

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

FRACTUS, S.A.,

Plaintiff,

v.

VERIZON CONNECT INC., ET AL.,

Defendants.

Civil Action No. 2:24-cv-01009-JRG-RSP

JURY TRIAL DEMANDED

(LEAD CASE)

FRACTUS, S.A.,

Plaintiff,

v.

GEOTAB INC.,

Defendant.

Civil Action No. 2:24-cv-01008-JRG-RSP

JURY TRIAL DEMANDED

(MEMBER CASE)

**FRACTUS'S OBJECTIONS TO MAGISTRATE JUDGE PAYNE'S
CLAIM CONSTRUCTION ORDER**

Pursuant to Federal Rule of Civil Procedure 72, Plaintiff Fractus S.A. respectfully objects to the portion of Magistrate Judge Payne’s Claim Construction Order (“Order,” Dkt. 104) finding the term “complexity factor” indefinite. *See* Order at 20–32.¹ Because this indefiniteness finding is dispositive of certain claims, it should be reviewed *de novo* under Rule 72(b). *See* Fed. R. Civ. P. 72(b)(1) & (b)(3); *E-Contact Techs., LLC v. Apple, Inc.*, 2013 WL 12136607, at *1 & n.2 (E.D. Tex. Apr. 16, 2013). Even if treated as non-dispositive and reviewed under Rule 72(a), the Court should set aside the indefiniteness determination as “clearly erroneous” and “contrary to law.” Fed. R. Civ. P. 72(a).

Defendant Geotab Inc. argued that “complexity factor” is indefinite because related U.S. Patent Nos. 11,031,677, 11,349,200, and 12,095,149 disclose two ways to determine a three-dimensional (“3-D”) antenna’s two-dimensional (“2-D”) “antenna contour”—a necessary step in calculating the complexity factor: (1) the “orthogonal projection” method, which projects the perimeters of the antenna straight down like a shadow, and (2) the “unfolding” method, which unfolds the antenna’s 3-D portions onto a 2-D plane and traces the perimeters.² *Compare* Dkt. 75 at 18 (orthogonal projection) *with* Dkt. 100-1 at 50 (unfolding). Fractus argued that the patents teach only the orthogonal projection method, and even if the patents also teach the unfolding method, a person of ordinary skill in the art (“POSITA”) would not use that method because doing so would violate several other requirements for calculating the complexity factor.

The Court evaluated Defendant’s indefiniteness arguments under the three-factor test set forth in the *Ball Metal* case:

¹ Plaintiff incorporates by reference the claim construction briefing (Dkt. 75, 77, 81, 86), the *Markman* presentations (Dkt. 99-1, 100-1), and the transcript of the *Markman* hearing (Ex. 1).

² Defendant also argued that the term is indefinite because there are multiple ways to determine the number of rows and columns on the G2 grid. The Order did not reach this issue. Order at 32. If this Court disagrees with the Order’s indefiniteness ruling, it should also reject Defendant’s argument as well for the reasons Plaintiff explained in the briefing and at the *Markman* hearing.

[A] claim may be invalid as indefinite when (1) different known methods exist for calculating a claimed parameter, (2) nothing in the record suggests using one method in particular, and (3) application of the different methods result in materially different outcomes for the claim's scope such that a product or method may infringe the claim under one method but not infringe when employing another method.

Order at 22–23 (quoting *Ball Metal Bev. Cont. Corp. v. Crown Pkg. Tech., Inc.*, 838 F. App'x 538, 542 (Fed. Cir. 2020)). It was Defendant's burden to prove each factor by clear and convincing evidence. See *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017).

The Court found that Defendant satisfied each *Ball Metal* factor. On factor one, the Court held that Plaintiff was judicially estopped from arguing only one method exists based on Plaintiff's representations in *Fractus, S.A. v. ADT LLC* that two methods were permissible. Order at 23–30. On factor two, the Court found that the unfolding method could be conducted “without performing any actual unfolding.” *Id.* at 31. The Court found factor three was met because Defendant's expert showed the two methods could produce materially different outcomes. *Id.* at 30. Plaintiff respectfully objects to the Court's analysis on each factor.

First *Ball Metal* Factor. Judicial estoppel does not apply to preclude Plaintiff from arguing in this case that the patents teach only one way to determine the antenna contour.³ For judicial estoppel to apply, “the party to be estopped must have convinced the court to accept the previous position.” *In re Condere Corp.*, 2000 WL 1029098, at *2 (5th Cir. July 11, 2000) (citing *In re Coastal Plains, Inc.*, 179 F.3d 197, 206 (5th Cir. 1999)). In *ADT*, Plaintiff essentially conceded that the first *Ball Metal* factor was met, and the Court found the factor satisfied because “Fractus does not dispute there are multiple methods for arriving at the antenna contour.” Dkt. 81-2 (“*ADT* Order”) at 24. In disputing the second factor, Plaintiff argued that the claim language informs a POSITA to choose the unfolding method over the orthogonal projection method. See *id.* at 26. The

³ Defendant never argued that judicial estoppel should apply, so the issue was not fully briefed.

Court did not accept that argument and, in the process, also expressed skepticism towards the unfolding method, explaining that “the ‘unfolding’ approach is not described with respect to any figure nor clearly taught” by the patents. *Id.* at 27. Other portions of the *ADT* Order also suggested that the unfolding method is inconsistent with the specifications. *See* Dkt. 75 at 23; Dkt. 86 at 6; Dkt. 99-1 at 60–65. In light of the *ADT* Order, Plaintiff changed its approach in this case. Judicial estoppel should not force Plaintiff to maintain a position the Court already treated skeptically.

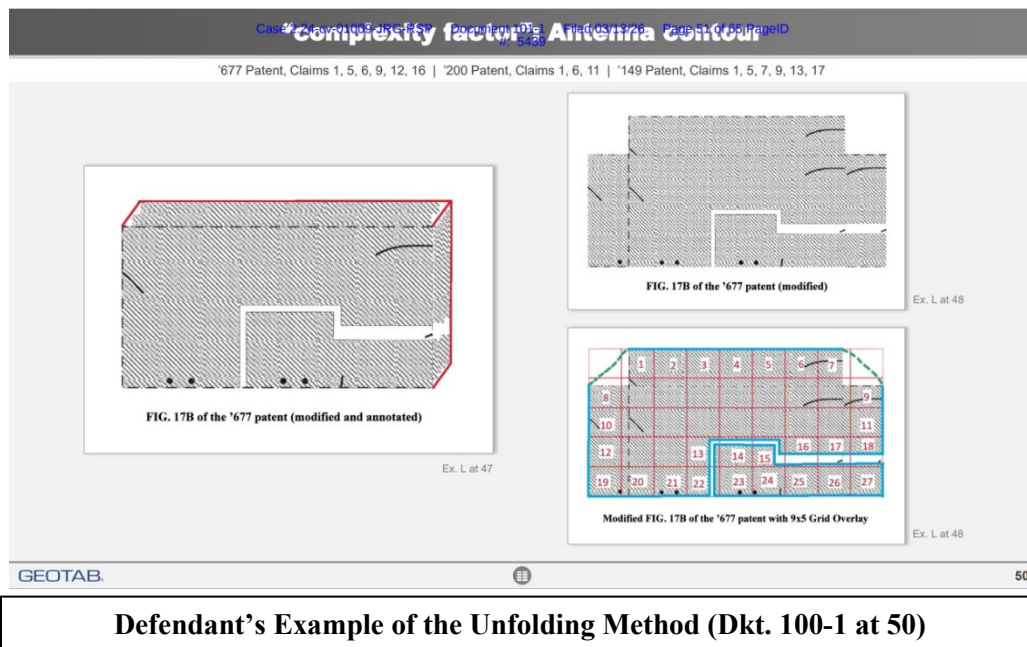
The core purpose of judicial estoppel is to “minimize[] the danger of a party contradicting a court’s determination based on the party’s prior position.” *Hall v. GE Plastic Pac. PTE Ltd.*, 327 F.3d 391, 398 (5th Cir. 2003). Plaintiff is not contradicting the Court’s prior determination; it is adhering to it. After reviewing the *ADT* Order, Plaintiff dropped before trial all claims in *ADT* involving “complexity factor.” Dkt. 86 at 6 n.5. And in advancing its current position on “complexity factor,” Plaintiff here has followed the *ADT* Order’s guidance.

The Court’s alternative holding that “even without judicial estoppel, the specification supports finding that different methods exist,” Order at 29–30, should be set aside in light of the Court’s acknowledgment in *ADT* that “the ‘unfolding’ approach is not described with respect to any figure nor clearly taught,” *ADT* Order at 27.⁴

Second Ball Metal Factor. The Court’s conclusion that “nothing in the record suggests using one method in particular,” *Ball Metal*, 838 F. App’x at 542, rests on the premise that the unfolding method to derive the 2-D “antenna contour” can be conducted “without performing any actual unfolding,” Order at 31. This premise, respectfully, is inaccurate. Defendant never argued this and nothing in the record supports it. To the contrary, unfolding the antenna’s 3-D parts onto a 2-D plane to derive a 2-D antenna contour is an indispensable step of the unfolding method. That

⁴ Fractus also notes that the ’149 Patent expressly claims one method to determine the antenna contour of a 3-D antenna. *See* Dkt. 75-8 (’149 Patent), Claims 7, 13.

is because the subsequent steps for calculating the “complexity factor”—the term at issue—requires overlaying 2-D grids on top of a 2-D antenna rectangle and counting the number of grid cells that contain at least a point of the 2-D antenna contour. *See* Dkt. 99-1 at 77–81; Dkt. 100-1 at 50. Indeed, in Defendant’s expert’s own words, the antenna contour “is the two-dimensional representation of the planar and non-planar elements of the antenna, over which the [POSITA] constructs the grid G2.” Dkt. 75-13 ¶ 102. That is why all of Defendant’s analyses involve unfolding the 3-D antenna to derive a 2-D antenna contour. *See id.* ¶¶ 117–131; Dkt. 100-1 at 50.



Defendant’s Example of the Unfolding Method (Dkt. 100-1 at 50)

The Court’s conclusion that the unfolding method allows “perimeters [to] be measured in three-dimensional space without performing any actual unfolding” is incorrect because it results in a 3-D perimeter rather than the 2-D antenna contour required by the specifications. As explained above, a 3-D perimeter cannot be used to compute a “complexity factor” because the 2-D antenna rectangle and grids cannot possibly capture the perimeter segments that exist in 3-D space. It is like asking a cartographer to measure distance using a straightedge on a globe instead of a map.

Because the unfolding method requires actual unfolding, this Court in the previous case suggested that it is at odds with other parts of the specifications. For examples, the Court pointed

out in the *ADT* Order that there is “no way in which an unfolded antenna would *not* exceed the boundaries of the antenna rectangle,” *ADT* Order at 25 n.6, yet the patents teach that a POSITA must count only “the number of cells . . . that are completely inside the antenna rectangle,” Dkt. 75-6 (’677 Patent) at 19:61–67. Similarly, the Court stated in the *ADT* Order that “the cell size of the grids is chosen based on [the] antenna rectangle, not the profile of the unfolded antenna,” *ADT* Order at 25 n.6, but the unfolding method, as demonstrated by Defendant’s expert, also violates this requirement, *see* Dkt. 99-1 at 80–81. Defendant and its expert had no substantive response to these arguments. And the Court in this case found these arguments, which are supported by the *ADT* Order, “unpersuasive” only because it reasoned here that the unfolding method did not require any unfolding. Order at 31.⁵ In short, a POSITA would employ the orthogonal projection method to determine the 2-D antenna contour, as it is the method fully consistent with the specifications.⁶

Third *Ball Metal* Factor. If the Court’s second-factor determination is upheld, its third-factor determination must be set aside because the two cannot be reconciled. The Court relied on Defendant’s expert’s analyses that the orthogonal projection and unfolding methods can result in materially different levels of complexity. *See* Order at 30. But, as explained above, Defendant’s expert’s analyses require unfolding of the antenna. There is nothing in the record showing the level of complexity of any antenna under the Court’s understanding of the unfolding method.

Accordingly, Plaintiff asks this Court to set aside the Order’s indefiniteness finding.

⁵ The Court also stated that “Plaintiff’s expert [] does not persuasively demonstrate reasonable certainty as to how the antenna contour is determined.” Order at 32. But it is Defendant’s burden to prove by clear and convincing evidence that “nothing in the record suggests using one method in particular.” *Ball Metal*, 838 F. App’x at 542; *BASF Corp.*, 875 F.3d at 1365; *ADT* Order at 29.

⁶ In addition, the ’149 Patent provides guidance by claiming the orthogonal projection method for determining the antenna contour of a 3-D antenna. *See* Dkt. 75-8 (’149 Patent), Claims 7, 13.

Dated: March 31, 2026

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the above and foregoing document has been served on all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system on March 31, 2026.

/s/ Xiaoming Wang
Xiaoming Wang

EXHIBIT 1

MARKMAN HEARING

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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

FRACTUS, S.A.,	)	
	)	
Plaintiff,	)	
	)	
VS.	)	Civil Action
	)	No. 2:24-cv-01009-JRG-RSP
VERIZON CONNECT INC., ET AL,	)	
	)	
Defendant.	)	
_____	)	

OFFICIAL TRANSCRIPT OF PROCEEDINGS - MARKMAN HEARING
BEFORE THE HONORABLE ROY S PAYNE
UNITED STATES MAGISTRATE JUDGE
March 11, 2026; 9:00 a.m.
MARSHALL, TEXAS

Proceedings reported with realtime stenography; transcript
produced with computer-aided transcription.

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1 MORNING SESSION

2 MARCH 11, 2026

3 WHEREUPON. . .

4 the following proceedings were had:

5 THE COURT: For the record, we are here for the claim
6 construction hearing in Fractus versus Verizon is the lead
7 case, which is Number 2:24-1009. And I understand that the
8 Verizon matter has been stayed and that this is really in the
9 Fractus versus Geotab matter.

