

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
Petitioner,

v.

GENERAL ACCESS SOLUTIONS, LTD.,
Patent Owner.

IPR2023-00978
Patent 7,230,931 B2

Record of Oral Hearing
Held: September 17, 2024

Before: MELISSA A. HAAPALA, *Acting Deputy Chief Administrative
Patent Judge*, and KEN B. BARRETT, TERRENCE W. McMILLIN,
Administrative Patent Judges.

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IPR2023-00978
Patent 7,230,931 B2

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The above-entitled matter came on for hearing on September 17, 2024, commencing at 1:00 p.m., via video teleconference.

The Board joined Ericsson Inc. and Nokia of America Corporation as petitioners in this proceeding in IPR2024-00392 and IPR2024-00461, respectively.

P R O C E E D I N G S

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JUDGE BARRETT: Good afternoon, everyone. We are on the record in IPR2023-00978, Cellco Partnership D/B/A Verizon Wireless versus General Access Solutions. Additionally, we have Ericsson Incorporated and Nokia of America Corporation. They have joined as Petitioners in this proceeding. This hearing today is being conducted by video conferencing. I am Judge Barrett and with me today are Judges Haapala and McMillin. And I'd like to start with getting the parties' appearances. So, who do we have from Petitioner today?

MR. ROSENTHAL: Excuse me, Your Honor, good afternoon. For Petitioners, or for Petitioner Verizon, we have Brian Rosenthal. Arguing with me on the line should be Justin Oliver from the Venable firm, lead counsel in the case. I'm not seeing him, but he should be here.

JUDGE BARRETT: Okay, thank you. And for Patent Owner?

MS. SPIRES: Good afternoon, Your Honors. Sarah Spires from Skiermont Derby on behalf of General Access Solutions.

JUDGE BARRETT: Okay. Thank you. And do we have anybody else on the line, for example, from Ericsson or Nokia? Anybody else want to enter an appearance?

MR. WALTERS: Yes, Your Honor. This is Chad Walters, lead counsel for Petitioner Ericsson in IPR2024-00392, which has been joined with this proceeding.

JUDGE BARRETT: Welcome. All right, hearing nothing else, I think we'll go ahead and proceed.

1 MR. ROSENTHAL: Your Honor.

2 JUDGE BARRETT: Oh, yes.

3 MR. ROSENTHAL: I'm sorry, it's Brian Rosenthal. I see a note
4 in the chat for Mr. Haynes saying that he's unable to join the phone back up.

5 JUDGE BARRETT: Okay. And who is Mr. Haynes with? Who is
6 he representing?

7 MR. ROSENTHAL: I'm not sure.

8 JUDGE BARRETT: Okay. Well, at least it seems like we have
9 the primary players with us today. Our IT people, our video conferencing
10 people are outstanding. I'm sure they will help Mr. Haynes get connected
11 and hopefully he won't miss out on too much. I see his name.

12 MR. HAYNES: This is John Haynes. I seem to have gotten
13 working. Can you hear me now?

14 JUDGE BARRETT: Yes, we can. Excellent. Thank you for
15 joining us. Who are you with? Who are you representing, Mr. Haynes?

16 MR. HAYNES: I represent Nokia of America Corporation.

17 JUDGE BARRETT: All right. Welcome.

18 MR. HAYNES: Apologies for being a technical glitch.

19 JUDGE BARRETT: Absolutely no reason to apologize. This
20 happens. And we will -- I'm glad you're with us and we will be able to move
21 along. So, we did set forth a procedure for today's hearing in our oral
22 argument order, but just to remind everybody how this is going to work.
23 Petitioner will have 60 minutes total time to present its arguments and Patent
24 Owner also will have 60 minutes total. Petitioner will go first and may
25 reserve some time for rebuttal. Patent Owner will then have its opportunity

1 to present its response and also may reserve time for a brief sur-rebuttal.

2 Then of course, Petitioner presents rebuttal, Patent Owner, sur-rebuttal.

3 We do have your demonstrative exhibits, both parties' exhibits, and
4 we have those pulled up on our computers. Feel free if you like, you may
5 share your screen and present those yourself. Otherwise, if you just direct
6 us, we can follow along. And along those lines, for clarity in the transcript
7 and to assist us in following along, when you do refer to a demonstrative
8 exhibit, even if you're sharing your screen, please state the slide number for
9 the record. That makes it so much easier when we were doing the transcript
10 and understanding your arguments. And if you refer to any other exhibit
11 from the record that's not in a demonstrative, if you would please give us a
12 chance to pull that up, but also please reference that by the exhibit number,
13 page number, column line, whatever it takes so we can easily identify that
14 later.

15 This hearing today is open to the public and there is an open line. I
16 don't expect any confidential information to come out today, but if by
17 chance you sense something might come out, just pause, let me know, and
18 we'll deal with it as is appropriate. That's all I've got. Any questions or
19 concerns for Petitioner? Anything? Are we good?

20 MR. ROSENTHAL: None for me, Your Honor. Thank you.

21 JUDGE BARRETT: Thank you. All right. Ms. Spires, we all
22 good?

23 MS. SPIRES: Good, Your Honor. Thank you.

24 JUDGE BARRETT: Thank you. All right. With that, we can
25 begin. Petitioner, whenever you are ready. And if you could start by telling

1 me how much time you'd like to reserve.

2 MR. ROSENTHAL: Sure. This is Brian Rosenthal on behalf of
3 Petitioner Verizon. I'd like to reserve 15 minutes for rebuttal please.

4 JUDGE BARRETT: Okay, 15 minutes. Thank you.

5 MR. ROSENTHAL: And I am going to share my screen. I'm
6 going to refer to our demonstratives, which are Exhibit 1034. And I want to
7 start just by framing the overview of what is at issue in this petition. And
8 then talking a little bit about how I'd like to proceed. Although, please feel
9 free to direct me to any parts of the argument you're rather talk about.

10 But there are five grounds that were instituted in this petition. The
11 first two grounds are Vornefeld as the base reference and either Atsuta or
12 Goldberg as the secondary reference. Ninety percent of the briefing is
13 focused on those and I suspect that a great deal of the argument today will be
14 based on and speaking about those for good reason.

15 Ground three is Youssefmir as the base reference, with Atsuta as
16 the secondary reference. I'd like to address that and address any questions
17 the Board has on that as well today. The fourth and fifth grounds are really
18 alternative grounds to Grounds 1 and 2, and just add Tangemann, as
19 necessary. I'm not sure that we necessarily need to discuss those two
20 grounds today, but of course I'm happy to address any questions that the
21 panel has on those.

22 JUDGE BARRETT: I do have a question on those. This is Judge
23 Barrett. Unless I missed it, I don't believe I saw that referenced in
24 Petitioner's reply, and of course you don't necessarily have to say anything to
25 preserve it. But so, am I correct, those two grounds are still live issues in

1 this case?

2 MR. ROSENTHAL: They are live, Your Honor. We did not feel
3 the need to address it with any substance, it may be we didn't address it at
4 all, but certainly we didn't focus on it. And the reason for that is we saw
5 very, very little -- I think it was given a one page response in the response,
6 Patent Owner's response, and essentially the argument was for all the same
7 reasons on Ground 1 and 2, the same deficiencies applied to the
8 combinations set forth in Grounds 4 and 5. So, we didn't see anything
9 peculiar or necessary to respond to on those grounds.

10 JUDGE BARRETT: Okay. Thank you for that clarification.

11 MR. ROSENTHAL: You're welcome. So, I would like to just talk
12 about my plan for what I'd like to address today. I want to start with talking
13 about how the challenged claims, of which there are only two, 28 and 29,
14 and they depend from Independent Claims 1 and 19, respectively. Both of
15 those claims, as the Board knows, were held to be unpatentable. The
16 Independent Claims 1 and 19 were held to be unpatentable in the prior IPR
17 that Sprint filed, and the unpatentability of those was final, and Claims 28
18 and 29 were the only claims that survived that first IPR.

19 So, I do then want to talk about what happened in that Sprint IPR.
20 There has been some discussion in the papers about that. I think it's very
21 important to ground this discussion as we separate out what is actually in
22 dispute in this petition and what is not in dispute because it has been
23 conceded and adjudged against General Access.

24 Finally, I want to address the actual disputed issues with respect to
25 the instituted grounds of which there are actually quite few. So, if we start

1 just from a high level, the two claims that are at issue here are Claims 28 and
2 29. As I just mentioned, Claims 1 and 19, from which those two claims
3 depend, have already been conceded to be in the prior art. Specifically,
4 they've been conceded to be disclosed in full by Vornefeld. And as a result
5 of that concession, the PTAB has already found those claims to be
6 unpatentable, and they were canceled, and that's the end of the story for
7 those independent claims.

8 So, the only issue now is whether the additional subject matter that
9 is added by Claims 28 and 29 is obvious in view of the secondary references
10 that we've provided.

11 A quick history of what happened in the Sprint IPR. There was
12 some mention by General Access in the briefs in this petition that suggested
13 that the prior panel had already addressed some of the arguments that we are
14 raising in this petition. That is absolutely untrue. In 2017, Sprint was
15 engaged in a litigation against General Access, and Sprint challenged Claims
16 28 and 29 on three grounds. But the only thing that they argued with respect
17 to the specific additional text of Claims 28 and 29 was that Vornefeld
18 disclosed those elements. They did not argue that Andersson or Newman or
19 Ahy or any other reference disclosed what's written down in Claims 28 and
20 29. Their sole argument was that Vornefeld disclosed that. And this panel
21 recognized that in its institution decision, paper 43 -- I'm sorry, in its
22 institution decision in this case, I should say, in which it recognized that
23 there was no prior argument with respect to 28 and 29 other than with
24 respect to Vornefeld.

25 And what that prior panel found is that Claims 1, 10, and 19 were

1 conceded to be anticipated, and therefore entered adverse judgment on those.
2 But the remaining claims were found to be patentable, or that Sprint hadn't
3 shown them to be unpatentable. That then went up to the Federal Circuit.
4 The Federal Circuit affirmed with respect to Claims 28 and 29, but
5 remanded with respect to the rest. And on remand, the Board found all the
6 other claims to be unpatentable, leaving the only two claims of this patent
7 still alive as 28 and 29.

8 So, there was some suggestion, especially in General Access's sur-
9 reply, and a little bit in their reply, that somehow they have a sentence or
10 two, with no analysis, but they have a sentence or two suggesting that
11 Vornefeld does not disclose the independent claims. That is not an argument
12 that they can raise here. They have already conceded that Vornefeld
13 discloses those claims. In the prior IPR, we've put in here quotes on our slide
14 7, that General Access said over and over again I'm not disputing the
15 Petitioner has provided good evidence that the independent claims are not
16 valid. They concede that the broadcast beam signal is shown in Vornefeld.
17 They concede that Vornefeld knocks out the independent claims.

18 And the prior panel recognized those concessions in its final
19 written decision and entered adverse judgment against General Access with
20 respect to those independent claims. General Access cannot, at this stage or
21 at any stage, now contest whether or not Vornefeld discloses those
22 independent claims. That issue is over. They conceded it, adverse judgment
23 has been entered. And General Access has cited no law or any support
24 whatsoever in this petition that suggests that it can somehow get a do over
25 because of some alleged difference in view that they would have if a

1 different claim construction might be adopted. They have not made that
2 argument. They have not provided any case law to suggest that. This is a
3 done issue.

4 Now, the reason, and I'm now on my slide 8, the reason that
5 General Access conceded that Vornefeld anticipates the independent claims
6 was not a matter of strategy or convenience. It is because there is no
7 argument to the contrary. We have on this slide, on our slide 8, Claim 1 on
8 the left, and we have the most relevant excerpts of Vornefeld on the right,
9 which is Exhibit 1004. And what we'll do is just walk quickly through each
10 and every element of Claim 1 is clearly and unequivocally disclosed
11 explicitly in the text of Vornefeld. The preamble requires that you have base
12 stations that communicate using TDD with wireless access devices. That is
13 clearly disclosed in Vornefeld, which itself explains that it uses TDD, that is
14 the same frequency for uplink and downlink, to communicate with the
15 plurality of cell sites --cellphones, mobile terminals.

