picking station are
5 generally those that were present in the warehouse prior to retrofitting the
6 warehouse, but the picking station software is dedicated to interface with a
7 new system.

8 So Raizer, again, when he retrofits, he wants to keep your capital
9 equipment because as we talked about before, he wants to avoid large capital
10 expenditures and he wants to avoid reorganizing the physical structure of
11 your warehouse. So that's what retrofitting means. Counsel also, again, sort
12 of reiterated this idea that Raizer can avoid congestion by going anywhere
13 on the floor and sort of seemed to imply that Raizer itself can drive under the
14 shelves. Again, they've never relied on that. They've never pointed to any
15 disclosure of that in Raizer.

16 With respect to Hangzhou paragraph 59, and that's shown on Patent
17 Owner's Slide 32. So what Counsel said is, well, the collisions between the
18 vehicles in the aisle and the vehicles under the rack, I thought I heard him
19 say it doesn't matter what type of vehicles they are. It doesn't have anything
20 to do with the two different types of vehicles in Hangzhou. Exactly our
21 point. Our point is, anytime you have vehicles driving in the aisle and other
22 vehicles driving under the rack, Hangzhou tells us you're going to create
23 potential collisions, and that's one of the biggest problems with this
24 combination.

25 They mentioned Figure 10 of Hangzhou. I don't think that's ever been
26 relied on either, so I just want to point that out. And then last with respect to

1 survey mode. So, Counsel pointed you to paragraph 33 which says the
2 software can be -- which says software can be pre-loaded in embodiments of
3 the invention. Notably, paragraph 33 of Raizer never mentions survey
4 mode. It's what we talked about before, the survey mode creates the map
5 then you have the software that includes the map.

6 And paragraph 33 says, in some embodiments, you can preload that.
7 In other embodiments, presumably it creates the map in real time. But in
8 any event, paragraph 84 tells us that the way you create the map in the
9 invention of Raizer, it's required in Raizer, is using the survey mode. So the
10 idea that the survey mode is somehow optional, we disagree with. We think
11 Raizer tells you otherwise in paragraph 84. Can I have one second to confer
12 with my co-counsel?

13 JUDGE GERSTENBLITH: Yes.

14 MR. SHAW: That's all I have, Your Honor. Thank you so much for
15 your time today.

16 JUDGE GERSTENBLITH: Thank you. Any other questions, Judge
17 Peslak?

18 JUDGE PESLAK: I don't have anything further, thank you.

19 JUDGE GERSTENBLITH: Okay, great. Thank you very much,
20 Counsel.

21 MR. SHAW: Of course, thank you. May I step away from the
22 podium now?

23 JUDGE GERSTENBLITH: Yes, you may.

24 MR. SHAW: Great, thank you.

25 JUDGE GERSTENBLITH: Thank you all very much for coming.
26 Please stay for a few minutes in case the court reporter has any questions on

1 spellings for the transcript. I hope everyone stays safe and has a great rest of
2 the summer.

3 The case is submitted, and we are adjourned. Thank you.

4 (Whereupon, the above-entitled matter went off the record at 3:25
5 p.m.)

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