10 would counsel state their appearances for the record.

11 MR. NELSON: Good morning, Your Honor. Justin Nelson
12 from Susman Godfrey. And I'm joined by Emily Cronin, Calvin
13 Capshaw, Robert Greenfield, and Xiaoming Wang.

14 THE COURT: All right. Thank you, Mr. Nelson.

15 MR. GILLAM: Good morning, Your Honor. Gil Gillam
16 for Geotab. Also with me today is Mr. Hunter Keeton, will be
17 arguing for us today, as well as Michael Albert and then
18 in-house with Geotab is Wil Nilsson. Ready to proceed,
19 Your Honor.

20 THE COURT: All right. Thank you, Mr. Gillam.

21 MR. ANDERSON: Good morning, Your Honor. Kevin
22 Anderson here on behalf of Verizon. With the Court's
23 indulgence and in light of our settlement, which is a fully
24 signed and final agreement, and we're just waiting to
25 effectuate payment. In light of that, I'd like to be excused,

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1 if I could, today.

2 THE COURT: All right. Mr. Anderson, in light of
3 that, you are excused.

4 MR. ANDERSON: As you know, I have other things to
5 do. Thank you very much, Your Honor.

6 THE COURT: All right. Thank you.

7 I will also point out for the record that earlier this
8 morning we distributed to counsel for both sides a set of
9 preliminary constructions of most of the disputed terms. I do
10 want to emphasize that the intent of issuing those preliminary
11 constructions is not to prevent either side from arguing
12 whatever positions they think are appropriate on these terms.

13 Rather, the intent is to let counsel know where the Court
14 is after the initial review of the briefing and the record so
15 that you can focus your arguments where you think the Court has
16 most gone astray.

17 I do reserve the right to amend these preliminary
18 constructions and not uncommonly do change them based on the
19 arguments at this hearing. So I hope they'll be taken in that
20 spirit.

21 I would like to hear the terms argued on a term-by-term
22 basis, but I'm happy to take them in whatever order counsel
23 thinks is most efficient, and I'm happy to group them to the
24 extent that that is most efficient.

25 Having said all that, I'll turn it over first to counsel

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1 for Plaintiff, Mr. Nelson.

2 MR. NELSON: Thank you, Your Honor.

3 A couple of really logical points first. Actually, let
4 me turn to the last preliminary construction, which is "close."
5 Counsel for Geotab can confirm but I don't believe that that is
6 an issue, and so I think we can take that off. I do not
7 believe they're arguing for indefiniteness of that term.

8 THE COURT: All right.

9 MR. KEETON: Yes, Your Honor. Hunter Keeton for
10 Geotab.

11 That is correct. Geotab is not arguing on the term
12 "close," item F, in the tentative order.

13 THE COURT: All right. Then I'll show that that term
14 is withdrawn from consideration today.

15 MR. NELSON: Thank you, Your Honor.

16 With respect to the remaining ones, I believe planar
17 antenna and non-planar antenna are agreed already, so I don't
18 believe there will be argument on what is D1 and D2 either and,
19 again, counsel for Geotab can confirm; but I think we're on the
20 same page there as well.

21 THE COURT: And we were attempting to capture the
22 apparent agreement, and is the preliminary construction
23 reflective of that agreement?

24 MR. NELSON: Yes, Your Honor, from Plaintiff's
25 perspective.

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1 MR. KEETON: Yes. Your Honor. Same from Defendant's
2 perspective.

3 THE COURT: All right. Thank you both. And we'll
4 show, then, that the "planar" and "non-planar antenna" terms
5 are agreed.

6 MR. NELSON: So now we're down to four, Your Honor.
7 And I would say it's really up to the Court's pleasure. I
8 think that the longest term in terms of the discussion with the
9 Court will be "complexity factor." It is, indeed, the most
10 complex. And so it's really up to the Court, Your Honor, about
11 whether you would like to do that. I think it would most
12 naturally fit first or last.

13 I don't think -- the other three, of course, will take up
14 a little bit of time. But I think "complexity factor" will far
15 outweigh in terms of -- in terms of argument.

16 THE COURT: I'm prepared for any order that you think
17 is best. If you want to start with the "complexity factor"
18 term, that's fine with me.

19 MR. NELSON: Well, I would actually recommend doing
20 it in the order of Your Honor's preliminary constructions and
21 just, for lack of a better word, knock out the other three.

22 THE COURT: Then let's do that.

23 MR. NELSON: Great. Okay. Thank you, Your Honor.
24 I'm going to turn it over to Ms. Cronin.

25 MS. CRONIN: Emily Cronin for the plaintiff, Fractus.

1 Your Honor, we are fine with the preliminary construction
2 for "antenna extends," which is Term A. But we would just ask,
3 and I'm using the ELMO to show Claim 1 of the '458 patent, I
4 think that the most natural construction, using the Court's
5 preliminary construction, is to change the term that is being
6 disputed and construed to "antenna extends in a direction." We
7 just think that if you were to plug in the Court's preliminary
8 instruction replacing "antenna extends in a direction," it
9 makes more sense, it's clearer, and it will be less confusing
10 to a jury.

11 Other than that, we are comfortable with the Court's
12 construction and can rest on our briefs.

13 THE COURT: All right. And does the defendant have
14 argument on the issue of including "in a direction" as part of
15 the construed term?

16 MR. KEETON: Your Honor, no, I don't think so. The
17 only point I'd want to clarify, and it sounds like Plaintiff is
18 on board with this, is as this term is used in the various
19 claims of this patent, the antenna can only extend in the
20 longitudinal direction, which as shown in this example here, is
21 the first antenna is extending in the longitudinal direction
22 corresponding to the general axis of symmetry of that smallest
23 rectangle, that that is in the direction substantially parallel
24 to the first side. If you look at the rest of the claim, that
25 has to do with the first and second sides of the ground plane.

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1 With that clarification, which I believe is not disagreed with
2 by Plaintiff, we are fine with the tentative construction.

3 MS. CRONIN: Yes, Your Honor.

4 Could you actually pull up Slide 24, please. Actually
5 slide 21, please.

6 So I believe, if I understood Mr. Keeton correctly, I
7 believe we are in agreement, but just to be crystal clear. The
8 bottom portion of this slide shows the specification
9 columns 10, lines 38 through 42 where the phrase "in the
10 direction" is defined. So we understand that the Court took
11 the "in the direction" language in its preliminary
12 construction. So as long as "antenna extends in a direction,"
13 is the full phrase from the claim being construed, we think
14 this makes the most sense and it aligns with what the
15 specification defines as "in a direction" or "in the
16 direction."

17 THE COURT: And if -- if the point that Mr. Keeton
18 had was that this construction is not overriding other claim
19 requirements about the antenna, then I would agree with that
20 point. If it was a different point, you may need to make it
21 again.

22 MR. KEETON: I think you have the point correctly,
23 Your Honor.

24 THE COURT: Okay.

25 MR. KEETON: The antenna extends in one direction.

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1 THE COURT: All right. Then, with that amendment to
2 the disputed term, we'll show that there is no further argument
3 about this construction; is that right?

4 MS. CRONIN: Yes. Thank you, Your Honor.

5 THE COURT: All right. Thank you, Ms. Cronin.

6 MR. NELSON: Your Honor, next up is "operating
7 wavelength." Your Honor had adopted our plain and ordinary
8 suggestion here. I'm happy to go first or if Your Honor would
9 like to hear from counsel for Geotab as well. We're at the
10 Court's pleasure.

11 THE COURT: I think it would make sense for the
12 defendant, then, to go first on this.

13 MR. NELSON: Thank you, Your Honor.

14 MR. KEETON: Thank you, Your Honor.

15 So this term is "free-space operating wavelength."
16 Fractus proposed no construction necessary. That's what was
17 adopted in the tentative. Geotab's proposed construction is
18 "free-space operating wavelength," and that specifically has to
19 do with the claim in which this term appears.

20 There's only one claim where it appears, only Claim 14 of
21 the '458 patent, as shown here. And if we focus in on the
22 parts of the claim where the term appears, it's these two
23 limitations. They all have to do with the second antenna in
24 this claim. And, importantly, there's no dispute between the
25 parties that this claim only relates to a single embodiment in

1 the specification, which is the one that's at the bottom of
2 Column 17.

3 So we have a second antenna that's inscribed in a second
4 rectangular area. That covers antenna 402 in the spec and it's
5 rectangular area 403.

6 Then the claim requires, underneath there, a sum of a
7 length and a width of the second rectangular area that is
8 smaller than a quarter of an operating wavelength of the second
9 antenna. Again, that connects to a single embodiment in the
10 specification, that same embodiment which is shown here at the
11 bottom of Column 17, where it's advantageous for the sum to
12 have that ratio of a free-space operating wavelength.

13 The claimed embodiment is the one that's smaller than
14 one-quarter of the free-space operating wavelength. There's
15 even a slightly broader but unclaimed embodiment immediately
16 above where it's one-half of the free-space operating
17 wavelength.

18 So this is the sole embodiment in the specification
19 that's covered by this claim and it expressly teaches
20 free-space operating wavelength.

21 It doesn't talk about this concept in any -- in relation
22 to any other type of operating wavelength. And it doesn't say
23 that free space is an example of how to achieve this for this
24 embodiment, it just says it has to do with free-space operating
25 wavelength.

1 And this lines up with what the rest of the specification
2 does. In every instance where there's a discussion of a
3 rectangular area to work out the operating wavelength of the
4 antenna rectangles, it's -- these are embodiments that are not
5 just the one covered by Claim 14 but other embodiments
6 involving rectangular areas. It always talks about free-space
7 operating wavelength. We all have all the examples here. And
8 it's always used as a measure of physical distance.

9 And as we briefed, that makes complete sense and is
10 unsurprising, because free-space operating wavelength relates
11 to the speed of light in a vacuum which is an actual constant
12 that can be measured to frequency. So that's a suitable
13 objective way of measuring physical antenna dimensions. It's
14 how the specification uses it and it's how all the dictionaries
15 we cited use it, our expert talked about it, and it's how one
16 of ordinary skill would have understood it.

17 Now, Fractus, in its briefing points to a couple of other
18 embodiments that don't relate to Claim 14, and I expect they'll
19 tell you about those a little bit today as well. Those are the
20 embodiments on Columns 16 and 18 that they talk about. Those
21 have to do with electrical lengths or unfolding antenna slots.
22 Those aren't relevant to the type of operating wavelength
23 that's actually claimed in Claim 14.

24 If they had wanted to claim electrical lengths, for
25 example, they have an embodiment that supports that, they could

1 have done it. They didn't in this patent.

2 So that's why we are talking about the Nystrom analogy
3 and the Phillips principle, that a term can have a narrower
4 meaning than it might immediately appear if the specification's
5 uniform disclosure compels it. That applies here.

6 So even if other parts of the specification could be
7 argued to go more broadly in terms of operating wavelength as
8 to the actual embodiment that's claimed, the Nystrom case and
9 that logic applies.

10 Fractus cannot use file history or claim differentiation
11 to broaden the term in Claim 14 beyond what the written
12 description supports even if it earlier pursued in the file
13 history but then abandoned claims that don't have anything to
14 do that. So free-space operating wavelength as used in
15 Claim 14 provides an unambiguous objective measure.

16 As a follow-up point, Your Honor, and I understand that
17 your tentative order does not go Geotab's way on this, if
18 Your Honor is nonetheless inclined to adopt a
19 plain-meaning/no-construction-necessary position, we request
20 that it be clear -- a point that I think is not disputed by
21 anyone, which is that even if an "operating wavelength," as
22 used in Claim 14, is broader than "free-space operating
23 wavelength," it does at least include "free-space operating
24 wavelength" and does not exclude it as used in Claim 14.

25 THE COURT: Do you contend that "operating

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1 wavelength" does not appear in other claims besides Claim 14?

2 MR. KEETON: In this patent, it does not. This is
3 the only place where this term appears.

4 THE COURT: So it is your position, though, that the
5 "free space" is not part of the ordinary meaning of "operating
6 wavelength" but you're saying that in the context of the
7 embodiment that you say is represented by Claim 14, it should
8 be understood?

9 MR. KEETON: I think that's not quite right,
10 Your Honor. The ordinary meaning of "operating wavelength" is
11 broader than "free-space operating wavelength" but it includes
12 "free-space operating wavelength" within that broader ordinary
13 meaning, and we believe that that is not disputed and is clear.

14 What is disputed is that we believe that, as used in
15 Claim 14, the meaning in Claim 14 is narrower and is limited to
16 free-space operating wavelength rather than being broader and
17 including free-space operating wavelength plus other types of
18 operating wavelengths going through other materials.

19 THE COURT: Obviously there would be an argument that
20 the claim could have been drafted to limit it to free-space
21 operating wavelength but wasn't.

22 What is your answer to that?

23 MR. KEETON: You're right, Your Honor. It could have
24 been drafted that way but was not in this case. However, we
25 believe in the context where they used the phrase

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1 "free-space" -- they used the phrase "operating wavelength" in
2 only one claim and in a claim that connects to a single
3 embodiment where the only way that it makes sense is for it to
4 be free-space operating wavelength that, in that context, a
5 person of ordinary skill reading the claim and the
6 specification, which are the best guides to the patent's
7 meaning, would understand "operating wavelength" in Claim 14 in
8 the context of the patent to be only free-space operating
9 wavelength.

10 THE COURT: So you just mentioned that you believe
11 that Claim 14 only makes sense with "operating wavelength"
12 understood to be limited to free-space operating wavelength.

13 Tell me more about the way Claim 14 is written that
14 supports that argument.

15 MR. KEETON: So the support for that argument has to
16 do with a two -- the two limitations that relate to the second
17 antenna. First, that the second antenna is inscribed in a
18 second rectangular area and then the sum of the length of the
19 width and the width of the second rectangular area is smaller
20 than a quarter of the operating wavelength.