16 The next limitation requires that there be transmit path circuitry
17 that uses directed scanning beams to communicate with certain of those
18 devices within a sector. That is clearly disclosed in Figure 2 and throughout
19 the reference. And you can see in Figure 2 these are the plurality of mobile
20 terminals and there's directed beams going to each of those.

21 JUDGE BARRETT: And if we can hold right there for a second,
22 Mr. Rosenthal. The District Court came up with a construction for sector,
23 and I didn't see a lot of discussion on that in the briefs. But if I'm not
24 mistaken, Patent Owner made the argument that the ULA, the array,
25 constitutes a single antenna, and therefore what we see in this Figure 2 is

1 only one sector. That may be fine for the independent claim, but as we all
2 know, the dependent claim pulls in the concept of another, i.e., a second
3 sector. So, could you please address that?

4 MR. ROSENTHAL: Yes, Your Honor. First of all, in our view,
5 Vornefeld discloses Claim 1 under any construction of sector, number one.
6 Number two, the Patent Owner has not advanced any particular construction
7 of sector in this petition, nor have we. And finally, to answer your question
8 specifically, we agree that what is disclosed in Figure 2 is from a single
9 ULA, that is, it goes to a single sector. We agree with that. And what you
10 have here is a single 120-degree sector from 60 degrees to minus 60 degrees.
11 However, Vornefeld explicitly states that the cell site is split into a number
12 of these sectors and that the broadcast information goes to a number of those
13 sectors, or to all of those sectors. And I'll show you that.

14 And if we go to our slide 56, I have a quote from Exhibit 1004 at
15 page 52 that describes the fact that the cell is divided into a number of areas.
16 In particular, in this example, a triangular configuration of three ULAs might
17 be used to cover the whole radio cell. So, you have an entire radio cell. It's
18 split into three sectors. And then if we go back to our slide 11, at the
19 beginning of the TDD frame that is disclosed in Vornefeld in Figure 3, there
20 is a broadcast channel, BCH. And the text accompanying that figure states
21 that the BCH conveys signaling information concerning the whole radio cell,
22 all three sectors. So, there is no question, and indeed, yes, General Access
23 admitted it. There is no question that the Vornefeld reference, while Figure
24 2 is displaying, depicting a single one of those sectors, the disclosure of
25 Vornefeld clearly states that you have a broadcast that is going to all of the

1 sectors so that the entire radio cell is covered.

2 Now, the only question if we walk through the rest of this
3 language, clearly that frame, which is depicted in Figure 3 has a broadcast
4 beam signal, it's sent to more than one sector, which I just highlighted here,
5 and it is a start of frame field. It is at exactly the beginning of the frame.
6 And it then has a downlink phase, and during that downlink portion it sends
7 downlink data to devices within one of those sectors. All of that is clearly
8 disclosed in Vornefeld. And Claim 19, by the way, the only thing it adds on
9 our slide 13 is that that broadcast beam signal acts to synchronize. That's
10 explicitly stated in Vornefeld as well. It announces the location of the other
11 channels within the MAC frame, that is synchronization, and none of that is
12 disputed.

13 So, what is Vornefeld missing according to the prior panel in the
14 Federal Circuit? There is only one thing. This is on our slide 14. The quote
15 from the prior Sprint IPR, from the final written decision, is that Petitioner,
16 Sprint, did not establish that Vornefeld discloses using different beams in the
17 same TDD frame to transmit to those multiple sectors. So, we have Figure 3
18 from Vornefeld, you can clearly see that there's a broadcast beam at the
19 beginning. There's these spatially separated pieces of information, and what
20 the Board found is it's not clear to us from what Sprint has provided that
21 those are all part of the same frame.

22 And the Federal Circuit found exactly the same thing. This is our
23 slide 15. The Federal Circuit said the Board found, rejecting Sprint's view,
24 that Figure 3 discloses multiple spatially separated frames, transmitted in
25 parallel, rather than a single frame, and repeated that in three locations in the

1 decision. That is the only thing that the Federal Circuit found to be missing
2 from Vornefeld, and the Board found to be missing from Vornefeld. It's a
3 very simple thing, but what they determined was that Sprint did not
4 adequately show that these horizontal lines within Figure 3 are in fact part of
5 the same frame, that they are in fact multiple frames. So, that's the singular
6 question that was left unanswered by the prior petition. So --

7 JUDGE MCMILLIN: Mr. Rosenthal, this is Judge McMillin.

8 MR. ROSENTHAL: Yes, Your Honor.

9 JUDGE MCMILLIN: Do we need to engage in claim construction
10 in order to decide this case?

11 MR. ROSENTHAL: I don't believe so, Your Honor. In our view
12 Vornefeld clearly discloses everything within Claim 1 and 19, (a) because it
13 was conceded to be so, and (b) because it clearly discloses under even the
14 most narrow construction of sector that it has broadcast information going to
15 multiple sectors. So, from our perspective it doesn't matter what the claim
16 construction is. If sector were broader, then Vornefeld would even more
17 disclose those.

18 And then when we get to Claims 28 and 29, again the references
19 that we rely on unambiguously use the same version of sector that everyone
20 in the industry understands, which is the range of an antenna. I'm
21 paraphrasing, but specific to an antenna. The references we rely on use that
22 narrow definition of sector. And so, there is no need to construe the word
23 sector to be broad or narrow, because even under the narrowest reading of
24 sector, Vornefeld discloses sectors, and the secondary references disclose
25 sectors.

1 So, and I think that's why -- I know that's why we did not propose
2 a construction. And I suspect that's why Patent Owner did not propose a
3 construction.

4 JUDGE BARRETT: All right. Mr. Rosenthal, before you move
5 on, I'm going to make more of a statement than a question, and then you can
6 address it whenever you feel appropriate during the presentation. So, help
7 me -- help educate me here. We've been talking about sector. The District
8 Court's construction put it in terms of an antenna. Basically, a sector
9 coincides with one antenna. So, my understanding of Claim 28 is it adds
10 this concept of we have to have a second sector, which means we have to
11 now have two antenna if I understand this correctly. And if, again, if I
12 understand the claim correctly, the overall claim is directed to a single
13 transceiver. So -- so, I guess I will ask a question. How does a transceiver
14 relate to an antenna? And can one transceiver control two antennas?

15 MR. ROSENTHAL: Those are great questions, Your Honor. And
16 as you are likely aware, because it's in the briefs, we just had a trial between
17 these two parties to this petition, Verizon and General Access. And that was
18 an issue that was discussed at length at the trial. It is not something that was
19 part of the briefing in this petition. But what General Access said
20 vociferously over and over, including in the closing statement, is that the
21 claim is not limited to a single transceiver. It says a transceiver, which can
22 be one or more transceivers. This was an argument that they made
23 repeatedly in their closing argument.

24 And so, and the reason for that, by the way, was that the system
25 that they accused of infringement had three antennas. Like you see on the

1 roads, when you drive by a cell tower, you'll see three different antennas.
2 And their argument was that a transceiver is broad enough to cover all three
3 of those antenna. Now, whether that's right or wrong, there's nothing in the
4 claim that prohibits the existence of multiple antenna or multiple antenna
5 constituting a transceiver or one or more transceivers. The claim is agnostic
6 as to that issue, in our view, Your Honor.

7 I don't know if that answers the question, but it certainly is broad
8 enough to cover as long as you are sending a TDD frame to multiple sectors,
9 it is broad enough to cover a situation where you have a single antenna
10 doing that or multiple antennas doing that. And if the Court's claim
11 construction were the controlling claim construction, which is that the sector
12 and the antenna are sort of related to each other in a one-to-one manner, then
13 by definition you would have to be dealing with multiple antennas.

14 JUDGE BARRETT: Okay, I think I followed that. And I thought
15 that was very helpful. And if I sound a little apprehensive, it's on my end,
16 not on yours. But, and I'll go back, of course, and we'll review the claim
17 again. But it feels like every limitation that's recited between Claim 28 and
18 then the underlying limitations of Claim 1 all have to be in a single
19 transceiver. And again, as I understand the District Court's construction, that
20 requires effectively two antennas because we have to address two different
21 sectors. And I don't totally understand, I'll be quite forthright about this,
22 about how a transceiver relates to an antenna. So, you talked about we drive
23 by a cell tower, we see three things at the top of that. Let's call those three
24 antennas, if I'm using terminology correctly. Is that typically going to be
25 three transceivers or one transceiver for three antenna?

1 MR. ROSENTHAL: So, that just depends on terminology. I think
2 it would be fair to call that a single transceiver that has three antenna as part
3 of it. I think it would be fair to call that three transceivers. A transceiver is
4 a device that transmits and receives. I will say this though, General Access
5 just won hundreds of millions of dollars in a verdict by convincing a jury
6 that a transceiver covers multiple antenna. So, there cannot be an argument
7 consistent with that, and by the way, General Access has not made that
8 argument in this petition that somehow this claim cannot read on multiple
9 antenna because it says a transceiver.

10 So, to answer your question, I think that you could read it either
11 way, that a transceiver could be composed of, comprised of multiple
12 antenna, or you could say a transceiver in the claim, in quotes, can refer to
13 one or more transceivers, or one or more antennas. Either way, the prior art
14 that we have set forth in this petition clearly has circuitry that includes
15 multiple antenna that cover the entire radio cell, and General Access has
16 already conceded that that configuration in Vornefeld discloses the
17 transceiver of Claim 1.

18 And so, now the only issue that remains, and I'm now going to go
19 to our slide 16, the only issue that remains is a very simple one is whether
20 sending the information to multiple sectors through multiple antennas being
21 done in a single frame is obvious because the Federal Circuit and the prior
22 panel concluded that Sprint hadn't shown that Vornefeld discloses that
23 exclusively. And very important to this question is again General Access
24 just prevailed in a trial in which it argued over and over again that the TDD
25 frame is just a timetable. That's all it is.

1 JUDGE HAAPALA: This is Judge Haapala, and I'm going to
2 interrupt you for a minute.

3 MR. ROSENTHAL: Yes.

4 JUDGE HAAPALA: Notwithstanding Patent Owner's arguments
5 in District Court, we have to reach the correct claim construction here. Is it
6 correct to say that a TDD frame has a specific meaning to those skilled in the
7 art?

8 MR. ROSENTHAL: Yes, I think it is. And a TDD frame clearly
9 is an organization of data. Now neither party has proposed a claim
10 construction for this petition, but it is an organization of data that includes an
11 uplink phase and a downlink phase for information to be sent on a single
12 frequency. And I don't think there's any dispute among the parties that that's
13 what a TDD frame is. The reason --

14 JUDGE HAAPALA: Yes, thank you. I'll check with the Patent
15 Owner when it's their turn to argue, but to me some of these sentences -- and
16 again, we're not really concerned with what happened in District Court, but
17 some of these sentences can potentially be inconsistent to me on how
18 somebody skilled in the art would look at a TDD frame. I do think it's
19 something that it has a specific meaning to those skilled in the art. And we
20 could ask for your construction if you think it's important. I don't know if
21 it's important to this proceeding or not, but if you're asking us to have a
22 broader construction, a TDD frame consistent with this, these sentences, and
23 I think probably we would need further briefing on that.

24 MR. ROSENTHAL: Yeah, and Your Honor, we don't believe a
25 construction of TDD frame is necessary at all, and the reason for that is there

1 isn't any question, Vornefeld is a TDD frame. It's right there in the text of
2 Vornefeld. So, I mean, the definition of TDD frame is not important here.
3 The only point in us raising this, what they said at trial, is this. The sole
4 basis that the Federal Circuit found that Vornefeld wasn't sufficient on its
5 own was because they did not find that these horizontal lines in Figure 3 of
6 Vornefeld were necessarily part of the same TDD frame. And General
7 Access has now said, as clear as day, that a TDD frame is merely timing.
8 That's all it is. It's not a container of information.