21 In this context, this is about a second rectangular area.
22 We're not talking about operating wavelength in some other
23 context. It's a physical area, and when measuring physical
24 areas like this, to say an electrical length which can be a
25 bunch of different lengths, it does not make sense to one of

1 ordinary skill to think that operating wavelength could be one
2 of the broader category of things, because the different types
3 of media that the wavelength could travel through would affect
4 the wavelength. I believe that point is undisputed.

5 In this context it only makes sense for one of ordinary
6 skill to use free-space operating wavelength to do this
7 measurement because that's the only one that provides a
8 universal constant and frame of reference, like a ruler. And
9 that, again, lines up with the sole embodiment in the
10 specification that is covered by this claim. That is why that
11 makes sense in this context.

12 There are perhaps other claims. If they were not -- that
13 practice did not pursue that might have been more open to
14 electrical length considerations or folding considerations or
15 there might be other types of operating wavelengths that would
16 make sense to one of ordinary skill.

17 But in this context, where you were looking -- trying to
18 work out the physical dimensions of the antenna, using the
19 version of operating wavelength that provides an actual
20 universal constant is the one that makes sense. It's how the
21 specification uses it. It's how this claim uses it. It's how
22 one of ordinary skill in the art would have understood it.

23 THE COURT: All right. Thank you, Mr. Keeton.

24 MR. KEETON: Thank you, Your Honor.

25 MR. NELSON: Thank you, Your Honor. Justin Nelson

1 again.

2 We think this term is quite easy here because Fractus has
3 acted as its own lexicographer and specifically decided this
4 part of the claim language to say operating wavelength, and
5 there is -- it's "an operating wavelength." We certainly could
6 have said "free-space operating wavelength," and so what Geotab
7 is trying to do is really import one part of the specification
8 into the claim when Fractus, of course, any patent owner, but
9 especially the drafter here, is a sophisticated, you know,
10 person and company who knows how to draft a patent application
11 and decided to use "operating wavelength," not "free-space
12 operating wavelength" despite the fact that, in the
13 specification itself, there are multiple references, of course,
14 to both "operating wavelength" and the narrower "free-space
15 operating wavelength." And on this point actually we agree
16 with Geotab: That "free-space operating wavelength" is
17 encompassed within the broader "operating wavelength." It is a
18 part of "operating wavelength." And just on the claim
19 differentiation part, could we go to '365 patent, Claim 2, and
20 here this is an example -- this is not an asserted claim,
21 Your Honor, but Fractus knows how to write in operating free
22 space wavelength when it wants to. This is in the '365 patent.
23 And the claim that we are talking about here, in Claim 14, it
24 only says "operating wavelength."

25 And as I think again, the definition of "operating

1 wavelength" is dependent upon free-space wavelength, but it's
2 going to -- I think there's no dispute here. It's not
3 necessarily going to be the same. You can see this is the
4 equation for operating wavelength. And the λ_0 there
5 is the free-space wavelength, and then you have to determine
6 that -- you know, you have to divide it by the square root.
7 And so -- by the dielectric constant of the medium. And so
8 there's no doubt that it's not like you can just substitute one
9 for the other.

10 And so you look at the operating wavelength in a medium,
11 and that medium includes dielectric materials such as PCBs,
12 other mediums, and, of course, the patent itself discusses some
13 of those other medium: dielectric substrates, PCBs, et cetera.

14 And so the operating wavelength will always be less than
15 or equal to the free-space wavelength. And, again, this is
16 where we agree: The operating wavelength in Claim 14 may but
17 does not have to be the free-space operating wavelength.

18 And our expert agrees, and they are really focusing on
19 this one embodiment; but, of course, it's black letter that a
20 specification cannot be used to narrow a claim term to deviate
21 from the plain and ordinary meaning unless the inventor acted
22 as his own lexicographer or intentionally disclaimed or
23 disavowed claim scope. We did exactly the opposite here by
24 using the term in the specification that was the broader and
25 not the narrower, even though in other claims, in other

1 patents, we used the narrower term instead.

2 We can talk about their expert opinion, but I think this
3 is actually just repetitive of the arguments that we've already
4 done, which is the specification uses both terms. The patentee
5 chose "an operating wavelength" in Claim 14, and it is not true
6 that there's no mention of any other medium. In the
7 specification there are multiple other references to other
8 media that would show why "operating wavelength" is consistent
9 with the specification.

10 So the -- because the specification does not consistently
11 or exclusively use "free-space operating wavelength" and, in
12 fact, there's differentiation, we would submit that
13 Your Honor's tentative should stand. Thank you, Your Honor.

14 THE COURT: Mr. Nelson, what do you say in response
15 to the argument that the two limitations that Mr. Keeton
16 identified from Claim 14 suggests that the claim contemplates a
17 free-space operating wavelength?

18 MR. NELSON: I don't think that's right. I think
19 that it could encompass a free-space operating wavelength. But
20 the fact that the claim itself is drafted to show that it can
21 include an operating wavelength means specifically what the
22 patent says, which is it is not just limited to free-space
23 operating wavelength.

24 They easily -- if that were the case, it would make no
25 sense for the patentee to put in something when it knows how to

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1 write free-space operating wavelength and choosing Claim 14 to
2 use the broader term but somehow to narrow it down to the -- to
3 the term that it specifically wanted to include as a broader
4 term there.

5 THE COURT: All right.

6 MR. NELSON: Thank you, Your Honor.

7 THE COURT: Thank you, Mr. Nelson.

8 MR. KEETON: Your Honor. If I may address one brief
9 claim differentiation point. Mr. Nelson pointed to one of the
10 claims in the '365 patent that uses the phrase "free-space
11 operating wavelength." That claim does use that term but note
12 that this point was not briefed. Note that it is a different
13 patent from a different family with different inventors, no
14 overlapping inventors. While Fractus is the owner of both
15 patents, in our view, whatever value of claim differentiation,
16 which is a guide rather than a rule, is quite limited here as
17 to the '365 patent having an effect on the meaning of the term
18 "operating wavelength" and the '458 patent.

19 THE COURT: All right. Thank you, Mr. Keeton.

20 And that takes us to the 4G term.

21 MR. NELSON: Thank you, Your Honor. And for this
22 Mr. Greenfeld will be arguing on behalf of Fractus.

23 MR. GREENFELD: Good morning, Your Honor. Robert
24 Greenfeld for Fractus.

25 Regarding "4G communication standards," we assert that no

1 construction is necessary for this term. If in the ADT case
2 the Court construed it also gave it a plain and ordinary
3 meaning in that case. We understand it was in a slightly
4 different context -- it was in the context of indefiniteness --
5 but in either case, plain and ordinary meaning should -- should
6 prevail.

7 THE COURT: So let's talk about what you believe the
8 plain meaning is.

9 MR. GREENFELD: The claim meaning is?

10 THE COURT: The plain meaning.

11 MR. GREENFELD: The plain meaning is. So starting
12 with the specification, the specification lists a number of
13 different services. They call them 4G services and sometimes
14 they call them 4G standards. So HSDPA, for example, Wi-Fi,
15 WiMAX, WiBro, are different services, features, of 4G. It also
16 talks about different frequency bands.

17 So you see the frequency regions listed also on the right
18 here in the gigahertz spectrum but also certainly contemplated
19 down in the megahertz -- in the megahertz spectrum.

20 So if we want to discuss the preliminary construction
21 which talked about a standard that might have been approved or
22 proposed at the time that the patent was filed, these were some
23 of the standards that were being considered as part of the 4G
24 or an advanced three-and-a-half-G-type system.

25 THE COURT: One of the reasons why it seems that a

1 construction may be helpful is that the date of -- the
2 effective date of this patent falls in a time when the standard
3 was under development, and I think that -- so the thought is
4 that it would be helpful to clarify how this term relates to
5 the standard.

6 MR. GREENFELD: Sure. And even going back to your
7 opinion in the ADT case, you had recognized that there is no
8 finalized standard as of the time of the priority date in this
9 case, the late 2006. So -- but there were candidate frequency
10 bands that were being used. They may not have been called LTE
11 or they might not have been identified specifically as LTE but
12 they were candidate bands.

13 Can we have Exhibit K up?

14 So page 4, although I don't know if it's 4 on the bottom
15 or the 4 on the top. So on the bottom it talks about candidate
16 bands. Factors to consider in analyzing potential candidate
17 bands. And IMT-Advanced, it's known as a 4G-type standard;
18 but, again, even here, even in this recommendation or in this
19 document, which was created in 2006, they didn't use the term
20 "4G." So even though they were -- you know, ITU was the
21 International Telecommunications Union, and they were advancing
22 recommendations and decisions about bands.

23 So this was -- this was really where the issue comes. In
24 other words, were they maybe candidate bands. So I don't know
25 if they were proposed at the time; but, again, the patent uses

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1 the term "4G," so 4G was known, and different features and
2 different bands were also known that they could be part of the
3 4G standard.

4 THE COURT: So what is your position on the plain and
5 ordinary meaning of "4G communication standards" as used in
6 these claims?

7 MR. GREENFELD: So it would be standards that were
8 considered or candidate bands and features that were considered
9 at the time of the effective filing date of this patent. That
10 were considered -- sorry -- for the 4G or IMT-Advanced
11 standards.

12 THE COURT: And this -- what we're dealing with here,
13 really, is the frequencies; right?

14 MR. KEETON: Right. So -- I'm sorry.

15 THE COURT: I mean, so not all necessarily the
16 features of the 4G standard.

17 MR. GREENFELD: Correct. And this issue, I guess, is
18 precipitated by Defendants wanting to limit 4G to three
19 specific bands, the LTE bands 12, 13, and 14, and I can get
20 into their motivations or their supposed motivations for that.
21 But almost any time you limit a construction, you're going
22 to -- you might have problems with the jury -- right? -- the
23 jury will automatically assume that if you say LTE it's only
24 going to be LTE, and there were bands that -- there were bands
25 within 4G that are not LTE bands. And there are concepts and

1 there are features that are not LTE-based.

2 So that would -- that's going to -- you're just asking
3 for trouble during jury deliberations as to what -- as to what
4 would satisfy the claim term.

5 THE COURT: Well, I think the way to avoid that
6 confusion is to provide a clear construction.

7 MR. GREENFELD: Right. But, I guess, limiting it to,
8 for example, the proposed construction would be long even --
9 including long-term evolution. So if some of the bands that
10 the infringing products use are not LTE bands but other
11 4G bands, then the jury might limit the construction just to
12 LTE, for example, and then -- and not consider those infringing
13 bands. Even though their expert, Plaintiff's expert, and
14 Defendant's expert would likely agree that those bands would
15 fall under the 4G rubric.

16 THE COURT: All right. What I'm hearing is just a
17 concern that the jury will ignore the wording of the
18 construction or is there something in the wording that you
19 think could mislead them.

20 MR. GREENFELD: Yes. So you're talking about in the
21 proposed preliminary construction?

22 THE COURT: Yes. That's right.

23 MR. GREENFELD: So certainly the last -- the last
24 line, "including long-term evolution LTE," that would be -- I
25 think that would introduce a bias to the jury. But also the

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1 word "adopted." We know that standards were not adopted as of
2 the priority date of the patent. And even "proposed" may be
3 ambiguous as opposed to, for instance, the concept that we
4 showed before in Exhibit K that was candidate or candidate
5 bands.

6 THE COURT: So it's starting to sound fairly
7 indefinite. Can you -- what do you think the plain meaning of
8 "4G communication standards" is in the context of these claims?

9 MR. GREENFELD: Well, again, so it's part of -- it's
10 part of the features and part of the bands that were under
11 consideration for the 4G standard. And so --

12 MR. NELSON: If I may, Your Honor.

13 THE COURT: Okay.

14 MR. Nelson: I think if Your Honor -- if you change
15 the definition to "that were under" -- instead of "had been
16 adopted or proposed," which are -- "that were under
17 consideration as of," that would resolve it. And then to
18 strike "including long-term evolution," because there was more
19 under consideration than simply LTE. Again, LTE would have
20 been part of this but would not be the exclusive ones. And by
21 just pointing out the LTE, it would be to the disadvantage of
22 others that are not simply LTE. That would resolve our
23 concerns, Your Honor.

24 THE COURT: All right. I think that the inclusion of
25 "LTE" there was designed to be inclusive, not to be exclusive,

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1 but your concern is that the jury will think it means only LTE?

2 MR. NELSON: Potentially, or I think it would be
3 partially resolved, it was "including but not limited to LTE"
4 or something along those lines, because there's no doubt that
5 it's not limited to LTE and there are other bands at issue that
6 are part of the 4G standard that are not LTE, Your Honor.

7 THE COURT: Let me talk, then, about your "under
8 consideration" term. It -- that, in your mind, is different
9 than "proposed."

10 MR. NELSON: No. Not necessarily. I think as long
11 as we're on the same page about what "proposed" would be. We
12 just don't want an argument from Geotab to say that something
13 that clearly falls within what was being considered as the
14 document that we're looking at would somehow be outside of it.

15 So, in other words, it's -- I don't want to say that we
16 have a strong preference for one versus the other as long as
17 we're on the same page and that we know what we're dealing
18 with. So that we're not going to get -- in other words, we
19 think it is quite clear what was under consideration, whether
20 we call that "proposed" or "under consideration" really is
21 almost half a dozen or six of the other.

22 THE COURT: All right. Thank you, Mr. Nelson.

23 Mr. Greenfield, I didn't mean to cut you off, I was just
24 trying to get a little clarification.

25 MR. GREENFELD: No. And that's certainly fine. But

1 I hope Mr. Nelson gave the clarification you needed.

2 THE COURT: I think I do understand the position now.

3 MR. GREENFELD: Okay. And then I guess the only
4 other point, if I could go to the slides, is that I guess to
5 the extent that the dispute is, you know, the defendants say
6 the dispute is what bands are within the definition of the 4G
7 standard, and even there, this is their petition in the IPR.
8 It shows a lot more bands than they were, you know, originally
9 had been their proposal would include those -- just the three
10 bands. There are a lot more bands and, again, this is really a
11 question of limiting -- having the construction itself giving
12 the idea to the jury that the term is limited to specific bands
13 within 4G. In other words, you know, we -- our expert will get
14 on the stand and will say, you know, we'll ask -- will be
15 asked, is this the 4G band or is this a band that operates
16 under the 4G standard, and the expert will say, yes. And they
17 can ask their own expert the same question. And there are
18 known standards and known proposals and known consideration
19 proposals at the time.

20 And so it's really those types of -- those bands that
21 were, again, under consideration, proposed and then even later
22 adopted would be part of "4G communication standard."

23 And the only other point I want to make is just that the
24 plaintiff has made -- sorry, the defendants have made lack of
25 written description argument in the, in their IPR, and so we

1 think this is also part of that motivation for this very
2 limited construction that they were proposing.

3 I haven't decided or considered exactly how that would
4 affect -- how the Court's preliminary construction would affect
5 that argument, but it's really just -- just wanted to bring it
6 to the Court's attention.

7 THE COURT: All right. Thank you, Mr. Greenfeld.

8 MR. KEETON: So a couple of points here, Your Honor.
9 Some of which is in rebuttal to what Fractus argued, some of
10 which relates to your tentative construction from earlier this
11 morning.

12 These are the parties' two proposed constructions. And
13 these are some example claims where this term appears. As you
14 can see within the claims, there's not a lot of extra
15 information given about -- within the claims about what a 4G
16 communication standard is or about what -- what aspects of it
17 matter. What matters is the frequency bands and that it's
18 configured to transmit and receive signals from a 4G
19 communication standard.

20 The reason for Geotab's proposal here is that it was
21 really just about efficiency and clarity. The parties agree on
22 the substance. There's no dispute that "4G communication
23 standard" includes LTE and includes LTE bands 12 to 14.

24 As it relates to your tentative construction, the part at
25 the end that says, "including long-term evolution," Geotab is

1 fine with that. We're also fine with Fractus's proposal of
2 "including but not limited to long-term evolution."

3 It was not our intent with our proposed construction nor
4 do we believe it is the intent of the Court's tentative
5 construction to limit "4G communication standards" to only LTE,
6 and we don't believe any of these proposed constructions do
7 that. The reason LTE matters is because LTE is what Fractus is
8 accusing in the case.

9 That's the context of why people are spending so much
10 time talking about LTE even though the patent never uses the
11 words "LTE."

12 So, in our view, a jury without technical expertise is
13 not going to understand what "4G communication standards" means
14 without any guidance. Leaving the term unconstrued would
15 invite confusion. We agree with Your Honor that the plain
16 meaning is not immediately clear and that there ought to be
17 some construction of what the claim meaning is.

18 Now, Fractus has pointed out that in the ADT case this
19 Court found no construction to be necessary. But there the
20 dispute was indefiniteness which Geotab is not arguing here.
21 And the lack of written description issues, the priority date
22 issues, those are not yet ripe. Fractus pointed out various
23 suspicions about Geotab's motivations. Without using
24 pejorative language, yes. Whether there is written description
25 support for these claims based on this term and whether the --

1 what the effective filing dates of the patents are here, those
2 are live issues that are going to be fought out in this case
3 and are being fought out in relevant IPRs.

4 So the specification is a lot of help here. Fractus'
5 counsel already showed you basically all that the specification
6 has to say about 4G. But one thing the specification does tell
7 us is that it's not using 4G in some sort of plain meaning
8 understanding. As of today, it's using it in a relatively
9 idiosyncratic way. This passage from Column 25 talks about
10 what 4G encompasses and it gives some nonlimiting examples, but
11 a lot of the examples it gives are not 4G. Of the stuff that's
12 listed here, only WiMAX is clearly a 4G standard.

13 Many of the other examples given here are either 3G or
14 3.5G or they're things that just aren't any G at all, like
15 Wi-Fi, which is its own separate standard governed by 802-11 of
16 the IEEE working group. Again, it says "other high speed
17 wireless standards."

18 Is -- what does that include. Could that include the
19 pony express? Not sure.

20 So a person of ordinary skill, looking at the
21 specification, isn't going to -- isn't given much information
22 about what 4G means in the context of this patent.

23 I'd also like to talk briefly about the bands portion.
24 There's some example bands, large frequency bands, given here.
25 They're not tied to any particular 4G service. Fractus showed

1 you some slides from Geotab's IPRs that talk about various
2 bands of LTE in addition to bands 12 to 14.

3 The reason that bands 12 to 14 are of particular interest
4 and the reason we proposed them is that those particular ones
5 were not, as of the date these patents were filed in 2006,
6 under consideration for use by LTE. LTE bands 12 to 14 are
7 from 698 to 806 megahertz. At that point that was being used
8 to transmit television signals. No person of ordinary skill in
9 2006 would have understood 4G to encompass that because it was
10 occupied by something else. You can see that the example
11 larger bands listed here do not cover that.

12 If we could bring up the portion of Exhibit K that was
13 looked at earlier that Fractus' attorneys pointed you to.

14 Thank you very much.

15 So they talked about, under consideration, and this is a
16 document from around that point. You will notice in various --
17 leaving aside the question about candidate bands consideration
18 versus proposed, you'll notice that LTE bands 12 to 14, which
19 are from 698 to 806 megahertz, are not within this set of stuff
20 that's listed as being under consideration at that point.

21 And there's a reason why not. Because it was occupied by
22 television at that point.

23 Thank you very much. Let's return to Geotab's slides.

24 So the idea is that the jury -- and we agree with the
25 Court that the jury should get some instruction as to what 4G

1 means to help and evaluate infringement and invalidity, and
2 Fractus appears to agree that it includes LTE bands 12 to 14.
3 If Fractus wishes to agree that the language of the Court's
4 tentative order, including but not limited to long-term
5 evolution as they proposed, if the -- if that nonlimiting
6 example includes all of the LTE bands, I don't think Geotab has
7 an issue with that either.

8 But one last thing I'd like to end on here, focus on the
9 Court's tentative proposal here. This is obviously language
10 that neither side addressed in their briefing and we just got
11 this morning.

12 There's some areas of this where we are not sure what the
13 implications are. The standards that have been adopted, that
14 is relatively clear in that nothing was adopted for 4G as of
15 2006. That didn't happen until late in 2008. The language "or
16 proposed," "or under consideration," we're not sure what that
17 means either, whether there's any difference between those two,
18 or how concrete something needed to be to be proposed in 2006.

19 There's also some real dispute between the parties as to
20 what the effective filing date is. Fractus believes it's in
21 2006. Geotab believes it's later in 2014, based upon what was
22 known at the time.

23 So we'd ask Your Honor, if you wish, any supplemental
24 briefing on that issue under this tentative construction, we'd
25 be open to that. We don't want to delay things but we would be

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1 happy to address these uncertainties in writing to the extent
2 Your Honor would find that useful.

3 THE COURT: The effective filing date is something
4 that will be known by the time this would go to a jury.

5 MR. KEETON: I believe it would be, Your Honor, for
6 the following reason. The effective filing date relates to
7 both a written description invalidity position that is in
8 Geotab's invalidity contentions and that Geotab expects to be
9 addressed by the expert reports and quite possibly by a summary
10 judgment motion.

11 This Court's resolution of that summary judgment motion
12 would, I expect, resolve the effective filing date issue, which
13 also relates to a separate ground for invalidity on these
14 claims, which is a priority break attack: That if the
15 effective filing date is only 2014, then an intervening
16 publication within the same patent's prosecution history
17 anticipates all of the claims.

18 So we believe both of those issues will be addressed by
19 the experts, will be brought to this Court on summary judgment,
20 and I believe the Court's resolution of the -- those summary
21 judgment issues would, I expect, necessarily resolve the
22 question of what the effective filing date is on these claims.

23 THE COURT: All right.

24 MR. KEETON: That's all I have, Your Honor, unless
25 you have further questions.

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1 THE COURT: Thank you, Mr. Keeton.

2 MR. GREENFELD: Can I have a few comments?

3 If we go page 11 in Exhibit K. Sorry. Page 14. That's
4 it. Okay. So, I'm sorry.

5 This is one of the exhibits. This is a table in the back
6 of Exhibit K, talks about some of the candidate bands. One of
7 the candidate bands is 470 to 960 megahertz. This is a band
8 that counsel for Geotab was saying was not under consideration
9 at this time. So it clearly, clearly was. In other words --
10 and you look at the first -- first lines of this column on the
11 left it says, Portions of this frequency band contain
12 allocations in fixed and mobile services.

13 So it was definitely -- again, this is a
14 telecommunications document, and it's certainly talking about
15 mobile -- mobile services that would be used in those bands.
16 Again, this would encompass LTE, and it says, as you go three
17 paragraphs down, it says, In the United States of America the
18 470 to 512 megahertz band is allocated on a primary basis to
19 broadcast mobile. And then it has another band after that for
20 broadcasting, and, again, so some of this is mobile and some of
21 this is broadcasting, but it was definitely -- it was actually
22 being transitioned over from broadcasting to -- to cellular.

23 And so it wasn't called LTE then but it was certainly
24 contemplated as being a candidate band for cellular and for the
25 next generation. And so that would be why we would want to put

1 "under consideration" as part of the construction.

2 The other sort of confusing issue is is their expert in
3 this case is -- has argued, in fact, that it's somewhat
4 contrary to what counsel for Geotab is arguing today is, in
5 fact, saying that LTE was not actually a part of -- part of
6 the, you know, the standard or even under consideration for the
7 standard. So that, at least, is more evidence that their
8 construction or their proposed construction has some issues.

9 And we'll go back to the patent, to the description of
10 the services within the patent.

11 I guess it's slide 29.

12 And so we showed this before, and counsel for Geotab
13 showed this also. This is written in fairly broad language
14 with respect to the types of services that were contemplated at
15 the time of the filing of the patent application.

16 THE COURT: And so what does this argue for in terms
17 of a construction of "4G communication standard"?

18 MR. GREENFELD: So this would, first of all, it
19 counsels for, again, a broad construction but also one where
20 the -- where bands that were under consideration because,
21 again, there was no approved standard at the time -- they were
22 considering these advanced high-speed services. If you look on
23 the right side, high-speed wireless standards, for example, it
24 says.

25 So they were -- you know, there was an understanding

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1 within the telecommunications community as to what these types
2 of services could be and what bands they would be -- they would
3 be operating in.

4 THE COURT: All right.

5 MR. GREENFELD: Thank you.

6 THE COURT: Thank you, Mr. Greenfeld.

7 Mr. Keeton, anything further on this term?

8 MR. KEETON: I think only briefly, Your Honor, and we
9 don't need to bring it back up. But the first thing that
10 Mr. Greenfield showed you was a page later on in that same
11 Exhibit K, and he pointed out various portions of bands.

12 The only point clarifications I would make there are
13 first, that he -- the band range that he was talking about was
14 significantly broader than the LTE bands 12 to 14, which are
15 698 to 806, and to the extent he was able to point to any
16 narrower ranges, there were subsets within there that don't
17 line up to the LTE bands later. And at least to the extent it
18 talked about specific overlap between there, it reinforced the
19 point that at least then this was for television, that at least
20 that portion of the range was allocated to television, not to
21 whatever 4G was going to be.

22 That's it, Your Honor.

23 THE COURT: All right.

24 MR. KEETON: Thank you.

25 THE COURT: Whatever construction we adopt will

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1 contemplate that there will be testimony from experts about
2 what falls within that construction, what was proposed,
3 et cetera.

4 Anyway, then let's move to the complexity -- oh, I'm
5 sorry. We still have the -- no. That's the last term, the
6 complexity factor.

7 MR. WANG: Good morning, Your Honor. Xiaoming Wang
8 on behalf of Fractus.

9 So, Your Honor, as you know, there are two distinct
10 issues with respect to complexity factor. There's the antenna
11 contour issue and the G2 grid issue. I'm happy to take them up
12 in whatever order Your Honor prefers, but I'd like to kind of
13 just set the scene with the legal standard that applies to both
14 issues.

15 So I think everyone agrees that the Ball Metal case
16 controls or at least it's a good summary of what Defendant's
17 burden is here. These are calculated perimeters, so
18 Defendant -- it's Defendant's burden to show all three of these
19 factors. They must show that different known methods exist for
20 calculating a claim parameter, that nothing in the record
21 suggests using one method in particular, and application of
22 different methods result in materially different outcomes.

23 Your Honor, again, I'm happy to start with either antenna
24 contour or the G2 grid, but because what we're actually
25 construing here is the term "complexity factor," I just want to

1 again, start by putting everything in context. So, you know,
2 we can discuss how many steps there are, you can group these
3 steps, or you can break them further apart; but I think
4 everyone agrees that you have to follow all of these in order
5 to calculate the complexity factor.

6 So you begin by identifying the antenna box and the
7 antenna rectangle. After you've identified the antenna
8 rectangle, as you will discuss, you have to identify an antenna
9 contour that's within the four corners of the antenna
10 rectangle. Once you've identified the antenna contour, you can
11 then overlay the measuring grids again on the antenna
12 rectangle, not the antenna contour itself.

13 You have to perfectly test, like, the G2 and the G3 grids
14 and then you count the number of cells within the antenna
15 rectangle. Finally, once you get those numbers, you plug them
16 in to the relevant formulas, you get the complexity factors F21
17 and F32.

18 And with that overview, Your Honor, let me know which
19 issue you'd like to tackle first.

20 THE COURT: Your choice, Mr. Wang.

21 MR. WANG: Okay. Well, let's start with antenna
22 contour.

23 Your Honor may recall this is not the first time that
24 you're construing this term. This came up in Fractus versus
25 ADT.

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1 Matt, can you pull up Slide 60, please.

2 Your Honor, you issued a Markman order describing this
3 issue at length. Our position in this case follows your
4 guidance in -- from that order. So as you will recall, in ADT,
5 Fractus took the position that one could determine the antenna
6 contour by using either the orthogonal projection method or the
7 unfolding method.