9 JUDGE HAAPALA: Again, Mr. Rosenthal, I think that TDD
10 frame is something more specific than that. So, if it's important to you that
11 we have this very broad definition so we can discuss it further. But if you
12 think that it's not needed, and that the prior art shows it under the normal
13 construction of the TDD frame, I think we can move on to that if that's okay
14 with you.

15 MR. ROSENTHAL: Absolutely. Thank you, Your Honor. And
16 to clarify and make it very clear, we do not believe that any special
17 definition of TDD frame needs to apply or needs to be given.

18 And now that brings us to Ground 1. And this we believe --

19 JUDGE MCMILLIN: Just before we start, this is Judge McMillin.
20 May I ask a question?

21 MR. ROSENTHAL: Yes, please, Your Honor.

22 JUDGE MCMILLIN: Is the District Court's construction of sector
23 correct?

24 MR. ROSENTHAL: Well, it's the construction that we advocated,
25 or very close to the construction that we advocated in that District Court, I

1 think it's correct. Or, I'd like to put it this way, it is very close to being
2 correct. Could I quibble with it? Probably so. But there's an aspect of it
3 that is absolutely correct. And that is that the word sector, as used in the
4 '931 patent, is referring to something that is addressed by a single antenna.
5 That is absolutely correct. And under that definition of sector, Vornefeld
6 discloses multiple sectors unambiguously, Atsuta discloses multiple sectors
7 unambiguously, and Goldberg discloses, and Youssefmir. All of them
8 disclose multiple sectors. They use the word, in many cases, sector.
9 Sometimes they just talked about, for instance with Vornefeld, they talk
10 about the addressable area of the three antennas. But there's no dispute by
11 anybody that those are sectors under that narrow definition.

12 Okay. So, let's talk about Vornefeld and Atsuta, because to me,
13 this petition can be decided entirely on this basis alone. And there are only
14 two issues with respect to this ground. The first is whether Atsuta needs to
15 disclose the things for which we rely on Vornefeld. The vast majority of
16 General Access's brief, and I've seen their slides, and it looks like 75 percent
17 of their slides are spent arguing that Atsuta doesn't disclose things that were
18 not relying on Atsuta for. And as this panel well knows, when you're
19 making a combination of two things, trying to take one of those references
20 and saying that reference doesn't disclose elements A, B, and C is irrelevant
21 if you're relying on the first reference for A, B, and C. And that's the
22 fundamental problem with General Access's approach. That's issue number
23 one.

24 And issue number two, which is really the crux of the issue, is
25 would a person skilled in the art be motivated to combine a simple teaching

1 of Atsuta, which is putting multiple sectors in a single TDMA frame?
2 Would a person be motivated to combine that simple teaching with the
3 disclosure of Vornefeld, which is also a TDMA system? Here's what's not in
4 dispute. It is not in dispute that Vornefeld teaches everything in the
5 independent claims. It teaches the TDD frame. It teaches the broadcast
6 signal. It teaches the downlink portion of the TDD frame and the beam
7 inside of that. It is also not disputed that Atsuta teaches combining multiple
8 sectors of information into a single frame, and it is also undisputed that both
9 of these references describe a TDMA multiplexing system so they're
10 consistent with each other.

11 Those are all not in dispute. So, what does Atsuta teach? Figure 3
12 of Atsuta on our slide 20 is the best summary of it. And by the way, this
13 figure is not specific to downlink or uplink. This is describing the invention,
14 which thereafter describes is applied to both the uplink and the downlink.
15 And it says in the prior art, which is the bottom half of the figure, you would
16 have separate frames for each sector. So, you see that here, there's three
17 different frames each going to its own sector. Now it calls the sector zones,
18 but General Access's as expert agrees that in this reference, a zone is a sector
19 under any construction.

20 And what Atsuta teaches is rather than having separate frames,
21 combine them, which you see on the top, I'm just going to blow it up,
22 combine them into a single synchronous frame that addresses all three
23 sectors. We've colored those blue, green, and red, and they're all, as you can
24 see, in a single frame. That is the only teaching from Atsuta that needs to be
25 relied on. That's it. Nothing else is germane to our combination. And

1 Atsuta makes it very clear that this is done both in the uplink, but also in the
2 downlink. It talks about combining the three fan-shaped divided zones,
3 which are the sectors, and transmitting to the subscriber stations those
4 signals in one signal sequence as a predetermined synchronous frame, one
5 frame, and it describes why to do it.

6 The reason, this is our slide 22, the reason to do it is because by
7 combining the circuitry that decides which person gets which time slot into a
8 single unit, you get computational efficiency. It says you reduce the size and
9 power consumption. The size of the receiving apparatus can be reduced and
10 thereby the power consumption can be decreased. And our expert, Dr.
11 Almeroth explains in detail why that benefit would be an independent
12 benefit that a person skilled in the art reading Atsuta would be motivated to
13 apply to Vornefeld.

14 Both Vornefeld and Atsuta are talking about time division multiple
15 access. Time division multiple access means each user gets their own time
16 slot. That's how you have multiple access. Many people accessing a shared
17 frequency at the same time. Time division, multiple access. Vornefeld is
18 TDMA, and Atsuta is TDMA. So too, by the way, is the '931 patent. The
19 '931 patent is also TDMA. All of these references are TDMA. So, these are
20 completely compatible systems with each other. Our expert explains that in
21 paragraphs 91 through 98 of our -- of his declaration. We explained it on
22 pages 23 through 29 of our petition. Because they are both time domain
23 multiple access systems, they are combinable.

24 So, it is a very simple combination. And just to recap it, there's
25 one simple thing that the Federal Circuit found missing from Vornefeld.

1 And that is the conclusion that Figure 3 would all be part of the same frame.
2 That you'd have multiple sectors as part of the same frame. That simple
3 teaching is explicit in Atsuta. Atsuta says, hey, there's a computational
4 advantage to taking a TDMA frame that you have for each sector and
5 combining it into a single frame. You get computational fit, but you only
6 get one TDMA combiner. So, General Access's rebuttals, of which there are
7 five, are all either false or just incorrect, or they're irrelevant.

8 The first and most significant rebuttal, I think it's something like
9 30 of their 60 slides that they're about to present, is that Atsuta doesn't teach
10 TDD. That is not correct, and it is not relevant. The teaching that we are
11 taking from Atsuta is not its duplexing methodology, of which it doesn't
12 describe, by the way, it has no description of any duplexing methodology at
13 all. It's agnostic as to TDD and FDD. But that's not what we're taking from.
14 What we're taking from it is its teaching with respect to combining TDMA
15 frames. So, it's irrelevant and it's wrong, and I'll get into that.

16 They also argue, perplexingly, that Atsuta doesn't teach doing this
17 in the downlink. It explicitly does so. They also say that Atsuta doesn't
18 teach simultaneous beams to different users. That's irrelevant because while
19 they said in their preliminary response that this was a requirement of the
20 patent, and by the way, that was the only pause in the institution decision
21 that Your Honors I'm sure will recall, Your Honors said on this record it
22 doesn't seem clear that the claims require simultaneous transmission, but
23 we'd like to see some more briefing on that. And the first word that Patent
24 Owner had on that was to take it back to say, oh, we don't require
25 simultaneous at all. So, this argument is irrelevant.

1 They also argue that Atsuta doesn't teach beam forming, which is
2 also irrelevant. We're not relying on Atsuta for a beam form. And then they
3 argue, at least in their briefs, they argue that Atsuta doesn't simplify the
4 hardware. Well, Atsuta says it simplifies the hardware, and even their own
5 expert admitted that it would.

6 So, on the first argument, they say Atsuta doesn't teach TDD
7 frames. Well, we're not relying on Atsuta for that teaching. Vornefeld is the
8 base reference. Vornefeld teaches you have a TDD frame with a downlink
9 and an uplink phase. That TDD frame is also a TDMA frame. TDD
10 governs how you're communicating in both directions. It means you're
11 doing so on the same frequency. TDMA talks about how do you have
12 multiple users access that information. You do so in sequence. Vornefeld
13 uses both of those concepts.

14 So, when Atsuta teaches combined TDMA frames into one across
15 multiple sectors, it's also relevant to and applicable to Vornefeld's teaching.
16 We're not relying on Atsuta for teaching TDD. And the TDMA frame of
17 Atsuta is, on our slide 26, is compatible with Vornefeld. There's a whole
18 section of General Access's brief where they say we never made this
19 argument in our petition and in our declaration. That's just false.

20 If Your Honors look at pages 23 through 29 of our petition, there is
21 a whole section on the motivation to combine these two references. And not
22 once do we rely on Atsuta being TDD. The entire disclosure, the entire
23 argument, is based on the fact that these two things are TDMA and thus they
24 would be compatible. And in that, and I would look particularly at pages 27
25 and 28 of our petition, and in our declaration, Dr. Almeroth's declaration,

1 paragraphs 91 through 98 talk about why these two frame structures are
2 consistent with each other entirely based on the fact that they're both
3 TDMA. Not once in that section does Dr. Almeroth rely on Atsuta teaching
4 TDD. It is irrelevant. They are both TDMA and General Access's expert
5 admitted that Atsuta is a conventional TDMA method that it would not be
6 odd to use that TDMA method with Vornefeld, and that it is very common to
7 combine TDMA with TDD. In fact, that's what Vornefeld does, and that's
8 what the '931 patent does. And our expert on our slide 27 explains exactly
9 how you would make this combination.

10 On the bottom, Atsuta is teaching take multiple sectors of
11 information, combine it into a single frame. Dr. Almeroth depicted how that
12 would work and how it could work in Figure 3 of Vornefeld. You could --
13 the picture you have one, the blue area that is going into one sector, the
14 green to a different sector, and the red to a third sector. Completely
15 consistent with what's described in Atsuta.

16 Now, there is this debate, I suggest is an irrelevant debate as to
17 whether Atsuta is in fact TDD or FDD. By the way, it's really interesting.
18 In General Access's is preliminary response they said, oh, Goldberg doesn't
19 describe TDD. And they said Atsuta doesn't describe beam form. They
20 never took the position that Goldberg, sorry, that Atsuta was FDD until their
21 Patent Owner response. And now they say it's the most clear thing in the
22 world. It's only describing FDD. It has no applicability to TDD. And the
23 reason is that sometime after they filed their preliminary response, they
24 found a sentence, one sentence on column 6 that says the frequency band of
25 the up link is smaller. That's it. All the pages that they've written about are

1 about that one sentence in the middle of an example within Atsuta.

2 That example does not change the overall disclosure of Atsuta,
3 which doesn't mention duplexing at all. And even that example is unclear as
4 to whether it's referring to FDD or TDD. Even if it were FDD, that would
5 be irrelevant to the combination that it could be used with an FDD system is
6 fine. It could also be used with a TDD system. And that example also talks
7 about the asymmetry of the uplink and the downlink, which as even General
8 Access's expert concedes, is much more consistent with a TDD frame.

9 But this is all a sideshow. We're not borrowing from Atsuta
10 anything about its duplexing scheme because it doesn't describe a duplexing
11 scheme. You don't find the words TDD or FDD in that reference, or to
12 duplexing. The only part of Atsuta that we are relying on, that we need to
13 rely on, is the fact that it's taking multiple sectors and putting them in a
14 single frame. And that's completely consistent with what it would take to
15 modify Vornefeld.

16 JUDGE BARRETT: Mr. Rosenthal, you have about six or seven
17 minutes left of your original time.

18 MR. ROSENTHAL: Thank you. The next argument that General
19 Access makes is -- and this is really perplexing -- they say that Atsuta
20 doesn't describe combining sectors in the downlink. And they said this in
21 their preliminary response, and in the institution decision, this panel wrote,
22 General Access seems to be ignoring the passage on column 6 and Figure 4
23 that Petitioner is relying on, and they continue to ignore it. They actually
24 have pages and pages of their sur-reply and their Patent Owner response,
25 where they say over and over again, Atsuta is only concerned with the

1 uplink. I really don't understand that because even their expert admits that
2 it's talking about the downlink. It's shown in the figures. There is a figure,
3 Figure 2, which is only uplink. But there's also a figure, Figure 4, that
4 shows downlink and uplink using the same combined TDMA circuit,
5 therefore the same TDMA frame.

6 And as you can see on our slide 30, it's transmitting from the base
7 station to the subscribers. And we asked General Access's expert on our
8 slide 31 and he confirmed, yes, that figure is talking about downlink, and it
9 is a single frame, not multiple frames. It is a little bit strange that they are
10 continuing to make this argument that somehow Atsuta does not disclose
11 doing this in the downlink. I don't know if they will make that argument
12 today, but if they do, it's just false. Atsuta says it clearly.

13 Their third argument is that Atsuta does not disclose simultaneous
14 transmissions. Well, General Access abandoned its position that the claim
15 requires simultaneous transmissions. The claim is agnostic. The claim
16 could have simultaneous transmissions or it could have concurrent -- or
17 sequential transmissions. It doesn't matter. Now, Atsuta is silent as to
18 whether or not within a particular sector there might be spatial domain
19 multiplexing, because Atsuta isn't talking about that. What Atsuta is talking
20 about is a TDMA system that separates information along the time axis.
21 That TDMA system is exactly the same as what Vornefeld discloses.
22 Vornefeld is also TDMA, where you have different slots for different users.
23 That's all over of Vornefeld. Pages 52, 53, 55 all describe that you're
24 separating in time the information to different users in Vornefeld.

25 Now, Vornefeld adds to that disclosure and says you could also

1 have spatially separated beams, but that's not inconsistent with the teaching
2 of Vornefeld. Vornefeld is simply saying, keep the sectors separated in
3 time, and we've already shown how that would be totally consistent with the
4 Vornefeld. You could just have different sectors -- I'm now at my slide 27,
5 that are transmitting at different times within the same downlink portion of
6 the same TDD frame. Nothing in the claim requires that the beams to
7 multiple sectors be simultaneous.

8 The fourth argument that General Access makes is that Atsuta
9 doesn't teach beamforming. We're not relying on Atsuta for beamforming,
10 that's easy. Vornefeld teaches beamforming. It teaches adding
11 beamforming to a TDMA and TDD system.

12 And finally, General Access makes the argument that Atsuta would
13 not actually simplify the hardware. I don't know what to do with that
14 argument because Atsuta says on its face that the purpose of combining the
15 frames from multiple sectors into a single frame is to reduce the complexity
16 of the circuitry. And it explains why. And General Access says, well, one
17 of the circuits, the combined circuit would be more complex than the three
18 circuits -- than any individual one of the prior three circuits. That's
19 irrelevant. They admit that you would not -- you would overall simplify the
20 circuitry. And in any event, Atsuta itself says that you would do so. So, the
21 person skilled in the art would certainly be motivated to do what Atsuta
22 teaches. I don't know whether General Access will still be urging that
23 argument to ignore what Atsuta says about this, but that's not how
24 obviousness works.

25 I do want to skip to, unless the Board has questions about Ground

1 1, I do want to briefly mention a couple of arguments on Goldberg. So,
2 Ground 2 is Vornefeld plus Goldberg. And what Goldberg does is it takes --
3 it takes where Vornefeld leaves off, Vornefeld says, let's have a
4 beamforming system, but it doesn't describe the math about how you would
5 actually beamform. Goldberg provides that. And Dr. Almeroth explains
6 how it does that. It says, separate the world -- the radio cell into regions.
7 And those regions are independent of the antenna. And so, they could span
8 across multiple antenna. They could be within one antenna. They're
9 independent of that.

10 And so, Goldberg describes beamforming on our slide 39, where
11 you apply weights to the antenna to send a beam to individual ones of those
12 regions. When you combine that teaching with what Vornefeld teaches, you
13 would end up with a situation in a single frame addressing multiple regions,
14 and some of those regions can span multiple sectors. Again, it's a very
15 simple combination, and General Access really has two arguments. The first
16 is they say that -- and I'm on slide 42, that Goldberg does not describe a
17 TDD frame. We're not relying on Goldberg for TDD. That's described in
18 Vornefeld, and in any event, Goldberg does describe TDD. On paragraph --
19 or column 1, line 48 through 61, it describes -- there's two embodiments.
20 You could do this in GSM, which is FDD, and you can do it in PHS, which
21 is TDD. General Access says we didn't cite to that portion of the document
22 in our petition. That's just incorrect. We did cite to it in our motivation to
23 combine section. We cited to exactly that portion, explaining why someone
24 would be motivated to combine Goldberg with Vornefeld.

25 General Access also argues that Goldberg doesn't apply under the

1 District Court's construction. First of all, it's not advocating for the District
2 Court's construction, but even if it were, then Goldberg does describe that
3 the regions are independent of any antenna, and therefore could span
4 multiple sectors, even under that narrower definition of sector.

5 JUDGE BARRETT: Mr. Rosenthal, you are at 45 minutes.
6 You're free to continue and cut into your rebuttal time.

7 MR. ROSENTHAL: Thank you. I'm just going to take one
8 minute and just talk briefly about Youssefmir. Youssefmir is a different
9 reference. So, any of the arguments that they may have about Vornefeld and
10 its disclosure, Youssefmir is a totally different reference, but it has in
11 common with Vornefeld, it has a TDD, TDMA frame structure depicted on
12 our slide 45 with a downlink phase and an uplink phase. And on our slide
13 48, it describes -- I'm sorry, slide 50, it has a broadcast beam signal at the
14 start of that frame that according to Goldberg goes to all of the users. So,
15 the entire cell site. And within that TDD frame, the downlink signals can be
16 beamformed, and there's no dispute that they can be beamformed.

17 The only thing that Youssefmir does not disclose is doing that
18 within a single TDD frame across multiple sectors. Again, Atsuta provides
19 that teaching. It says in a TDMA system, like that disclosed in Youssefmir,
20 there is computational efficiency gain by combining multiple sectors and
21 putting it in the same TDD frame. So, it is a similar combination. They
22 don't really have an argument as to Youssefmir itself. And so, the
23 modification of Youssefmir to simply take the frame structure which
24 described on our slide 48 at Figure 4B and use those slots to address not just
25 beams within a single sector, but across multiple sectors, is exactly the

1 teaching that Atsuta provides.

2 And with that Your Honor, I'll defer the rest of my time unless you
3 have any other questions.

4 JUDGE HAAPALA: Mr. Rosenthal, I do have a question for you
5 about the combination of Vornefeld and Goldberg.

6 MR. ROSENTHAL: Yes, Your Honor.

7 JUDGE HAAPALA: In your petition you cite to the fact that
8 Goldberg discloses beaming to different mobile devices, but I'm not
9 following why those are in different sectors. (CROSSTALK) on that.

10 MR. ROSENTHAL: Goldberg -- I'm so sorry, Your Honor. Yes,
11 Goldberg itself describes different regions. It says each region is calculated
12 to take -- to be wide enough to cover a single user. But those regions are
13 calculated without any regard for the antennas or their boundaries. And so
14 our expert, Dr. Almeroth, has explained in his petition that when you create
15 those regions, you are likely to or will create a region that spans multiple
16 antenna. And therefore, when you put those regions into the same frame,
17 you will end up with multiple sectors represented within that same frame.

18 JUDGE HAAPALA: So, you are relying on the expert testimony
19 for this? There's nothing specific in Goldberg that necessarily discloses
20 specifically that the devices are in separate sectors?

21 MR. ROSENTHAL: So, Goldberg explicitly states that the system
22 is sectorized, and therefore has different antennas. And it explicitly states
23 that it calculates regions. It doesn't use the words that those regions will
24 represent different sectors. It does not say that, Your Honor. So, but our
25 expert interpreting Goldberg says because it discloses a sectorized system

1 and because it discloses calculating regions independent of the antennas, you
2 will end up with multiple sectors represented in that single frame. That's
3 right, Your Honor.

4 JUDGE HAAPALA: All right. So, your position is that
5 necessarily each of those mobile devices is in a different region?

6 MR. ROSENTHAL: Not that each of them is in a different region,
7 but across the cell site, the collection of those will represent multiple sectors.
8 So, if I have 10 cell phones in the cell site, three of them might be in sector
9 one, four of them might be in sector two, three of them in sector three. And
10 when you put all of those which are divided into regions into a single frame,
11 as Goldberg describes, you have now put beams to multiple sectors within
12 the same frame. That's Dr. Almeroth's opinion.

13 JUDGE HAAPALA: So, if I can be -- so, the way to characterize
14 your argument then, is it relying on an inherency argument because you're
15 using your expert to fill in gaps that are not specifically discussed in
16 Goldberg?

17 MR. ROSENTHAL: I don't think it is inherent, although I suppose
18 you could characterize it as close to that. I don't think that we're arguing that
19 it's inherent. I think that's the way that a person skilled in the art would
20 understand Goldberg to read, and it would certainly be obvious in view of
21 the disclosure of Goldberg that because you have a sectorized system, and
22 because you're calculating those regions independent of the antennas, that
23 you will end up with, or it would be obvious to end up with, multiple of
24 those regions spanning different sectors being in the same frame. I don't
25 think that we're relying on inherency though.

1 JUDGE HAAPALA: Thank you.

2 MR. ROSENTHAL: Thank you, Your Honor. Any other
3 questions? Thank you, Your Honors.

4 JUDGE BARRETT: I think we're good. You have about 10
5 minutes left.

6 MR. ROSENTHAL: Thank you.

7 JUDGE BARRETT: Ms. Spires, whenever you are ready.

8 MS. SPIRES: Thank you, Your Honor. And I would like to
9 reserve 10 minutes for rebuttal.

10 JUDGE BARRETT: Okay. Reserving 10. Thank you.

11 MS. SPIRES: Thank you. I would like to start with one question
12 that was at issue already today and that is the construction of sector. And I
13 want to be clear that General Access does agree with the District Court's
14 construction of sector, and does advocate for the Board to adopt the District
15 Court's construction of sector in this case. And in the case the briefing is not
16 clear on that issue, and I do want to be clear now that that is General
17 Access's position.

18 I would like to begin by showing that Petitioner has failed to prove
19 that a POSA would have been motivated to combine Atsuta with Vornefeld
20 for three primary reasons. The first is that, as Petitioner acknowledges,
21 Vornefeld identifies the efficient use of the available frequency bandwidth
22 as a crucial issue to Vornefeld, and for this reason would not have combined
23 it with Atsuta, which discloses an invention that triples the frequency band
24 and wastes much of it.

25 The second reason is that Petitioner has failed to explain why a

1 POSA would incorporate transmission into sectors in Vornefeld's Figure 3,
2 when Atsuta defeats the purpose of sectorization, which is to transmit
3 simultaneously. And the third is that while Petitioner relies on the alleged
4 consistent frame structure of Atsuta and Vornefeld for its motivation to
5 combine the two references, they do not have consistent frame structures
6 because Vornefeld is TDD while Atsuta is FDD. This difference also means
7 that if a POSA were concerned with interference among uplink and
8 downlink transmissions in Vornefeld's TDD system, they would not look to
9 Atsuta to solve this problem, as Atsuta does not have uplink, downlink,
10 transmission interferences at all -- interference issues at all, since the uplink
11 and downlink occur at different frequencies.

12 Turning to the first issue. On page 79 of the petition, Petitioner
13 asserts that Vornefeld identifies efficient use of the available frequency
14 bandwidth of a crucial issue. And then later on pages 79 to 80 of the
15 petition, Petitioner argues that Vornefeld recognized the need for efficient
16 usage of available frequency resources. And it is true. The first page of
17 Vornefeld, which is numbered page 52, begins with a discussion about how
18 the steadily increasing demand for transmission bandwidth, particularly for
19 wireless networks, has triggered vivid research work to enhance the spectral
20 efficiency. Vornefeld indeed is part of this research.