8 So I want to begin by noting that I don't think
9 Your Honor actually decided this issue in the Markman order.
10 You said that, given that Fractus does not dispute there are
11 multiple methods for arriving at the antenna contour, the first
12 prong of Ball Metal's test is satisfied.

13 You then went on and pointed out that, quote, The
14 unfolding approach is not described with respect to any figure
15 nor clearly taught.

16 Same thing here. Your Honor pointed out that ADT pointed
17 to Figure 4, which Defendants here rely on too, to kind of
18 suggest that there's an unfolding method. Your Honor simply
19 noted that it shows a form -- how to form the antenna
20 element 300 at Figure 3. It's not really describing an
21 unfolding method, and, again, Your Honor said that no figure
22 has really described the unfolding approach.

23 Your Honor may also recall in ADT there was some argument
24 that because the claims themselves used the words "perimeters"
25 or "entire perimeters of entire contour," we thought maybe that

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1 the claims themselves supported something other than the
2 orthogonal projection method.

3 Your Honor said that claim language was not so clear. It
4 is not unreasonable, for example, to interpret the relevant
5 claim language to mean contours derived, at least partially
6 from the perimeter. I will note that Defendant's expert,
7 Dr. Durgin, agrees with that. That that is no longer in
8 dispute here either.

9 And, finally, I think, Your Honor made us reconsider the
10 interplay between the antenna contour, the antenna rectangle,
11 and the measuring grids. Your Honor noted, for example, the
12 cell side of the grids is chosen based on the antenna
13 rectangle, not the profile of the unfolded antenna. Your Honor
14 then pointed out that there's no way in which an unfolded
15 antenna would not exceed the boundaries of the antenna
16 rectangle. Given that the antenna rectangle is based on the
17 orthogonal projection of the antenna, which I will explain in a
18 bit, contradicts the instructions on overlaying grids and
19 capping cells within the antenna rectangle, not the antenna
20 contour.

21 So that's a lot that Your Honor said, and we followed
22 your guidance pretty shortly thereafter. In the Fractus versus
23 ADT case itself, after studying your Markman order, we realized
24 that our position was incorrect. We dropped all our claims,
25 including the term complexity factor in ADT, and with respect

1 to this specific case, we have always asserted that there's
2 only one method to identify the antenna contour and that's the
3 orthogonal projection method.

4 So I think my friends on the other side will come up and
5 say, well, your position in ADT is inconsistent with your
6 position here today, namely, that there's only one method to
7 calculate the antenna contour. And I think that is true, but
8 our position is well-aligned with Your Honor's ADT Markman
9 order.

10 I don't know if there's a dispute about whether or not
11 Fractus is bound, legally bound, by its earlier position. I
12 did not see any estoppel arguments in their responsive brief.
13 I think those are, therefore, waived. I think they didn't
14 raise them for good reason because they don't apply here. The
15 issue wasn't really in dispute in the ADT case. I don't
16 understand Your Honor to have accepted our position. We
17 dropped the claims, including complexity factor, and, of
18 course, there was no final judgment because parties reached
19 settlement.

20 THE COURT: How is it that you would conclude that
21 the Court didn't accept your position on whether there were
22 multiple methods for determining the perimeter?

23 MR. WANG: Your Honor, I think because Your Honor
24 simply noted that the issue was not in dispute. But,
25 Your Honor, my reading of it is that Your Honor did not

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1 actually conclusively determine there were two different
2 methods that were taught in the patent. For example,
3 Your Honor noted that the unfolding is not really taught
4 anywhere in the patent. And for all the kind of language that
5 I just marched through, Your Honor seemed to indicate
6 significant skepticism to the position that there is the
7 unfolding method taught in the specification.

8 THE COURT: Doesn't that simply reinforce that the
9 Court relied upon your position?

10 MR. WANG: So I don't think -- so, Your Honor, if
11 you're talking about kind of ideas of judicial estoppel, I'm
12 not sure. Because I don't think it was dispositive to how it
13 actually came out, as Factor 2 was the dispositive factor in
14 ADT.

15 The other point I'll note is, again, I don't think it was
16 in dispute. I think there's case law that we've cited
17 suggesting that the issue has to be fully litigated.

18 THE COURT: Well, the reason it wasn't in dispute is
19 because you admitted it.

20 MR. WANG: Yes, Your Honor. And we concede that.
21 But I think after reading Your Honor's ADT Markman order, we
22 understood that we were wrong. I think there are reasonable
23 reasons why we thought we might be right after reading
24 Your Honor's Markman order, I think there are many reasons that
25 the patent just does not teach the unfolding method. And I'm

1 happy to walk you through those arguments and why we realized
2 that our position was not correct.

3 THE COURT: My concern is that I have enormous
4 respect for your firm and the people that you have working on
5 this, and it's very hard for me to believe that it was just a
6 failure to sufficiently consider the issue that led you to
7 agree that -- with the defendant's position that there was this
8 alternative unfolding method as a way to determine the
9 perimeter. And it smacks a little bit of gamesmanship to say
10 that it was advantageous in one case to go one way but now, in
11 another case, to go another way.

12 MR. WANG: Your Honor, so I understand the concern,
13 and I don't think our position is that we didn't fully kind of
14 look into the issue. I think the other complicating factor in
15 the ADT case is that there were certain claims that talked
16 about antenna contour outside of the context of calculating the
17 complexity factor.

18 So, for example, in the '103 patent, Claim 12, which
19 Fractus continued to assert. So that patent, if you go to
20 Column 43, it talks about the antenna elements defined as a
21 first antenna contour comprising at least 35 segments, and
22 there are other passages that discuss the antenna contour, not
23 with respect to the complexity factor.

24 And so we were not really focused on this antenna
25 rectangle issue, which I think is dispositive here and really

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1 pointed out to us why our position in the previous case was
2 wrong. And I'm happy to walk you through those, Your Honor, if
3 you would like. I'm also happy to answer further questions on
4 the different positions.

5 THE COURT: I think it would be wise for you to walk
6 through your analysis.

7 MR. WANG: Matt, can you pull up slide 70?

8 So, Your Honor, this is what we realized based on
9 Your Honor's ADT Markman order. Kind of puts the nail in the
10 coffin on the so-called unfolding method, and let me walk you
11 through there. There are things that specifically relate to
12 the antenna rectangle overlaying the G2 grid and calculating
13 the -- counting the number of cells within those grids that
14 makes clear to us now that the unfolding method contradicts
15 those; right? So I think at a high level we have to read the
16 claim terms in a manner that renders the patent internally
17 consistent and the unfolding method, sadly, doesn't do that.

18 So, first of all, as we noted in our brief, I think the
19 antenna contour must be completely inside the antenna
20 rectangle. If you look at this language it says, The antenna
21 contour needs to make efficient use of the area of the antenna
22 rectangle in order to obtain enough geometric complexity to
23 make the resulting structure of the antenna system suitable.
24 So if the geometric complexity can reside outside of the area,
25 i.e., if you unfolded the antenna, which, again, Your Honor

1 said there's no way that an unfolded antenna could reside
2 within the four corners of the antenna rectangle. This section
3 would not make a lot of sense because you would not be able to
4 identify the entire geometric complexity of the antenna contour
5 within just the four corners of the antenna rectangle.

6 Again, Your Honor pointed out this in Footnote 6 in
7 Your Honor's ADT Markman order. All right. This says the
8 grids are adapted to the antenna rectangle. Your Honor pointed
9 out that it is the antenna rectangle, not the antenna contour
10 that's at issue. Critically, again, at the bottom it says, The
11 grids provide a, quote, sufficient number of cells within the
12 antenna rectangle to fully capture the geometric features of
13 the antenna contour.

14 So, again, if the antenna contour could be outside of the
15 antenna rectangle, the cells within just the antenna rectangle
16 could not fully capture the contour's geometric features.

17 So this is similar. It says, The antenna rectangle is
18 tessellated perfectly with 9 by $(2n+1)$ cells. You're perfectly
19 tessellating the antenna rectangle, not the unfolded antenna,
20 which, again, would exceed the boundaries of the antenna
21 rectangle.

22 And Your Honor noted this again; but, similarly, the cell
23 sizes are based on the antenna rectangle, not the profile of
24 the unfolded antenna.

25 I think this is really the nail in the coffin for the

1 unfolding method; right? It says that when you're counting the
2 number of cells, you're counting for the G2 grid, you're
3 counting the cells completely inside the antenna rectangle and
4 the same goes for the G3 grid because, as Your Honor will
5 recall, the G2 and the G3 grids must be perfectly tessellated
6 with those cells.

7 Again, I'm just pointing out what Your Honor pointed out
8 to us, which is that for the -- there's -- with the unfolding
9 method, there's no way that would not exceed the boundaries of
10 the antenna rectangle.

11 And that's a problem. And I think putting those
12 theoretical kind of discussions in the specification to brass
13 tacks, I just want to walk through Defendant's expert,
14 Dr. Durgin's, so-called unfolding analysis example and just
15 walk you through briefly all of the problems and all of the
16 contradictions it has with the patent specification.

17 So, first of all, I just note, I think everyone agrees,
18 and Your Honor pointed this out too, that you have to start by
19 identifying the antenna box and the antenna rectangle.
20 Dr. Durgin didn't do that, so I just mapped it out for him.
21 Everything in orange is our modification. So this is just the
22 orthogonal projection of the antenna rectangle.

23 So once Dr. Durgin unfolds out the antenna contour, there
24 are specific issues. First of all, again, he did not determine
25 the antenna rectangle, so I've superimposed it here in the

1 orange dotted lines. I'll note that, as you'll recall, the
2 definition of the antenna contour requires finding the
3 perimeter of the antenna elements placed in the antenna
4 rectangle, which is just the planar portions. Dr. Durgin
5 didn't do that.

6 And, again, he failed to diagram an antenna contour
7 contained within the antenna rectangle. But where the rubber
8 really meets the road, and you see kind of the plethora of
9 problems with Dr. Durgin's example and, therefore, the
10 unfolding method, is when you start superimposing the G2 grid
11 and you start counting the cells.

12 So I noted a number of issues before; but, here, you'll
13 see that, first of all, Dr. Durgin does not perfectly
14 tessellate the antenna rectangle with the G2 grid, he's
15 tessellating the unfolded antenna contour -- right? -- and
16 then, as a result, he's failed to select cell sizes based on
17 the antenna rectangle rather than the unfolded antenna.
18 Your Honor specifically noted that's not permissible in your
19 ADT Markman order.

20 As a result, Dr. Durgin failed to tessellate the antenna
21 rectangle with nine columns, which is an issue we'll discuss
22 with respect to the G2 grid. And, finally, again, this is
23 really the nail in the coffin. He fails to count the cells
24 inside the antenna rectangle with respect to the G2 grid,
25 which, again, is specifically required under the specification.

1 So for all those reasons, I think at this point the
2 unfolding method is dead in the water, so to speak. And,
3 again, I think this is the dispositive issue. We've had some
4 back-and-forth on how to, you know, linguistically and
5 grammatically interpret, cut up a couple of lines about the
6 definition of "antenna contour." I'm happy to go through
7 those, but I think this is the dispositive issue.

8 And, again, Your Honor, because there were discussions
9 about claims with the term "antenna contour" kind of outside of
10 this "complexity factor" context, we weren't really attuned to
11 the specific issue, again, because when antenna contour is not
12 being determined in the context of a complexity factor, you
13 don't need to superimpose the grid, you don't need to count
14 cells, which I think is the critical issue with the unfolding
15 method.

16 And, Your Honor, can I just go back again to whether or
17 not we really benefitted from this.

18 I think, Your Honor, that, again, we don't think that we
19 relied on this and we acknowledge that we're mistaken. I think
20 there's also case law with respect to judicial estoppel that
21 says, you know, there needs to be a final judgment. And I will
22 note that I don't think that we benefitted any from this. We
23 brought this -- again, I noted the reasons why we thought this
24 was a plausible reading of the specification. Your Honor's ADT
25 Markman order told us that we were wrong. We took that

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1 seriously into consideration.

2 Instead of continuing further with it, we immediately
3 dropped those issues. And now, based on Your Honor's guidance
4 in the ADT Markman order, we think we have now come to the
5 correct position. And we've been consistent with that position
6 with respect to Geotab all along.

7 THE COURT: All right.

8 MR. WANG: Your Honor, would you like to move on to
9 the G2 issue or would you like Defendants to have a chance to
10 respond to the antenna contour issue?

11 THE COURT: Go ahead and address the G2 issue as
12 well.

13 MR. WANG: Matt, can you pull up slide 82?

14 So, Your Honor, again, this is not your first rodeo with
15 respect to this issue. I acknowledge that Your Honor said that
16 with respect to this, that Defendant satisfied Factor 1. You
17 did not read the patent specification to teach specifically
18 that the grid -- G2 grid has to have nine columns. I'd like to
19 take a shot at changing your mind but I think if we're unable
20 to change your mind we still win on Factor 2 because there's
21 substantial guidance in the patent specification, in the
22 intrinsic evidence that says a person skilled in the art ought
23 to use nine columns.

24 So, Your Honor, Defendants rely kind of on this language
25 that says the antenna rectangle is perfectly tessellated with

1 an odd number of columns and odd number of rows. That's
2 certainly in the patent and I think it should be read in
3 context. So I've copy and pasted for Your Honor here kind of
4 the entire section teaching how to determine the G2 grid within
5 the specification. This is Column 17 in the '677 patent. So
6 this is really kind of a thought experiment. It's really
7 thinking through the issue. It starts by saying, yes. We want
8 a grid that has an odd number of columns and an odd number of
9 rows. It then goes on to Paragraph 7 to say, wait a minute.
10 That doesn't solve the issue because there are certain problems
11 with that. If you have an excessive number of columns, there
12 are certain issues. And if the antenna is tessellated with an
13 insufficient number of columns there are other issues.