21 Vornefeld goes on to state, that especially in wireless broadband
22 systems, the spectral efficiency becomes a crucial issue. Vornefeld then
23 goes on to explain that it addresses one possible approach to, as Vornefeld
24 says, squeeze more out of the spectrum by taking advantage of the spatial
25 dimension. Then on page 57, Vornefeld states that the utilization of the

1 spatial dimension helps to increase the transmission capacity, reduces intra,
2 as well as intercell interference, and leads to more efficient usage of the
3 scarce radio spectrum, all of which are the goals set out in Vornefeld.

4 JUDGE HAAPALA: Ms. Spires, I'm going to interrupt you for a
5 minute because a lot of your arguments are premised on the fact that Atsuta's
6 TDMA techniques are limited to FDD. Can you please explain to us why
7 you think that's true?

8 MS. SPIRES: Absolutely. If we look at General Access's slide 13,
9 we can see where Atsuta discloses that it is a TDD program. It says, as an
10 example in which the frequency band and transmission capacity can be
11 increased without a problem, a picture providing system is known. When a
12 picture providing service, such as CATV, is performed with radio signals,
13 the transmission capacity of picture data set from the base station to the
14 subscriber station in the downlink direction, is much larger than the
15 transmission capacity of control data, such as request data sent from the
16 subscriber stations to the base station in the uplink direction. So, here we've
17 got transmission capacity larger in the downlink than the uplink.

18 Then we keep going, consequently, since the transmission capacity
19 and the frequency band of data set in the uplink direction are small, which
20 we know from the sentence before is small with respect to the downlink
21 direction that is larger, the increases of the transmission capacity and the
22 frequency band of the communicating method of sharing a TDMA
23 synchronous frame may not become a problem in many situations.

24 So, the key phrase here is that consequently, since the transmission
25 capacity and the frequency band of data set in the uplink direction are small.

1 This leaves no ambiguity that Atsuta is discussing both data capacity and
2 frequency band, that is discussing a smaller uplink bandwidth and gain
3 capacity than downlink bandwidth and data capacity, which is, in fact, one
4 way to obtain asymmetrical data rates in an FDD system. But a smaller
5 uplink bandwidth than downlink bandwidth precludes the system from being
6 TDD, because as the '731 patent state, and as a Petitioner has acknowledged
7 throughout its petition, TDD requires that the uplink and downlink use the
8 same channel with the same center frequency and bandwidth. So, we have
9 two alternatives for duplexing, TDD and FDD. TDD using the same
10 channel with the same center frequency and bandwidth for both uplink and
11 downlink, and then FDD, which has no such requirement, but instead uses a
12 first channel for frequency for transmission and a second channel of
13 frequency for reception.

14 JUDGE BARRETT: Ms. Spires, if I could kind of jump ahead
15 here. Let's assume for the sake of argument that you're correct, and Atsuta is
16 an FDD and its uplink. How does that affect the teaching the petition is
17 relying on? It has those components in the primary reference, the claimed
18 TDD and downlink. It seemed that Atsuda just talks about how to deal with
19 one half of the duplex, one portion, be it uplink or downlink, but one
20 portion. And that's what I understand Petitioner is just taking the teaching
21 about one portion, regardless as to whether it's sent FDD or TDD. So,
22 bottom line it for me. How does that undermine Petitioner's case?

23 MS. SPIRES: I agree with you that Petitioner is trying to take one
24 portion of Atsuta. The challenge is that Petitioner is repeatedly using the
25 similar frame structures, or allegedly similar frame structure of Atsuta and

1 Vornefeld in its motivation to combine the two references. So, we see at
2 General Access's slide 8 and 9 that Petitioner is arguing that a POSA would
3 have had a reason to combine Vornefeld and Atsuta because they are both
4 directed to the same field of endeavor and attempt to solve the same issues,
5 e.g., efficient broadcasting between a base station and subscribers using
6 TDMA frame structured transmissions.

7 So, over and over again they argue that a POSA would have
8 combined these references because they have compatible frame structures,
9 and they're looking at TDMA when they say this, and in a few instances they
10 also alleged this with respect to TDD and say that the compatible frame
11 structures include TDD. But the fact is that they are incorrect that the
12 references have compatible frame structures, and because they're incorrect
13 that they have compatible frame structures, they're also incorrect when
14 arguing that a POSA would have been motivated to combine the references
15 because they have compatible frame structure.

16 JUDGE HAAPALA: Ms. Spires --

17 JUDGE MCMILLIN: This is Judge McMillin. Is it true that both
18 Vornefeld and Atsuta teach and describe TDMA frame structures?

19 MS. SPIRES: Vornefeld does teach and describe TDMA frame
20 structures. Atsuta describes itself as teaching TDMA frame structures.
21 Under the definition of TDMA in the '931 patent, Atsuta's result does not
22 actually qualify as a TDMA frame. This Petitioner -- or General Access's
23 expert explained this at deposition, pages 169 to 170, and then also again at
24 page 192 of his deposition, which is at Exhibit 1024. And there he's
25 explaining that the '931 patent describes TDMA as, and this is Exhibit 1001

1 at 540 to 42. And at that location, the '931 patent describes TDMA as time
2 division multiple access. It says, in a TDMA system, subscribers share a
3 frequency channel but allocate spans of time to different users. And so, and
4 this is consistent with how other references define TDMA. But it's clear
5 from Atsuta that the three sectors that it combines use different frequency
6 channels you see in Atsuta's Figure 3. And so, to whatever extent Atsuta
7 attempts to coordinate sectors, regardless of its nomenclature, it still does not
8 teach TDMA for a frame structured transmission at all as defined in the '931
9 patent.

10 JUDGE HAAPALA: Ms. Spires, just so that I understand
11 correctly, your assertion that Figure 3 is teaching different frequencies is
12 relying on that same paragraph you showed us earlier. There's nothing in
13 Figure 3 that I see that says it's different frequencies. Am I missing
14 something?

15 MS. SPIRES: So, that is, if we look at -- it's looking at the image
16 of Figure 3. And you see that you've got F1, F2, and F3 on the right side of
17 the Figure 3's image. And both experts explained that here you have
18 different frequencies being used by each subscriber. That's why you have to
19 have a large frequency bandwidth for this -- for Atsuta's invention. It says
20 that you need to triple the frequency bandwidth because it's splitting up the
21 frequencies here. And this is explained, again, in Petitioner's -- or in
22 General Access's expert's deposition.

23 JUDGE HAAPALA: Do you have a reason for that?

24 JUDGE HAAPALA: Ms. Spires -- oh, I'm sorry.

25 JUDGE HAAPALA: Could you repeat the page numbers on

1 where that's explained? Thank you.

2 MS. SPIRES: Yes, this is at Exhibit 1024, pages 169 to 170 and
3 192.

4 JUDGE BARRETT: So, Ms. Spires, I just wanted to clarify your
5 argument. Are you saying, even again, if we assume Atsuta is not TDMA,
6 are you arguing that that makes it -- that the teachings that Petitioner is
7 relying on, that it's incompatible with the teachings of Vornefeld, or are you
8 just attacking Petitioner's motivation to combine, saying they aren't similar,
9 so it undermines the motivation to combine?

10 MS. SPIRES: Both, Your Honor. So, Petitioner alleged that this
11 similar frame structure is important to motivation to combine. Yet, and it
12 does, as you see, we discussed at length in sur-reply, Petitioner finally
13 alleged for the first time in its reply declaration that FDD is compatible with
14 TDD. They have never done this before that even if Atsuta is FDD, it's still
15 compatible with TDD. But again, as we showed in the sur-reply, there is
16 absolutely no citation to evidence or explanation as to why that was. So,
17 what I --

18 JUDGE BARRETT: I may have misstated my question. I
19 understand now you're talking about TDD versus FDD. I was really more
20 concerned about the TDMA versus Atsuta as you allege is not TDMA. I
21 understand there's a distinction between FDD and TDD, but I'm looking at
22 the TDMA distinction right now.

23 MS. SPIRES: Right. And that -- the argument is -- TDMA is
24 obviously not required by the claims, but Petitioner alleged over and over
25 again that it is a common TDMA structure. It is a reason that a POSA would

1 have combined. And so, our argument is that this nullified Petitioner's
2 motivation to combine analysis.

3 JUDGE BARRETT: Okay, that's helpful. And then just to clarify,
4 so the other part of my question was, are you contending also that it's just
5 not technologically possible to apply the teachings because of that that
6 TDMA issue, or again, are you just under -- are you just saying Petitioner's
7 failed on the motivation to combine?

8 MS. SPIRES: There is not any evidence in the record, one way or
9 the other, as to how the TDMA issue affects the ability to combine. There is
10 quite a bit of evidence in the record, only from General Access, that it is a
11 POSA would not have been able to combine the two references because of
12 the TDD FDD distinction. But the, and again, that's without any contrary
13 evidence that, of course, it would have been able to combine the two,
14 coming from Petitioner. But on the TDMA issue, there is -- I'm not aware of
15 any evidence in the record as to how it affects the POSA's ability to
16 combine. Instead, it's about a POSA's motivation to combine.

17 JUDGE BARRETT: Okay. Thank you. Thank you.

18 MS. SPIRES: So, we've talked about the TDD FDD issue, where
19 that comes in in terms of a POSA's ability to combine. As Petitioner's
20 expert -- or General Access's expert explained, repeatedly, you would have
21 to start over if you were trying to take a FDD reference and combine it into a
22 TDD reference, that these are simply not compounded references. And that
23 is explained at least in the briefing.

24 The primary reason that we see an issue here in combining the two
25 is set forth -- I'll find the slide for you. I'll find the slide in a moment. The

1 Petitioner's expert, as explained in the brief, or GAS -- General Access's
2 expert, as explained in the briefing, explained that a POSA would not have
3 been able to combine the FDD with TDD because they're mutually
4 exclusive, and so would have to start over.

5 But then he went on and talked about how beyond a TDD, FDD
6 issue, a POSA would not have combined the two because what Atsuta would
7 have done, regardless of FDD TDD, what Atsuta would have done to
8 Vornefeld is the opposite of what Vornefeld talked about wanting to do. We
9 started at the beginning talking about how Vornefeld emphasizes how
10 crucial it is to make efficient use of the frequency spectrum. And despite
11 that, Petitioner is alleging that a POSA would have combined Atsuta.

12 But Atsuta states at 551 to 54, that its invention requires a
13 receiving apparatus that has a larger transmission capacity than that is
14 actually used, and a wider frequency band than that of the conventional
15 frame required. At 546 to 49, Atsuta specifies that the frequency band is
16 tripled in its invention. And so, Vornefeld's teaching of seeking more
17 efficient uses of the scarce radio spectrum teaches away from Atsuta's
18 invention, which requires tripling and then wasting the scarce radio
19 spectrum, as General Access's expert explained in his declaration, Exhibit
20 2028, paragraphs 127 to 129.

21 Now, Petitioner has alleged that a POSA what have combined
22 Atsuta and Vornefeld because this simplifies the structure. But there are a
23 few problems with that argument. Petitioner alleges that in a conventional
24 sectorized TDMA method, such as the one described in Vornefeld, this is
25 quoting from the petition at page 25, that if transmissions due occur -- if

1 transmissions to different sectors occur in separate TDMA frames, separate
2 demodulating circuits and TDMA control circuits are typically used for each
3 sector.

4 But then in petition at page 29, Petitioner says that Vornefeld does
5 not explicitly state whether it uses different control circuits for its various
6 antennas. And so, all of these allegations have come in that Atsuta would
7 have wanted to combine the control circuits for efficiency, but then they say,
8 actually Vornefeld doesn't say one way or the other what it would have
9 done, and so it may be the case that Vornefeld already used one control
10 circuit, which Petitioner acknowledges on page 29. And then says in that
11 case, Atsuta's design would still be applicable in as much as its single frame
12 structure is intended for that very design. Well, it may be applicable in that
13 case if all of Petitioner's allegations are true, but what is the benefit? Why
14 would a POSA actually combine these two references if, as Petitioner
15 alleges, Vornefeld does not state whether it uses different control circuits for
16 its various antennas?

17 Indeed, as Your Honors pointed out earlier today, Vornefeld does
18 not even disclose that it is a conventional, sectorized, TDMA method in its
19 Figures 2 and 3. If we talked about the District Court's construction of
20 sector, means that a sector is tied to a single antenna. And as Petitioner
21 acknowledged earlier today, that in Figures 2 and 3, Vornefeld shows one
22 antenna and thus one sector. Vornefeld does not use the word sectors at all.
23 It only implies the possible existence of more than one sector, stating that a
24 ULA can only cover up to 180 degrees. But it gives absolutely no details
25 about how, if at all, Vornefeld would employ sectors.

1 And in fact, the Board previously has held that under a different
2 claim construction, that did not talk about sector at all, but held that, as we
3 see on General Access's slide 6, that Vornefeld failed to disclose using
4 different beams in the same TDD frame to transmit two devices within a
5 different sector. And Petitioner has stated that they are not relying on
6 Vornefeld for anything with any additional allegations with respect to
7 Claims 28 and 29. And so, here, they're relying on Atsuta to use the same
8 TDD frame to transmit devices within a different sector. So, it's needing to
9 cover both aspects, the different sector and TDD frame. But Petitioner has
10 not shown why Atsuta, under the District Court's construction of sector, why
11 would a POSA transmit to multiple sectors based on Atsuta when Atsuta
12 actually defeats the purpose of sectorization?

13 So, you saw on Petitioner's slide 27 a demonstration of how a
14 POSA would have supposedly easily combined Atsuta and Vornefeld. But
15 this slide is quite misleading. First, as we discussed, there's only one sector
16 here in Vornefeld. And so, Petitioner is trying to say, all right, you're going
17 to have the blue, the green, and the red are going to be now the different
18 sectors in Vornefeld.

19 JUDGE HAAPALA: Ms. Spires, I'm going to interrupt you. I
20 think I agree with Petitioner. Actually, I know I agree with Petitioner that
21 there was a concession in the previous IPR that Vornefeld anticipated Claim
22 1, which does talk about multiple sectors. So, I think if you're asking us to
23 determine that Vornefeld doesn't have multiple sectors, I think that issue has
24 already been decided by both us, and affirmed by the Federal Circuit.

25 MS. SPIRES: Okay.

1 JUDGE MCMILLIN: We'll let me ask that in a little bit different
2 way. This is Judge McMillin. There's a transmittal limitation in Claim 1,
3 and a transmitting limitation in Claim 19, and hasn't it already been found
4 that those limitations, which refer to transmitting directed scanning beam
5 signals, each directed to a substantially only wireless access devices within a
6 different line of polarity of sectors of a cell site, hasn't that already been
7 found to be taught by the prior art?

8 MS. SPIRES: Was that the language directly from Claim 1 and
9 Claim 19?

10 JUDGE MCMILLIN: That is the language. What I read, what I
11 tried to read, was of the transmit limitation from Claim 1.

12 MS. SPIRES: Yes. The limitations from Claim 1 and Claim 19
13 have been found to not be valid in light of Vornefeld. Absolutely.

14 JUDGE MCMILLIN: Let me clarify that. They've been found to
15 have been (INDISCERNIBLE - TECHNICAL DIFFICULTY) by the prior
16 art asserted in this proceeding. Correct?

17 MS. SPIRES: Correct. What has not been found to be taught by
18 the prior art in this proceeding is whether Vornefeld is -- is that the prior art
19 would disclose using different beams in the same TDD frame to transmit to
20 devices within a different sector. We on the same page on that?

21 So, we have transmission, from Claim 1, we have transmission in
22 one sector. But we do not have transmission to devices within a different
23 sector.

24 JUDGE MCMILLIN: But on Claim 1, we have a beam forming --
25 we have transmit path circuitry associated with a beam forming network

1 capable of transmitting directed scanning beams, each directed to
2 substantially only wireless accesses devices within a different form of a
3 plurality of sectors. So, we have circuitry capable of transmitting to only
4 (INDISCERNIBLE - TECHNICAL DIFFICULTY) to a different one of a
5 plurality of sectors.

6 MS. SPIRES: For the scanning beam signals, yes. What we do
7 not have is that this is going to combine the same frame. So, it -- Vornefeld
8 makes very clear that one of the advantages of sectorization is to transmit
9 simultaneously in order to make efficient use of the scarce radio spectrum.

10 So, if we're looking at Vornefeld without Atsuto, let's assume that
11 Vornefeld has, or any prior art reference, has a one-sector system that
12 supports, say, nine subscribers, subscriber premises using the terminology of
13 the '931 patent. And so, we'll assume right now it's a TDMA system with
14 nine timeslots, no beam forming.

15 If we're going to make this into a three-sector system, now this
16 system can support the nine subscriber premises per sector, or 27 subscriber
17 premises total. So, the total capacity is increased by three times using
18 sectorization. And Vornefeld makes very clear how important it believes the
19 efficient use of the spectrum is. But if you then use Atsuta, you are now
20 saying that you can only transmit to any of these three sectors when you are
21 not transmitting to the others. And so, you go from being able to transmit to
22 27 different subscriber premises simultaneously.

23 Now you can transmit back to nine subscriber premises
24 simultaneously. You're going to be able to transmit instead of nine in one
25 sector and nine in another and nine in another, Atsuta, the fact that it

1 prohibits simultaneous transmission is going to say that you are now going
2 to transmit -- you can only transmit to three in one sector, three in another
3 sector, three in another sector. Because the other six cannot be transmitted
4 to like they could have prior to a combination with Atsuta. Because now
5 you have to block the transmission -- in sector one, you can transmit three,
6 but if you go to the next three or the next three, you have to block that
7 because you're now transmitting into sector two or to sector three.

8 So, if you're combining Atsuta, you've now essentially nullified the
9 value of having separate sectors at all. But at the same time, you have
10 tripled your frequency band. And so, this is a senseless waste of capacity
11 that is absolutely the opposite of what Vornefeld teaches a POSA would do.

12 If we look, we can see Vornefeld's teaching on this issue. It says
13 that at page 57 of Vornefeld, it talks about the utilization of the spatial
14 dimension helps to increase the transmission capacity, reduces intra- as well
15 as intercell interference and leads to more efficient use of the scarce radio
16 spectrum. So, Atsuta is teaching that you're wanting to increase
17 transmission capacity and make more efficient use of the radio spectrum.
18 Vornefeld is teaching this.

19 Atsuta is going to take your capacity down from the potential of, in
20 the hypothetical, 27 subscriber premises that can be transmitted to
21 simultaneously down to nine using the combination that does not allow
22 simultaneous transmission. And it's going to do so by, as it very clearly
23 states, tripling the frequency. So, the opposite of what Vornefeld states in
24 leading to create more efficient usage of the scarce radio spectrum.

25 But Petitioner goes on and on about saying that a POSA would

1 have done this because Vornefeld already discloses that you should separate
2 transmissions in time. That is absolutely not true. Vornefeld at page 55
3 states that you only separate transmissions in time that cannot be separated
4 in space. It states it very, very clear and expressed preference for
5 transmitting simultaneously the opposite of what Atsuta does and only
6 splitting transmissions of in space -- or splitting transmissions of it on the
7 time axis when they cannot be separated in space. This is not what Atsuta
8 does. And the reason for this is obvious because what Atsuta does is the
9 antithesis of what Vornefeld teaches.

10 This is an uplink scheduling section of Vornefeld where it talks
11 about the fact that at some point you can end up -- there's an upper threshold
12 of concurrently transmittable, not PDUs for time slot. And later in that
13 paragraph that it says that it makes no sense to allow simultaneous
14 transmission for more MTs than the spatial filtering algorithm is
15 theoretically able to separate. So, its preference is still you want
16 simultaneous transmission because that's the most efficient. But to the
17 extent that you have so many that they can't be separated in space, then it
18 says another objective of the scheduling algorithm is to split up transmission
19 constellations on the time axis which cannot be separated in space.

20 So, it is not as Petitioner has alleged that a POSA would have said,
21 oh, Vornefeld likes to separate transmissions on the time axis, Atsuta does
22 this, we can combine them. And then we get some sort of efficiency and
23 something that apparently Vornefeld does not even disclose as a problem.
24 Instead, the case is that Vornefeld says, no, we want simultaneous
25 transmissions, and only in the event that we have too many simultaneous

1 transmissions, and so we're going to have an interference issue, are we going
2 to deal with the interference issue by splitting up transmissions on the time
3 axis.

4 Because this is an interference issue, this is another reason that a
5 POSA would not have looked to Atsuta. A POSA, looking at Vornefeld,
6 saying, all right, we've got this one issue, we know that our main goal is to
7 make efficient use of the frequency spectrum. And so, for that reason,
8 they're not going to look to Atsuta that triples the bandwidth that's needed.
9 But they're also going to say, okay, we have a frequency a -- an issue with
10 interference. Well, as we mentioned, this is where it matters that Atsuta is
11 an FDD reference. As an FDD reference, Atsuta does not have issues with
12 interference in the transmissions because it has the uplink and downlink
13 going on in different frequencies. And so, there is not an interference issue.

14 JUDGE BARRETT: Ms. Spires, you've got -- first, you've got
15 about 10 minutes left of your original time. But doesn't TDD deal with
16 interference just in a different way? It separates them by time instead of
17 frequency? And maybe more importantly, wouldn't a person of ordinary
18 skill in the art, if they had to deal with some interferences, would know how
19 to deal with those?

20 MS. SPIRES: Yes, absolutely. Vornefeld explains exactly how a
21 POSA would deal with interferences. And that is that they are going to first
22 separate the transmissions in space to deal with interference. But to the
23 extent that they can no longer do that because there are too many
24 transmissions to separate in space, then those which cannot be separated in
25 space, in the words of Vornefeld, will be split up on the time axis. And so,

1 you're right. They would not need to go to any reference at all, Atsuta or
2 otherwise, in order to figure out how to deal with these interference issues.
3 Vornefeld already deals with it. And as the law makes clear, when the prior
4 art already shows a solution to a problem, a POSA does not have a
5 motivation to look to another reference to try to solve that problem.

6 Do Your Honors have any further questions on Atsuta, or would
7 you like me to move to Goldberg?

8 JUDGE BARRETT: I think we're good for the moment. Feel free
9 to move on to Goldberg.

10 MS. SPIRES: Okay. So earlier, there was testimony that
11 Goldberg somehow -- although Goldberg doesn't disclose transmissions to
12 multiple sectors, that somehow there's something in the expert's declaration
13 that says, well, Goldberg has these regions and somehow it might end up
14 applying to sectors. I urge you to go back and look at the petition and what
15 the petition says about Goldberg. The petition does not say a single thing
16 about any disclosures of Goldberg of transmission to different sectors. What
17 the petition says is that Goldberg talks about sectors, and Goldberg talked
18 about regions, and the petition says very specifically that Goldberg's regions
19 are what all of the analysis is about here, and that Goldberg's regions are not
20 tied to any sort of antenna, and so, do not disclose sectors under the District
21 Court's construction.

22 Petitioner says in its reply that, oh, well, we're ignoring the fact
23 that -- they said Goldberg would have obviated the '931 patent under any
24 reasonable construction of sector. But if you look at that, they do not
25 explain even once how Goldberg would have rendered the claims obvious

1 under any reasonable construction of sector. They, in the entirety of the
2 allegations of Goldberg are with respect to region. And Goldberg discloses
3 a region, which Petitioner states many times, is only relevant to the
4 construction of sector that does not tie sector to an antenna.

5 In other words, all of Petitioner's analysis with respect to
6 Goldberg, none of it applies under the District Court's claim construction.
7 And the District Court's claim construction, just for clarity, is at General
8 Access's slide 59. And you can also find it at Exhibit 2027, and that
9 includes the construction plus all of the District Court's analysis as to why
10 they found that a sector means areas covering predefined arts around the cell
11 site, each covered by a different antenna.