14 So what do we do? We think that nine is the advantageous
15 compromise and I understand that Defendants are pointing to
16 this language about that being about preferred sizes of an
17 MFWD, which is about preferred embodiments. That may be true
18 with respect to that sentence but if you go down a sentence
19 down, it says, in conclusion, therefore, a cell with w_2 is
20 selected to be equal to a ninth of the length of the longer
21 side of the antenna rectangle. So it starts by saying, here's
22 the issue and here's the solution we're going to give you, not
23 with respect to just preferred embodiments but as a matter of
24 creating the G2 grid, we're going to use nine columns. If you
25 go on to the next paragraph when it's talking about the cell

1 height, it's similar. It says basically that the number of
2 rows or the cell height has to be capped at nine. And as I'll
3 explain shortly, the reason it's capped at nine is because the
4 number of columns which corresponds to the longer length of the
5 antenna rectangle must be nine. So that's why it's capped at
6 nine. It's not capped at seven or 11 or any other number.

7 And if that were not enough, at the conclusion of
8 everything, of the section teaching how to determine or
9 construct the G2 grid it says, thus, the antenna rectangle is
10 tessellated perfectly with 9 by $(2n+1)$ cells of grid G2.

11 Your Honor, let me give you four other reasons why the
12 specification teaches that it must be nine columns.

13 First, as I just mentioned, the instructions on the
14 number of G2 rows shows that the G2 grid must have nine
15 columns. So, again, it caps the number of rows at nine and the
16 reason for that is quite simple because, you know, the shortest
17 side can't exceed the longer side and since the longer side is
18 capped at nine, the shorter side has to be capped at nine which
19 makes it a perfect square or substantially square.

20 The other reason is if you look at the instructions,
21 specific instructions on the G3 columns, again, at the bottom
22 it says, so remember the G3 grid is just you're doubling the
23 number of columns and rows from the G2 grid. You start with
24 the G2 grid then you double the number of columns and rows and
25 it says, therefore, the G3 grid is -- has 18 by $4n$ plus 2 cells

1 of grid G3 and it's required to tessellate completely. So the
2 reason it's 18 is because you're doubling the number of columns
3 from G2, which must be nine. The same thing goes with the G1
4 grid with respect to the columns. It says, the number of
5 columns has got to be five when G2 includes nine columns. And,
6 again, it's because you're cutting the number in half because
7 nine is an odd number and you've got to add another column on
8 to ten, you divide it by two. Comes out to five.

9 And, lastly as we pointed out, every single figure in the
10 specification says nine columns. I can walk you through these
11 but we cited them and it's pretty clear that every single one
12 of them shows nine columns.

13 And finally, Your Honor, as I mentioned earlier, if
14 Your Honor is disinclined to change your mind about Factor 1, I
15 think we still win on Factor 2 for all the reasons we just
16 discussed. There's substantial guidance in the specification
17 itself that tells a person skilled in the art pretty clearly
18 you ought to create a G2 grid with nine columns.

19 And both with respect to this issue and the antenna
20 contour issue, Dr. -- Defendants kind of waiver on Dr. Durgin's
21 expert report to say they've met their burden. But if you read
22 what he actually says, he doesn't address any of these issues
23 or why a person skilled in the art, despite all of this clear
24 guidance, would say, I still think I can create a grid that's
25 anything other than nine columns.

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1 Thank you, Your Honor.

2 THE COURT: Thank you, Mr. Wang.

3 We will take the morning recess before I hear from
4 Defendants on this term. 15 minutes.

5 (Recess taken from 10:28 a.m. to 10:47 a.m.)

6 THE COURT: Thank you, please be seated. Except for
7 you, Mr. Keeton.

8 MR. KEETON: Thank you, Your Honor.

9 All right. Welcome back, Your Honor.

10 So let me address the last disputed term, "complexity
11 factor," for Geotab. The positions are Geotab believes it's
12 indefinite; Fractus says it's not, as you heard this morning.

13 Now, this Court came close to finding this term
14 indefinite in the prior ADT case. As the Court is aware,
15 "complexity factor" appears in all the independent claims in
16 this family. The parties treat the '677 patent as
17 representative on this issue. That claim is shown here.

18 In all the claims there are two different complexity
19 factors required: F21 and F32. And the claims then give the
20 numbers of the two -- numbers the two complexity factors need
21 to be above or below, depending on the claim.

22 Now, Fractus' brief gives a summary of the five steps the
23 specification lays out of how to work out these numbers. The
24 dispute between the parties is on the first two steps. The
25 first, defining the antenna contour; and the second,

1 determining the number of columns and rows in the G2 grid.

2 For each of these two steps, the specification describes
3 at least two different ways to determine them, and those ways
4 lead to different results. But the specification provides no
5 guidance on which method to use. As a result, each of these
6 two steps provides an independent basis for finding these
7 claims indefinite.

8 It's also important to note these two steps are
9 independent and the arguments don't relate to each other. So
10 Geotab only needs to win on one of these two arguments for this
11 claim term to be found indefinite.

12 As this Court well knows, in the ADT case you relied on
13 the Ball Metal case as setting out the three prongs of this
14 test. That's what everyone is applying here.

15 THE COURT: And I will say that I really think the
16 Teva case is the touchstone for this, but the parties in the
17 ADT case reciting the Ball Metal case, which seems to me to be
18 a good statement of it. But I consider the most authoritative
19 case on that to be the Teva versus Sandoz case.

20 MR. KEETON: I agree with that, Your Honor. That is
21 mentioned in the parties' briefing here. They also focused on
22 Ball Metal, as did Defendant's experts because of its use in
23 the prior case, but we believe that Teva is the touchstone.
24 And although it doesn't articulate the test with quite the same
25 three prongs, our belief is that it is the same test and leads

1 to the same outcome. Certainly nobody's argued that the
2 different cases lead to different outcomes on this issue.

3 So for each of the two steps, first two steps, the
4 antenna contour issue and the grid G2 issue, the Court found
5 the first and third prongs in the ADT case were met and it came
6 close to invalidating the term.

7 This is the Court's -- some excerpts from the Court's
8 analysis on the antenna contour step. There are similar
9 passages on the grid G2 step.

10 So I'm happy to, as with Fractus -- as Fractus' attorney,
11 earlier today, deal with them in either order. I can start
12 with antenna contour as Fractus addressed earlier, if the Court
13 would like.

14 THE COURT: Why don't you start with the antenna
15 contour issue.

16 MR. KEETON: Sure. So this is the first issue. The
17 specification describes the process and that there are multiple
18 ways to determine the contour. So this goes to the first Ball
19 Metal prong. Our brief calls this the contour determination
20 text for easy reference.

21 So the entire dispute here is whether this text, this
22 language, describes multiple ways of determining the contour or
23 just one.

24 Now, despite the express language of the last portion
25 here, which is separated by three different conjunctions,

1 Fractus argues that this language only describes a single
2 method for determining the antenna contour, what it calls the
3 orthogonal projection method. But the claim language dictates
4 otherwise, and it includes also at least what Fractus called
5 the unfolding method based on the last part of the sentence
6 after the final comma, the part that reads, or perimeters or
7 parts of antenna elements that are placed in the antenna box
8 but not in the antenna rectangle.

9 A person of ordinary skill in the art would have
10 understood that at the time. And that is what this Court
11 expressly found in the ADT case.

12 Finally, the claims say nothing about which method to use
13 to measure the contour -- the antenna contour.

14 Now, Fractus itself first put forth that unfolding method
15 in the ADT case in line with what one of ordinary skill would
16 have understood, but it's now reversed that position and saying
17 the method that it offered in that case does not exist.

18 So let's have a little look at what Fractus did in the
19 ADT case. They broke up this text this way, as shown with
20 numerals 1, 2a and 2b, what they put in here, and they
21 described their unfolding method as being connected to the 2b
22 language, the last part of the sentence.

23 So the segments that make up the perimeters of the
24 antenna elements or the parts thereof that are described in 2b
25 that are not in the antenna rectangle can be visualized as

1 being unfolded. And you can see this in Figures 4 and 3 of the
2 patent which describes how such a folded antenna is made.

3 Here we have a portion of Figure 4 at the bottom that
4 uses a similar visualization. It starts with a flat plate and
5 the plate gets stamped out, and as part way through this
6 process, prior to folding, you have an example antenna that is
7 entirely in one plane. And that's what the text that
8 accompanies Figure 4 describes. It describes how some portions
9 of that antenna are then bent or folded to reach the final
10 antenna shape, which is then shown in Figure 3. [The folded
11 portions are items 305, that has been folded down, and 306,
12 which has actually been folded a couple of different times.

13 So the text explains that when this -- before this
14 antenna had been folded, another way of thinking of it as being
15 unfolded, that it extended beyond the antenna rectangle and
16 that matches up with that 2b language that Fractus had pointed
17 out earlier.

18 And then the bottom figure -- the bottom figure shows the
19 other method that's described in that passage: The orthogonal
20 projection method where the folded antenna elements are
21 orthogonally projected onto a plane as shown in red and blue
22 lines there. This was described in the prior case as sort of
23 putting a shadow puppet up onto the wall, and I think that's a
24 good analogy for this method.

25 So, again, in the prior case, using Fractus' own labeling

1 from that case, 2a and 2b provide two different methods of
2 determining the antenna contour. They're separated by an "or"
3 conjunction and a comma between them.

4 And that's how Fractus read things in the prior case as
5 well.

6 Here we have an example from its infringement contentions
7 against ADT where it asserted one of the same patents and
8 claims that it asserts against Geotab here: Claim 1 of the
9 '200 patent. You can see that Fractus made its infringement
10 accusation by unfolding the antenna and assessing the contour
11 based on that. The antenna is folded, you can see the antenna
12 box on the right there, then over on the left they have
13 unfolded it and flattened it out and measured the contour.
14 Based on that, as one of ordinary skill, would have understood
15 using the 2b method.

16 You can also see that Fractus doing this unfolding
17 extended it past the antenna rectangle, which is shown in green
18 on the right. And contrary to what Fractus now argues in its
19 reply here, and what you heard earlier here today, and it had
20 to do that. It had to do that in order to make out its
21 infringement case.

22 The folded antenna shown here, if you simply orthogonally
23 project it, you only get a very small portion, which is shown
24 in the bottom left there. It's basically just a rectangle with
25 a single cut out of it.

1 That is clearly not complex enough to meet the complexity
2 factor requirements that are claimed, including in Claim 1 of
3 the '200 patent, that they asserted against this antenna.

4 Now, you've heard a lot from Fractus earlier today about
5 the antenna rectangle not allowing the unfolding method; but,
6 to us, Your Honor, that sounds like an admission that the
7 claims are not enabled, at least the 2b is not enabled, not
8 that the patent itself bars what Fractus earlier argued was the
9 approach.

10 And they did this a lot of times. This is another slide,
11 this time from Fractus' infringement contentions against ADT.
12 And, again, here, Fractus unfolds the antenna past the antenna
13 rectangle contrary to what it said in its reply and what it
14 told you here earlier today. And, again, you can see they had
15 to do that to make out an infringement case. That the folded
16 antenna is what you see on the right there with the antenna
17 rectangle shown in green. You can see that, if you
18 orthogonally project the folded antenna, the shape is just that
19 rectangle. There's no complexity to it at all.

20 In fact, when you're dealing with these kinds of 3D
21 antennas that are folded, the whole point of the complexity
22 factor is lost. The performance of the antenna is tied to
23 the -- among other things, is tied to the various complications
24 of the contour. And if you orthogonally project this type of
25 antenna, you're not capturing any of the information about the

1 complexity of the contour, which is shown once unfolded on the
2 left here.

3 Fractus took a lot of different approaches on unfolding.
4 This is a path -- another portion of a demonstrative from the
5 ADT case that, again, looks at the infringement contentions.
6 Here, you can see a somewhat complex antenna on the left.
7 There, that goes across a couple of different dimensions.
8 There are at least three different ways ADT pointed out in the
9 earlier case that you can unfold them and sort of either
10 connect them together or look at them separately to try to get
11 to infringement Your Honor noted is demonstratives as being
12 convincing in the prior order.

13 And they do it in a whole bunch of different scenarios.
14 This is one from ADT's Exhibit K from the prior Markman
15 hearing. Again, this shows an unfolded antenna. The folded
16 passages are just the portions that are between the pink lines
17 there.

18 So 2a or 2b provide two different methods of determining
19 the antenna contour, and that's exactly what the Court found in
20 the prior case. And Fractus never disputed it there, as the
21 Court noted.

22 So why is this case different. well, realizing that
23 their own position in the ADT case almost led to this Court
24 finding the claims indefinite, Fractus now argues that its own
25 prior position violates the specification's teachings -- that's

1 in the reply brief at 5 -- and now it tries to turn the Court's
2 order on its head by taking a different stance.

3 It, instead, renumbers the portions of the contour
4 determination text as shown, and it argues that the two
5 highlighted portions of what it now calls 3, that had earlier
6 been 2, those two highlighted portions apply to both 3a and 3b.
7 So, according to Fractus, this revised interpretation indicates
8 that there's only one method of looking at antenna contour:
9 the orthogonal projection method.

10 And Fractus describes the implications of that new
11 interpretation there on this page of its opening brief.

12 So an important thing to note here is that it now
13 believes the orthogonal projection portion of the text, which
14 we saw here, now applies to both 3a and 3b, and to that part
15 that's highlighted on the bottom as well.

16 And Fractus clarified that in its reply brief.

17 But there's a number of problems with this new
18 interpretation. It's wrong, and it renders, among other
19 things -- among other problems with it, it renders 3a and 3b
20 basically redundant of each other.

21 So consider that 3a and 3b, the only difference in that
22 language is the words "or parts of." 3a reads "perimeters of
23 antenna elements," and then 3b reads, "perimeters of or parts
24 of antenna elements."

25 why would you include 3a at all if 3b already covers

1 everything that's in 3a. It renders 3a superfluous. That's
2 contrary to the usual understanding that words in a path are
3 there for a reason and are presumed to have some meaning.

4 It also ignores the comma before the final "or." If 3a
5 and 3b were simply two alternative versions of 3, when you're
6 listing two alternative versions, you don't put a comma between
7 them. You already have the word "or" there; that conjunction
8 is to tell you the difference.

9 Instead, you put commas when you have three or more
10 alternatives. The Oxford comma. That's what Fractus did in
11 the prior case, in its prior division, and that's what the text
12 supports. You can see there's -- it's a series of Oxford
13 commas that's dividing a list of three items: a, and b, and
14 then c. That's why there's a comma between all of those. This
15 is just grammar.

16 But even if Fractus' new splicing were correct, that
17 doesn't save the claims from indefiniteness.

18 So one is that their position here is flatly
19 contradictory to positions they took as to claims they asserted
20 here. Fractus argued it in the ADT case, that the orthogonal
21 projection method, while disclosed in the specification, cannot
22 be used for some claims. And several of those claims overlap
23 with the claims issued here.

24 If you look at the list of asserted claims here at the
25 top, at least '200 -- '200 patent, Claims 1, 6, and 11, and

1 '677, Claims 1, 5, 6, 12, and 16 have that entire perimeter
2 language that was the big focus of Fractus' argument on this
3 point at the prior hearing.

4 Despite Defendant's brief noting this issue, Fractus'
5 reply does not address this problem with its orthogonal
6 projection interpretation. You didn't hear anything about that
7 earlier today.

8 Now it argues the orthogonal projection is the sole
9 method that the patents teach for working out the antenna
10 contour but, in the prior hearing and the prior case, Fractus
11 argued that you cannot use that method for the same claims it's
12 now trying to apply to that method here.

13 Now, Fractus says that it's allowed to change its mind
14 based upon what it learned from your claim construction order
15 earlier, having lost on at least portions of this issue in the
16 ADT case.

17 But that only goes so far. On indefiniteness, Fractus'
18 changed position is irrelevant to what a person of ordinary
19 skill would have understood to be the scope of the claim.
20 Fractus argued in the prior case that these claims require
21 unfolding and are orthogonal projection. Now, to save those
22 claims, it's arguing that those same claims require orthogonal
23 projection and bar unfolding.

24 Fractus cannot have it both ways. And this just goes to
25 show what one of ordinary skill would have understood the

1 patents in the specification to teach at the time.

2 Fractus also told you earlier today that it didn't get
3 any benefit from its position in the prior case because it
4 dropped the patents that involved this relevant language, but
5 it did get a benefit. It let Fractus narrow its case down to
6 the parts of the dispute on which it had a better argument.
7 And as we discussed in our briefing, it drove settlement. It
8 was an important part of Fractus' case earlier.

9 So the position that they got no benefit from it we think
10 is not right.

11 So turning to another problem with Fractus' new position,
12 it also ignores the -- that the "or" between 3a and 3b renders
13 its own reading indefinite. Fractus admitted it in its opening
14 brief that 3b antennas can have one or both types of antenna
15 elements based on its new interpretation.

16 But there really isn't -- there is an "or" between 3a and
17 3b. Given, for a 3D antenna system, that Fractus admits may
18 have both types of elements, how does one of ordinary skill
19 understand which of 3a or 3b to apply: the perimeters of
20 antennas or the perimeters or parts of antenna elements.

21 Fractus also fails to account for another conjunction,
22 the "or" in front of what it now labels as 3. This is before
23 you get to the words "orthogonal projection." So the
24 conjunction there is not "and." The conjunction there is
25 "and/or." So meaning "and/or" or "or," either one, both. So

1 it's possible -- so there's yet another possible way to
2 determine antenna contour that does not use orthogonal
3 projection at all.

4 If you use the reading where "or" applies to the antenna
5 before you get to 3.

6 So, in other words, you could have a determination that
7 relies on only what Fractus now labels as 1 and 2 but does not
8 consider 3, 3a, or 3b. Fractus doesn't address any of that.
9 It just tries to write the word "or" out of that conjunction
10 entirely. It can't do that. That's not how one of ordinary
11 skill would have understood this passage.

12 So how does Fractus deal with that. In its reply brief,
13 for the first time, it argues that "and/or" actually means
14 "and," at least for a typical three-dimensional antenna. But
15 "and/or" doesn't mean "and," and you can't just write the
16 express language out of the specification.

17 So Fractus argues in its reply that if the 3D antenna has
18 both planar and non-planar parts, you read the "and/or" as
19 "and."

20 The specification doesn't say anything about that. It
21 doesn't teach that the existence of both types of parts on an
22 antenna means that you use "and"; Fractus just made that up.
23 Its expert doesn't talk about that. It's not in the record,
24 intrinsic or extrinsic.

25 And the real indefiniteness problem here on this point is

1 that it stems from the fact that the specification provides no
2 guidance about when to use which of the several possible
3 determinations.

4 Now, Fractus also pointed you earlier today to a
5 statement about the lack of clarity of the perimeter in
6 determining the antenna contour, which is what's shown here.
7 But that's taking the statement out of context.

8 What the Court is talking about here is -- relates to
9 indefiniteness. When is the contour partially derived from the
10 perimeter or when is it fully derived from the perimeter. The
11 specification doesn't tell you one way or the other.

12 So, as noted before, Fractus doesn't explain why it
13 pursued its prior position and a completely different position
14 now or how one of ordinary skill is supposed to understand the
15 fact that Fractus says the same text requires A and bars B in
16 the earlier case, but now says, oh, it requires B and bars A.
17 So prong one is met.

18 As Fractus, in its briefing, does not make any separate
19 arguments as to prongs 2 and 3, I will deal with them only very
20 briefly, Your Honor, because there really is no dispute here.
21 Prong 3 is met for exactly the same reasons that the Court
22 identified in the prior ADT case: That it is hard to see --
23 difficult to -- that it is hard to see how there could not be
24 materially different results for this on possible antennas; and
25 prong 2 is now met, as just discussed, because a person of

1 ordinary skill has no guidance as to which of those two methods
2 to choose from that portion of the specification.

3 The only reason the second prong was not met in the prior
4 case was that ADT did not come forward with expert evidence on
5 the point. Geotab has now come forward with expert evidence to
6 fill in that missing piece, and that evidence is unrebutted.
7 Plaintiff's expert doesn't deal with any of these prongs at
8 all.

9 Prior case, on the third prong, the Court used Figure 3
10 as an example and showed how, if you extend it to the maximum
11 possible antenna box, and then use the unfolding method, it
12 almost necessarily is going to lead to a different result. And
13 there are other examples within the patent.

14 For example, Figure 17b. If you add three flaps to it,
15 which was a conventional prior art modification of this type of
16 antenna, if you use the orthogonal projection method on the
17 left, the complexity factor comes out to 1.05, which is below
18 the claim threshold of 1.20; so outside the claims.

19 But if you use the unfolding method, as shown on the
20 right, that same complexity factor comes out at 1.295, or above
21 the claim threshold; so inside the claims.

22 Now, neither Fractus nor its expert disagree on any of
23 that math or the different results. What you heard this
24 morning was them, at least in my view, taking a new position
25 that wasn't in their briefing, that maybe they do disagree with

1 this, and there was a lot of argument about the antenna
2 rectangle. But that's really the only basis on that.

3 Their position is that if you use the antenna rectangle,
4 you get to ignore all of the flaps when you unfold it, and you
5 get to the same result. But that's wrong for the reasons that
6 we've already talked about earlier today, unless you adopt
7 their position on antenna rectangle, which Your Honor did not
8 do in the prior case, then they do not disagree with any of
9 this math or the numbers that come out from Defendant's expert,
10 which, again, is unrebutted.

11 And then lastly, on the antenna contour, Your Honor,
12 Fractus says in their briefing that they rebutted on the first
13 two prongs -- on prongs 2 and 3, but really it rises and falls
14 with the first prong. Their only argument is that there is
15 only one method and that, therefore, prongs 2 and 3 cannot be
16 met. They do not have any separate evidence on prongs 2 and 3.
17 Their expert doesn't talk about any prong.

18 So on prongs 2 and 3, including the only prong that was
19 missing at the prior decision, Geotab's evidence is unrebutted.

20 I could now turn to calculating the G2 grid, if
21 Your Honor would like, but I'm happy to pause if you have any
22 questions.

23 THE COURT: No.

24 MR. KEETON: All right. I will try to deal with the
25 G2 grid a little more briefly.

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1 And, as mentioned earlier, these are independent grounds.
2 Geotab leaning on either of them leads to indefiniteness. So
3 turning to the G2 grid, the specification describes the process
4 which explains that there are at least two ways of doing it.
5 So that's Ball Metal's first prong.

6 So Fractus tries to argue that a preferred embodiment
7 instead means the G2 must have nine columns. That's not so.
8 As this Court previously found, Fractus does not have any
9 additional evidence or argument that they did not bring to you
10 before. They're basically asking you to say you're mistaken on
11 prong 1 before, but they don't have any new argument, no new
12 evidence, no new portion of the specification cited, and no
13 expert testimony on this either.

14 The '677 patent provides at least two teachings for the
15 number of columns. One where you use nine columns, which it
16 calls an advantageous compromise for preferred sizes of devices
17 or, alternatively, using cells that have an aspect ratio close
18 to one so that the cells of the grid are as square as possible,
19 as close to square as possible. The spec also calls that
20 advantageous.

21 As this Court noted in the prior order, the specification
22 describes selecting the number of columns and cell aspect
23 ratios with the usual exemplary embodiment language. Fractus
24 asks this Court to reconsider that position but has nothing
25 new.

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1 It says that the Court did not consider the specification
2 statement that the cell of width w_2 is selected to be equal to
3 one-ninth of the length. And you saw there was highlighted
4 versions of this earlier today or that the figures that are
5 shown in the patent all have nine columns. But these aspects,
6 the specification and the figures, they do not alter the
7 Court's conclusion that the specification expressly
8 contemplates using different numbers of rows and columns so
9 long as they're odd. And the specification discusses nine
10 columns as an advantageous compromise for the preferred sizes
11 without actually saying that all embodiments are one
12 embodiment, which is effectively the point of view that Fractus
13 must be taking here.

14 The Court focused on the top line which here from the
15 specification, in Column 17, about choosing an odd number of
16 columns and an odd number of rows. Nine is odd, but so is
17 seven columns, so is five columns, so is 11 columns.

18 The specification, as we saw, also teaches selecting the
19 columns and rows to produce the smallest square possible, and
20 contrary to what Fractus says, nothing in the specification or
21 in the evidence suggests that this is all one embodiment or
22 that you have to pick nine columns first and only then do you
23 turn to try to pick the number of rows to make the cells as
24 square as possible.

25 If Fractus were right and this is all just a single

1 embodiment where -- that is fixed at nine columns, why do all
2 of these passages talk about selecting different number of --
3 different numbers of columns and rows. If the only thing that
4 you could alter to achieve making the cells as square as
5 possible were the number of rows, it would say that. It
6 wouldn't say alter the number of columns or select the number
7 of columns to make them tessellate as squarely as possible. So
8 the first Ball Metal prong is met for the reasons that the
9 Court found.

10 Again, what Fractus is pointing to is really it's just
11 purely exemplary. This is kind of the flip of their position
12 about operating wavelength earlier today.

13 And the third prong, turning to the other two prongs of
14 Ball Metal on grid G2, the third prong is met. As the Court
15 found before, the Court pointed to a persuasive demonstrative
16 from ADT about different results inside and outside the
17 claim -- claim numbers, that is still -- still the case.

18 This is an excerpt from ADT's Exhibit K, which is now the
19 under-seal version of Defendants' Exhibit Y in this case. It
20 shows how one approach on the left leads to results inside the
21 claim language and the other approach on the right leads to
22 results outside the claim. Those are materially different.

23 And Defendant's expert also put in a number of other
24 examples as well here focusing on one of the figures in the
25 patent. Here Figure 17C. If you use the nine-column teaching

1 on the left, the as-square-as-possible teaching on the right,
2 again, focusing on the same antenna and the difference in the
3 number of columns, nine versus 17 -- oh, I'm sorry -- nine
4 versus 11 makes a difference as to whether the resulting
5 calculation is inside or outside the claims.

6 We have grid G2 calculated. We get numbers N2 as 31 on
7 the left and 41 on the right. Then a grid G1 is calculated,
8 this is the higher level coarser view. That one results in an
9 N1 of 13 on the left and an N1 of 19 on the right. And when
10 all of that is calculated, and as Professor Durgin said in his
11 declaration without contradiction, the approach on the left
12 leads to a result, once you plug it into the equation, of 1.25
13 within a claimed range, but the alternate approach leads to a
14 result of 1.11. Outside the claimed range.

15 So these are materially different since one method meets
16 the claimed range and the other does not. Fractus and its
17 experts do not dispute any of these numbers.

18 As previously noted, the -- both methods are called
19 advantageous in the specification and the patents don't clarify
20 which of the two methods to use -- to use given that they have
21 conflicting results.

22 So that meets the second Ball Metal prong. Defendant's
23 expert addressed that. Fractus' expert does not address this
24 issue and so that evidence, that stands un rebutted. That was
25 the missing piece from the prior ADT decision.

1 Fractus focused a little bit earlier today about size,
2 but the specification is completely silent about how one of
3 ordinary skill would determine whether a particular
4 multifunction wireless device, which the patent calls also
5 MFWD, is, in fact, a preferred size, which is contrary to what
6 Fractus said in its reply here.

7 As you see at the bottom there, the specification
8 expressly leaves open that a device can be of any size,
9 depending on the situation.

10 But the inventors, they understood how to describe
11 resolving a situation where there was a conflict between two
12 different implementations of the square-as-possible teaching.
13 This is a different passage from the end of Column 17. This is
14 talking about the embodiment where the focus is making cells as
15 square as possible. And it talks about how if two different
16 approaches lead to the cells being as square as possible, the
17 second grid is selected as to such that the aspect ratio is
18 greater than one. So, notably, the applicants nowhere in the
19 patent gave any direction about how to resolve a conflict
20 between the nine-column teaching versus the
21 as-square-as-possible teaching.