12 And so, starting at General Access's slide --

13 JUDGE MCMILLIN: Excuse me, Ms. Spires. This is Judge
14 McMillin. Where in your briefing did you tell us to adopt the District
15 Court's construction?

16 MS. SPIRES: In the briefing, we said that we were -- that no one
17 had to dispute the District Court's construction. And so, it -- I don't know
18 that we specifically said please adopt the District Court's construction, which
19 I know under the statute is Petitioner's job to set forth the construction that
20 they think is necessary. But we did say that the District Court can -- this is
21 the District Court's construction and apply -- our expert said that he was
22 conducting all of his analyses under the District Court's construction. And
23 so, that was General Access's attempts at saying that we would like the court
24 to adopt the District Court's claim construction.

25 JUDGE MCMILLIN: That you would like the Board to adopt the

1 District Court's construction?

2 MS. SPIRES: Yes, apologies.

3 JUDGE MCMILLIN: And you'll work with -- your Patent Owner
4 response at pages 29 through 31 discusses claim construction and the
5 District Court's construction. I don't see any words there that say to us we
6 contend this is correct and you should adopt it.

7 MS. SPIRES: You're correct. There is nothing in either partie's
8 briefing that says that either construction is correct and should be adopted.
9 Once the claim construction order came out, that was General Access's
10 intent in only conducting an analysis under the District Court's claim
11 construction ruling. And so, that's where this claim construction ruling was
12 set forth. And then in Petitioner's expert, whose analysis is incorporated into
13 the petition, states in his expert declaration that he is applying the District
14 Court claim construction. And so, by incorporating an analysis that only
15 applies to District Court's claim construction, General Access's intent was to
16 advocate that the Board do so as well.

17 JUDGE MCMILLIN: So, your contention with regard to that
18 claim construction is by implication, not explicitly?

19 MS. SPIRES: It was intended to be explicit, but if it is not explicit,
20 then yes, it is at least implicit.

21 JUDGE MCMILLIN: Can you show me where it's explicit?

22 MS. SPIRES: I'm sorry if I said that I misspoke. I said that it was
23 intended to be explicit, but if it was not, then it was at least implicit. If we
24 look at Exhibit 2028, which is the declaration of General Access's expert, he
25 sets forth the construction from the District Court at paragraphs 62 and 63,

1 and then he provides an analysis under the District Court's claim
2 construction after this in paragraphs 64 to 65. And it also explained in his
3 deposition that he was asked to apply the District Court's claim construction
4 of sector.

5 JUDGE MCMILLIN: How (INDISCERNIBLE - TECHNICAL
6 DIFFICULTY) provide that something that's set forth in an exhibit is not to
7 be incorporated unless it is explicitly stated in one of the papers filed? Why
8 should we take what you say is implicit in those two exhibits and adopt it as
9 your contention?

10 MS. SPIRES: In this instance, by setting forth the District Court's
11 claim construction and arguing throughout the brief only based on the
12 District Court's claim construction, the intent was to make explicit that
13 General Access would like the Board to adopt the District Court's claim
14 construction. That is why there is no analysis under the other claim
15 construction that Petitioner refers to as a Patent Owner's construction. All of
16 General Access's constructions are throughout its entire Patent Owner
17 response, which is once the District Court's claim construction came out,
18 only referenced the District Court's claim construction. And so, that is
19 where we would view this as being an explicit endorsement of the District
20 Court's claim construction.

21 JUDGE BARRETT: Ms. Spires, you have a couple minutes left of
22 your original time. You're of course welcome to eat into your rebuttal time.

23 MS. SPIRES: No, I will briefly mention Youssefmir. And then
24 the one point I would like to make here is that Petitioner alleges that a POSA
25 would have combined Youssefmir with Atsuta for all the same reasons that a

1 POSA would have combined Vornefeld with Atsuta. And so, Petitioner
2 assaults General Access for incorporating those arguments, but that's --
3 there's a reason for that because that is the argument that Petitioner made.

4 There is also the issue that Youssefmir does not provide any
5 discussion about sectors. It only states that it may be sectorized and only
6 mentions that to clarify the definition of non-directional and omnidirectional
7 and what that would mean if we're talking about in the context of a sector or
8 not. But it provides absolutely no discussion about sectors, how sectors may
9 affect its invention, how its invention might incorporate sectors or about
10 coordination between those sectors as required by the element of Claim 28
11 that depends -- that incorporates the element of Claim 1D. And Petitioner
12 concedes numerous times in the petition that Youssefmir does not explicitly
13 disclose that the users assigned to certain downlink time sets are in different
14 sectors.

15 And so, for this reason, as stated in briefing, Youssefmir not only
16 fails for the reasons that we discussed with respect to Vornefeld and Atsuta,
17 but it also fails to disclose a broadcast beam signal to wireless access devices
18 within more than one of those sectors.

19 If Your Honors don't have any other questions, I will reserve the
20 rest of my time for rebuttal.

21 JUDGE BARRETT: Okay. Looks like we're good for right now.
22 You still have your 10 minutes remaining.

23 MS. SPIRES: Thank you.

24 JUDGE BARRETT: Mr. Rosenthal, whenever you're ready.

25 MR. ROSENTHAL: Thank you, Your Honor. Brian Rosenthal on

1 behalf of Petitioner. I have a number of points which I'm going to try to
2 handle briefly, but please interrupt with any questions.

3 On the first point, today was the first time that General Access
4 asked for a construction of any term in this petition, and they asked for the
5 construction of sector presumably so that they can try to distinguish
6 Goldburg. That is nowhere in their petition and counsel's statement that its
7 expert only analyzed it under the District Court's construction is just wrong.

8 Paragraph 65 of Exhibit 2028, which is their expert's declaration,
9 explicitly says even under Patent Owner's proposed construction of sector, it
10 is my opinion that the prior art combinations asserted by Petitioner in this
11 IPR do not teach or disclose the Challenged Claims 28 and 29, and it goes
12 on to articulate the reasons for that opinion under the broader construction of
13 sector. It has always been Petitioner's view that the prior art invalidates
14 under any construction of sector and we have explained those positions.
15 And if Patent Owner wanted to rely on a specific construction of sector to
16 dispute those allegations, it was incumbent upon Patent Owner to state that
17 in its Patent Owner response. And it did not, and instead its declarant
18 addressed both constructions. That's number one.

19 Number two, counsel said one would not look to Atsuta to figure
20 out how to deal with uplink downlink interference. We're not saying they
21 would. Uplink downlink interference has long been solved by TDD
22 systems. General Access's expert admitted that that is conventional TDD
23 stuff. And Vornefeld talks about how to deal with uplink downlink
24 interference. People would have taken -- a person skilled in the art would
25 have taken the teaching of Atsuta to combine sectors into a single frame for

1 the complexity simplification that it provides.

2 Third point. We are not arguing for a bodily incorporation of
3 Atsuta. We're not saying take exactly what's described in Atsuta with those
4 frequencies and that frame structure and that example and somehow glue it
5 into Vornefeld. There is a teaching of Atsuta that if you combine multiple
6 sectors into a single frame within a TDMA frame structure, you will obtain
7 computational complexity benefits. That is the singular and simple teaching
8 that we need to rely on in order to modify Vornefeld. And by the way,
9 we're not taking Atsuta and modifying its system to somehow do what
10 Vornefeld teaches. We're taking Vornefeld, which discloses virtually
11 everything. And we're simply saying, ensure that you have multiple sectors
12 represented within this frame because then you simplify your TDMA
13 hardware. That's it. That's the only modification we're making. You don't
14 have to take the multiple frequencies and all the other stuff that Atsuta
15 teaches, it's simply not relevant to the combination.

16 Perplexingly, number five, counsel stated for the very first time,
17 this is nowhere in their briefs, they said when asked a direct question by the
18 panel, isn't it true that Atsuta is TDMA? She said, oh no, not really, it's not
19 really TDMA, and our expert said it's not TDMA. If you look at paragraph
20 77 of their expert declaration, which is Exhibit 2028, he says, Atsuta is
21 directed to a TDMA method and TDMA receiving apparatus. He then says,
22 Atsuda discloses a basic, conventional TDMA method for organizing non-
23 beam formed, et cetera, et cetera. He has always said, as Atsuta says in its
24 title, that it is a TDMA system. This argument, that it is not even TDMA, is
25 brand new, totally false, not what Atsuta says, and just an attempt to try to

1 come up with yet another reason why one wouldn't combine these two
2 references.

3 At first, their argument was TDMA is inconsistent with TDD. And
4 then we pointed out in our brief, Vornefeld combines TDMA and TDD.
5 How could they be inconsistent? And then they argued, well, FDD is not
6 consistent with TDD. And we said, well, but we're not taking the F, we're
7 not -- it doesn't matter whether it's FDD or not, we're not taking that
8 disclosure of Atsuta. That's not what we're learning from Atsuta. And now
9 they're saying, well, Atsuta is not even TDMA. That is a bridge too far.
10 That is not in their briefs, and it's totally opposite of what their expert said in
11 their declaration.

12 They said -- counsel said in her argument that it's possible that
13 Vornefeld would already combine the sectors into a single TDMA frame and
14 have common TDMA circuitry, and therefore, there would be no need to use
15 Atsuta. And therefore, one wouldn't be motivated. That just turns this
16 whole process on its head. The Federal Circuit has found, and this Board
17 has found, that Sprint in the prior IPR did not demonstrate with certainty that
18 Vornefeld discloses combining these into a single frame. There's an
19 ambiguity in Figure 3, the Board found, about whether or not those are
20 separate frames or one frame.

21 So, our argument is, well, Atsuta teaches there's benefit to
22 combining them into one frame. And their response is, well, Vornefeld
23 might already be one frame, so you wouldn't have to combine Atsuta. That
24 doesn't make any sense at all. If Vornefeld already combined the TDMA
25 processing into a single circuit, it would be a single frame. We are operating

1 on the assumption that Vornefeld doesn't teach the entirety of Claim 28 and
2 29 because it doesn't necessarily show that those spatially separated pieces
3 of information are part of the same frame. Atsuta makes it clear, make them
4 part of the same frame because you get to combined circuitry and you get
5 computational advantages. That's what we're using from Atsuta.

6 Counsel then engaged in this argument that somehow Vornefeld
7 itself doesn't disclose multiple sectors, which the panel shut down quickly
8 appropriately. I do want to point out one point. Counsel said, well, we can
9 ignore the prior IPR because the prior IPR was under a different claim
10 construction. At Exhibit 1014, which is the prior IPR petition at page 10, the
11 proposed construction was an arc of the cell site served by a single antenna.
12 I'm paraphrasing. But it was basically the same construction that the District
13 Court adopted. And General Access in that petition said, we don't dispute
14 that construction, it's not necessary. And at Exhibit 1009 to this petition at
15 page 15, which is the final written decision, the Board said, there's no
16 dispute about that claim construction, so we're not going to construe it. So --

17 JUDGE HAAPALA: Mr. Rosenthal, I'm going to interrupt you. I
18 mean, I understand that, but that was a different proceeding, and what is at
19 issue in one proceeding and a different proceeding could be different. So, I
20 appreciate that history, but I'm not sure that it precludes the possibility of a
21 dispute in this proceeding.

22 MR. ROSENTHAL: Understood. I guess my point was only that
23 to the extent that they're trying to drive white space between their admission
24 in the prior case and today on the basis of a different construction, it was the
25 same basic construction that was at issue there. That was my only point,

1 Your Honor. I'll move on.

2 Counsel then engaged in some sort of, I guess, it was expert
3 testimony where she was trying to explain how somehow the purpose of
4 Vornefeld would be thwarted because Vornefeld, prior to Atsuta's
5 combination, would be able to serve 27 subscribers, and then with Atsuta
6 would only be able to serve nine. That is complete attorney argument.
7 That's nowhere in any of the declarations. It's not in any of the briefs. And
8 it's just wrong, absolutely wrong.

9 First of all, again, we're not taking Atsuta in its four corners and
10 gluing it in in some kind of a bodily incorporation into Vornefeld such that
11 you would have to have different frequencies for different sectors, or you
12 would have to have complete non-overlapping time slots. We're simply
13 importing the singular teaching of the computational efficiency that is
14 gained for combining sectors into one frame. And secondly, of course, you
15 could continue to have simultaneity within a sector even if the sectors were
16 separated in time, you could still have simultaneous transmissions within a
17 sector. And so, you could still be serving just as many subscribers. So that
18 argument, which is brand new and unsupported, is also just wrong.

19 I'm sorry, I think I heard something, but I wasn't sure what it was.

20 JUDGE BARRETT: You're fine, Mr. Rosenthal. You have about
21 another minute or two of your time if you want to think about wrapping up.

22 MR. ROSENTHAL: Yes, why don't I wrap up. I guess I want to
23 end by just saying this. Obviousness is not a mechanical process of gluing
24 one thing into another and saying, oh, it wouldn't fit because this, you know,
25 this piece wouldn't fit into that piece in exactly the way it's described. If I

1 had a patent, for instance, on a gas-powered car and there was another patent
2 that taught a navigational system, but it happened to be that that second
3 patent was in an electric vehicle. And I said, I think that navigation system
4 has these advantages. I'm going to combine it with the gas-powered
5 reference. It is not a valid retort to say, oh, well, that's in an electric car, so
6 you couldn't combine that because electric cars and gas-powered cars are
7 incompatible. The navigation system stands on its own. That's the same
8 thing that we're talking about here. Vornefeld discloses everything, as Judge
9 McMillin was talking about. It's already been decided and conceded and
10 adjudged that Vornefeld discloses a transmitter that transmits beams to
11 multiple sectors and transmits a TDD frame with a broadcast beam going to
12 multiple sectors. The only question is, would subsequent beams to different
13 sectors also be in the same frame? And Atsuta answers that question. It
14 says there's value in doing that. And it says explicitly what that value is.
15 And these are both TDMA systems, and they would be compatible.

16 And so, for that reason and that reason alone, we believe that the
17 claim should be found to be unpatentable. Thank you.

18 JUDGE BARRETT: Thank you, Mr. Rosenthal. Ms. Spires, Mr.
19 Rosenthal went over a couple of minutes. So, I'll give you 12 more minutes.
20 You may begin whenever you're ready.

21 MS. SPIRES: Thank you, Your Honor. On the claim construction
22 issue, there is no dispute here. Both parties have agreed that the District
23 Court's construction is correct. In fact, Verizon actually argued that
24 construction and won it before the District Court. And so, it should be
25 estopped from arguing against the construction that it advocated and won in

1 the District Court here.

2 Turning to that issue, again, in the POR on pages 30 -- or on page
3 30, Petitioner set forth the District Court's construction of sector, and then
4 said that General Access set forth the District Court's construction of sector
5 and said, particularly relevant to Petitioner's grounds is the District Court's
6 construction of sector as areas defined by an arc around the cell site, each
7 covered by its own antenna, and then went on and explained exactly why the
8 District Court ruled as it did. The reason that it explained why the District
9 Court ruled as it did was to provide this Court the evidence and it would
10 need to rule similarly as the District Court.

11 JUDGE MCMILLIN: Excuse me, Ms. Spires, this is Judge
12 McMillin. Can you show me, because I looked at your claim construction
13 portion of your brief, your response at pages 29 to 31, I will grant you, you
14 explain a bit what happened in District Court. Where do you say that's
15 correct, please adopt it?

16 MS. SPIRES: I am acknowledging we do not use those exact
17 words. That was the intent, however, in (INDISCERNIBLE - TECHNICAL
18 DIFFICULTY).

19 JUDGE MCMILLIN: (INDISCERNIBLE - TECHNICAL
20 DIFFICULTY) --

21 MS. SPIRES: You're breaking up so badly, I don't know what you
22 said.

23 JUDGE MCMILLIN: You said -- your answer was, we didn't use
24 those exact words. Do you use words that convey the same meaning?

25 MS. SPIRES: In my view, yes. That is why --

1 JUDGE MCMILLIN: Please tell me why you chose those words,
2 please.

3 MS. SPIRES: That is why with limited word count, we
4 specifically said that particularly relevant to Petitioner's grounds is the
5 District Court's construction of sector. And then explained exactly why the
6 District Court ruled as it did. That was the intent there.

7 Turning to the TDD FDD issue. I wanted to clarify that TDMA is
8 not a frame structure. It is a method for multiple access that is agnostic to
9 the structure of the frame. So, when Petitioner alleges that the frame
10 structures are consistent and that the technologies fit among the frame
11 structures, they have to be talking about the -- its allegations that both
12 references are TDD. And so, in alleging that both references are TDD, and
13 because they have common frame structures, the -- a POSA would have
14 combined Vornefeld and Atsuta or Vornefeld and Goldberg. Petitioner's
15 allegations simply failed because they alleged that references disclosing
16 FDD were actually TDD. And so, when you see that the references are
17 actually FDD, there is nothing left in Petitioner's motivation to combine
18 arguments. The frames are either FDD or TDD, and they have not shown --
19 they have not been able to prove what their allegation stated that the frames
20 were consistently TDD, and so could be combined.

21 So, we're not trying to argue bodily incorporation here. We are
22 arguing that Petitioner has alleged over and over again, even on the slides
23 today, that there is a common frame structure among the references. And so,
24 for this reason, a POSA would have combined the references. In fact, they
25 even allege in their petition that because of the fit between the technologies,

1 the combination would not result in a difference in function or give
2 unexpected results. But absolutely, there would be unexpected results here.
3 Unexpected result being the opposite of what Vornefeld intended.
4 Vornefeld isn't a reference addressed to computational complexities, which
5 Petitioner keeps alleging is the benefit of Atsuta. Vornefeld is a reference
6 that is addressed to creating the efficiency in the use of the spectrum and use
7 of frequency. And what a combination with Atsuta, any application of what
8 Atsuta is doing is going to require tripling the bandwidth, which is the exact
9 opposite of what Vornefeld seeks to accomplish. Vornefeld specifically
10 teaches away from anything that is going to compromise the efficient use of
11 the scarce radio spectrum that it repeats over and over again, which is the
12 only thing that Atsuta accomplishes when you combine the two.

13 On the -- Petitioner argued earlier that Vornefeld, the proposed
14 construction in the prior IPR was basically the same construction here. I
15 think it's clear that the prior IPR, with the exception of the estoppel effects
16 on this case, is not relevant to this proceeding. That proceeding was decided
17 and did not turn on a definition of sector. In this case, this doesn't need to
18 turn on the definition of sector either. Petitioner alleges that this is all about
19 Goldberg. It's not. Petitioner failed to allege a motivation to combine
20 Goldberg because, once again, it sat there and said that it -- a POSA would
21 combine Goldberg because -- with Vornefeld, because Goldberg is a --
22 discloses TDD, again alleging the same thing that the references are the
23 same frame structure, relies on this for a motivation to combine, and yet,
24 does not -- the references that Petitioner cited to in Vornefeld, all are related
25 to GSM, which is an FDD reference.

1 So, Petitioner made the same mistake in Vornefeld, or with respect
2 to Goldberg, that it made with respect to Atsuta. And so, for the same
3 reasons that a POSA would not have combined Atsuta and would not have
4 looked to an FDD reference, a POSA is also not going to have looked to
5 Goldberg, and the disclosures that Petitioner cited to.

6 Petitioner is saying that we have agreed that you can have just as
7 many transmissions among sectors. But that is not the case at all. The
8 argument is not that there cannot be simultaneous transmission within a
9 sector. That's why we were using the 3, 6, 9 explanation earlier, saying how
10 Atsuta would be inefficient in applying to sectorization if you were to
11 sectorize Vornefeld, in addition to tripling the frequency and tripling the
12 bandwidth. So doing the exact thing that Vornefeld specifically teaches
13 against. It is now going to say that these sectors cannot transmit
14 simultaneously among each other. So, you would go from a normal
15 sectorized system, which could transmit to all sectors simultaneously.

16 If you were to implement Atsuta, now you're going to have to go
17 sector, by sector, by sector, by sector. And so, you are not going to be able
18 to get the simultaneous transmission that Vornefeld specifically teaches.
19 And again, it teaches that you want the simultaneous transmission unless and
20 until you cannot conduct the simultaneous transmission without interference
21 issues. Then and only then, Vornefeld says, do you move to separating the
22 transmissions on the time axis. And so, it is only at that point that a POSA
23 would look to such separation. And Petitioner has not alleged in any way,
24 shape, or form that a POSA would be able to implement Atsuta only for the
25 transmissions that Vornefeld needs to separate on the time axis. Like I don't

1 believe there's any way that a POSA could combine all of the transmissions
2 into a single frame like Atsuta does and still transmit simultaneously,
3 because Atsuta says specifically you cannot do so, but then divide in a time
4 segment on the time axis like Vornefeld argues you need to only for those
5 references.

6 And so, it comes back to the teaching of Vornefeld. This is not
7 bodily incorporation like POSA would like to allege it is. This is a
8 motivation to combine. They're saying that we're not going to start with
9 Atsuta and try to put Vornefeld into Atsuta, you're going to start with
10 Vornefeld. Well, if you're going to start with Vornefeld then you have to
11 start with Vornefeld and everything that it teaches. And Vornefeld says
12 specifically that it is teaching at page 57 that the utilization of the spatial
13 dimension helps to increase the transmission capacity, reduce intra- as well
14 as intercellular interference, and leads to more efficient usage of the scarce
15 radio spectrum.

16 Same as in the first paragraph where it says that the spectral
17 efficiency becomes a crucial issue. You cannot have a crucial issue
18 disclosed in Vornefeld and completely ignore the effect that Atsuta would
19 have on this crucial issue in wasting spectral efficiency by tripling the
20 frequency band when that's absolutely not necessary. And in fact, wasting
21 much of the frequency as Atsuta explains.

22 It's Atsuta at 5, 49 to 51 says that when the common TDMA
23 synchronous frame is used, time slots of other zones are treated as blank
24 slots. Thus, a receiving apparatus that has a larger transmission capacity
25 than that is actually used and a wider frequency band than that of the

1 conventional frame are required. A larger transmission capacity than that is
2 actually used is the exact type of wastefulness that Vornefeld is wanting to
3 avoid. And a wider frequency -- it requires a wider frequency band than that
4 of the conventional frame is exactly --

5 JUDGE BARRETT: Ms. Spires, your time is expired. If you want
6 to take a minute or two just to wrap up.

7 MS. SPIRES: Okay. Thank you. That is exactly the approach that
8 Vornefeld says should not be taken, and that spectral efficiency becomes a
9 crucial issue because of the steadily increasing demand for transition
10 bandwidth. And so, a POSA would have recognized that combining Atsuta
11 with Vornefeld, in addition to the fact that Petitioner has failed to allege that
12 a POSA would have combined these references with proper support, a
13 POSA would have recognized that they actually would never have combined
14 these references because doing so would defeat the purpose of Vornefeld.
15 Thank you.

16 JUDGE BARRETT: Thank you. So, this case is submitted. But
17 before, don't anybody leave yet. Ms. Perry, do you have any questions about
18 spelling or terminology or anything like that?

19 COURT REPORTER: No. I've been keeping up with it. No, sir.

20 JUDGE BARRETT: No, no questions. All right. Thank you so
21 much. Thank you for being here. And I'm sure you'll give us a wonderfully
22 clear transcript. So, again, thank you everyone. This case is submitted and
23 we are done here, and thank you for your time. Have a lovely afternoon.

24 MR. ROSENTHAL: Thank you, Your Honors.

25 JUDGE MCMILLIN: Thank you.

IPR2023-00978

Patent 7,230,931 B2

1 (Whereupon the above-entitled matter went off the record at 3:12
2 p.m.)

IPR2023-00978
Patent 7,230,931 B2

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