22 And, again, this passage talks about selecting different
23 numbers of columns and rows. If it always had to be nine, it
24 would make no sense to talk about different numbers of columns.
25 So a person of ordinary skill is free to choose from two

1 different approaches, both of which the specification calls
2 advantageous and the specification is completely silent about
3 which methodology should be followed.

4 So one of ordinary skill is given no guidance as to which
5 one to use which meets the second Ball Metal prong, and on both
6 of these grounds and issues all three prongs are met and the
7 claim, though, is indefinite on either ground.

8 Happy to address any questions, Your Honor.

9 THE COURT: All right. Thank you, Mr. Keeton.

10 MR. WANG: Your Honor, it's me again, Xiaoming Wang,
11 on behalf of Plaintiff.

12 I want to rebut some of Mr. Keeton's arguments that you
13 heard, but I want to start by first just making very clear on
14 the record that I don't think there's any gamesmanship on
15 our -- on our side either with respect to the ADT case or this
16 case here.

17 I don't think there's a dispute about what happened in
18 Fractus versus ADT, and Mr. Keeton walked through some of that
19 too. We took a position that we believed was plausible.
20 Mr. Keeton highlighted some reasons why we thought it was
21 plausible.

22 Your Honor then disagreed, as they put it, you were close
23 to finding the term indefinite based on our construction. I
24 highlighted all of the language in your order that we read to
25 believe undermined or cast substantial doubt on the fact that

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1 there was, in fact, an unfolding method and, in fact,
2 Your Honor said pretty explicitly that the unfolding method is
3 not clearly taught by any figures or the specification.

4 So we followed Your Honor's order in ADT pretty
5 immediately. We dropped all the claims, as I noted. It was
6 not in our expert infringement report. It was dropped by the
7 time of summary judgment.

8 So it was no longer an issue, and we have taken that
9 consistent position here today.

10 Nobody has accused us of not following Your Honor's
11 order. I think we were put in the position of either following
12 Your Honor's guidance from the ADT Markman order or continuing
13 to press an argument that Your Honor had frankly said is
14 probably wrong, and we chose the former and I think that is
15 consistent. I think we are acting very much in good faith and
16 there is no gamesmanship.

17 THE COURT: The difficulty that you have, Mr. Wang,
18 is that you've gone from relying upon the two methods to now
19 saying there is but one. And that -- it is tough, once you
20 have endorsed both methods, to come back and now say that there
21 is only one.

22 MR. WANG: Your Honor, I understand. But I think the
23 issue is what the specification actually teaches, not what we
24 mistakenly thought in our initial position. And, as I said, I
25 think a person -- a reasonable person would read your order and

1 determine that we were wrong, frankly.

2 THE COURT: Well, where the order was headed was to a
3 position that the claim is indefinite because there are two
4 ways to determine the contour, and the patent does not teach
5 which should be followed.

6 MR. WANG: Understood, Your Honor. So I think with
7 respect to Factor 1, we are taking the position that it is
8 really only one, and, again, I think under both Teva and the
9 Ball Metal, the dispositive question is not really what we
10 reasonably believe to be the case, what it taught, but what the
11 specifications, in fact, teach, and we've laid out all the
12 reasons why. It does not teach the unfolding method.

13 But I'll say, even if Your Honor determines that there is
14 really just one factor. Again, on Factor 2, everything points
15 in the direction of the orthogonal projection for the reason I
16 discussed at length, which is if you -- if we accept the
17 premise that the unfolding method does exist, you have an
18 unfolded contour that necessarily exceeds an antenna rectangle.
19 And as I walked through Dr. Durgin's example, that it
20 contradicts many aspects of the specification and the
21 requirements in order to calculate complexity factor, which I
22 don't think -- I did not hear Mr. Keeton disagree with that. I
23 spent most -- much of my argument describing why it would be
24 inaccurate to unfold the antenna outside of the antenna
25 rectangle and they had no response, which I take to understand

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1 that they don't dispute that that is an accurate representation
2 of the specification.

3 So even if Your Honor thinks that we're bound by the two
4 methods, I think there's much more on the specification that
5 then shows you ought to use the orthogonal projection because
6 the unfolding method just does not work with the rest of the
7 specification.

8 I'd like to also just briefly rebut some of the other
9 arguments that Mr. Keeton pointed out. Again, as I said, he
10 spent much of the time on three lines of text -- or a line, if
11 you look at it further, on the definition of antenna contour.
12 And I'm happy to discuss all the grammatical and linguistic
13 reasons why we have the better reading now, but, as I
14 mentioned, the dispositive issue really is the antenna contour,
15 whether or not you think about it in terms of Factor 1 or
16 Factor 2, and I heard no response on that specific issue.

17 Again, Mr. Keeton characterized your ADT Markman order as
18 having expressly found that there were two methods. I
19 understand Your Honor is saying that you thought that because
20 we proposed that. But then you also said pretty explicitly
21 that the unfolding method is not taught by the specification or
22 the figures.

23 Mr. Keeton continued to rely on Figure 4. Your Honor has
24 already said, in the ADT Markman order, that Figure 4 does not
25 teach the unfolding method.

1 Matt, if you'd go to Slide 67, yeah. If you go to the
2 next one.

3 Again, I think Your Honor agreed with this and said this
4 pretty explicitly. Figure 4 simply doesn't teach an unfolding
5 method; it's the opposite. It's a manufacturing process where
6 you start with a plate and then you fold it into an antenna
7 from Figure 3 and, in fact, in the specific section it says the
8 reason you want to bend and fold the antenna is so that the
9 orthogonal projection does not exceed the outside of the
10 antenna rectangle. Again, further language indicating that it
11 is the orthogonal projection that matters, not the entire
12 perimeter.

13 Again, I -- the only arguments on antenna contour I heard
14 from the other side is what we said in ADT. Again, I have not
15 heard, you know, argument on why our position is inconsistent
16 with Your Honor's Markman order.

17 THE COURT: Mr. Wang, one of the things I'd like to
18 hear your response to is the argument that the defendant makes
19 based on their Slide 30, if they will pull that up for you.

20 Their argument is that you needed this unfolding method
21 to support the infringement claim in the ADT case and that that
22 was the reason that it was asserted there, and apparently it's
23 not needed for the infringement read here. And that's why I am
24 hearing a different position on the construction of this term.

25 MR. WANG: Your Honor, I don't think this is

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1 inconsistent with anything I have represented here today. I
2 think this is, in fact, the position that we took in ADT. It
3 was wrong. There might be some Geotab devices out there that,
4 based on this unfolding method, would need it we think. I
5 don't know that to be the fact. But if that were true, we
6 would not bring such an accused device because we just don't
7 think that the unfolding method is taught anymore.

8 Again, this is consistent with our position in ADT. It's
9 not consistent with Your Honor's Markman order and it's not
10 consistent with our position here today.

11 THE COURT: So you don't dispute that the reason
12 Fractus relied on this unfolding theory to the antenna contour
13 in ADT was because it was necessary to support the infringement
14 reading as ADT.

15 MR. WANG: I do not dispute that we brought it under
16 the unfolding method and, again, the reason we did that was
17 because, at the time, without Your Honor's guidance from the
18 Markman order, we thought this was a plausible interpretation.
19 And I will note, Your Honor, that there was never actually any
20 infringement found based on this. There was no -- we did not
21 submit an infringement report based on this.

22 And I will say that, again, it's not clear that
23 infringement actually would be found based on our theory from
24 what we now know today, which is, even if you took this
25 perimeter method, it violates the other things about requiring

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1 the antenna contour to be within the four corners of the
2 antenna rectangle, to tessellate the antenna rectangle
3 perfectly, and counting the cells only within the antenna
4 rectangle.

5 So I'm not sure that we would even win on infringement if
6 we had actually advanced this issue. And as I noted, shortly
7 after Your Honor's Markman order, we dropped all the claims,
8 including the term "complexity factor."

9 THE COURT: All right.

10 MR. WANG: Your Honor, can I just briefly address the
11 G2 grid issue?

12 THE COURT: Before you move on to that.

13 MR. WANG: Yep.

14 THE COURT: I would like to hear also your response
15 to the way in which the passage that's on the defendant
16 slide 25 has been reread in connection with your current
17 position.

18 MR. WANG: Certainly, Your Honor. So I think if I
19 can just pull up our version of the slide because we also
20 something prepared on this. If you --

21 Matt, if you go to slide 69.

22 So this is our language. So we think that --

23 THE COURT: The other was your language too. It was
24 just your language from the last case.

25 MR. WANG: Yes. Understood, Your Honor. This is our

1 language here today.

2 So we think -- so first of all, I just want to clear up,
3 Mr. Keeton had suggested that, you know, there might be some
4 dispute about choosing 1 and 2 versus 3. 1 plus 2 teaches how
5 to take the -- determine the antenna contour of a planar
6 antenna. I don't think there's any dispute about that. 1 and
7 2 and 3 is about 3D antennas, and I'll note that even if you
8 accept Mr. Hunter's characterization and says, well, sometimes
9 "or" can just mean or, I think you still would reasonably read
10 the section to say you take the orthogonal projection.

11 As I noted, the orthogonal projection is just kind of a
12 top down shadow puppet, as Mr. Keeton referred to it.

13 So if you take the orthogonal projection onto the antenna
14 rectangle of perimeters of antenna elements period, you would
15 still get the same antenna contour because you would be taking
16 everything. And that would include the perimeters of the
17 planar portions 1 and 2.

18 So I think linguistically it makes sense to distribute
19 orthogonal projection onto the antenna rectangle to both
20 perimeters of antenna elements and to the 3D passage,
21 orthogonal projection onto antenna rectangle of perimeters of
22 parts of the antenna elements. I think that's grammatically
23 correct. If I said a photograph of a group birds or a group of
24 deer, it would say it would be a photograph of both the group
25 of birds and a photograph of the group of deer.

1 So I don't think there's anything grammatically incorrect
2 about that reading. Again, I think that even if we lose on
3 this issue and Your Honor thinks that they have the better, the
4 more reasonable understanding, I still think the dispositive
5 issue is that the further discussion about the antenna
6 rectangle which, again, I've not heard Mr. Keeton have any
7 response to, I think that is dispositive. Because even if you
8 read the section to say plausibly this shows an unfolding
9 method, which, frankly, was our position previously, you would
10 then go to the next steps of determining the complexity factor.
11 Again, it's the complexity factor that we're construing here,
12 not the antenna contour.

13 When you then go down to say, all right, I have to
14 superimpose a G2 grid, I've got it tessellated onto the antenna
15 rectangle, but wait a minute, the antenna rectangle doesn't
16 encompass the entire antenna contour, and then specifically,
17 the specification says you can only count the number of cells
18 within the antenna rectangle, then you're at an impasse. You
19 would say, well, this doesn't make any sense, and so I ought to
20 go back and do the orthogonal projection method.

21 I think that is the real dispositive issue. Again, it is
22 their burden to show that the unfolding method exists and that
23 an ordinary person skilled in the art would not have any
24 substantial guidance to use one method or the other. And I
25 think the antenna rectangle issue is the real guidance, either

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1 the guidance or the instruction that makes clear that there is
2 no unfolding method or, at the very least, a person ought not
3 to follow that unfolding method because it does not make sense
4 with respect to the rest of the specification.

5 THE COURT: All right.

6 MR. WANG: Your Honor, just briefly on the G2 grid.
7 So, again, I did not hear any arguments from Mr. Keeton on --
8 so, again, I did not hear any arguments about -- I understand
9 there's language about preferred MFWD embodiments, but there
10 is -- I did not hear Mr. Keeton discuss anything about --

11 If I go back to our Slide 83, Matt.

12 So they have continued to evade the specific language
13 that's underlined in red. Sure, there's language, again,
14 Your Honor, I think it's best to read this entire passage, and
15 this is -- this is the entire passage describing how to
16 determine the G2 grid. It is really a thought experiment
17 that's thinking through the issues.

18 At the outset it says, yeah. You can take odd number of
19 columns and odd number of rows, but as I explained and as is
20 clear in this passage, it says that can't be right because you
21 can't have an excessive number and you can't have an
22 insufficient number. So we've tried in preferred embodiments
23 and we've realized that nine is great. So, therefore, we're
24 going to use nine with this back to the G2 grid as a whole.

25 And if that were not clear enough, at the end of

1 everything, this entire section that's describing, that's
2 teaching how to construct the G2 grid, it says, thus, that's
3 conclusive, it's not about preferred embodiments, thus, the
4 antenna rectangle is tessellated perfectly with 9 by $(2n+1)$.
5 That's the conclusion of this thought experiment is that we
6 ought to use nine.

7 I -- if Geotab's Slide 63, Mr. Keeton, you'll have to
8 pull it up, but it talks about how sometimes you've got to
9 select a cell that is closer to one when two types of rows
10 might both be close to one.

11 That language further supports the fact that you must
12 have nine columns.

13 Matt, if you can go to Slide 92 in our slides.

14 So this is Figure 14. This is really what the passage
15 Mr. Keeton was talking about refers to; right? So it's not --
16 so the limiting factors are not the nine. The nine column
17 stays set in this specific example. Based on the particular
18 size of this antenna rectangle, the specification makes clear
19 that if you use nine columns with five rows, you get something
20 that's close to one. And if you use nine columns with seven
21 rows, you also get an aspect ratio that's close to one. And
22 the passage that Mr. Keeton talked about is selecting how many
23 rows you use. And the specification is clear that here you use
24 nine columns and five rows because the aspect ratio ends up
25 being bigger than one.

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1 So the variables here are the number of rows and the size
2 of the antenna rectangle, not the number of columns which stays
3 set at nine.

4 Unless Your Honor has any further questions on the G2
5 grid. Thank you.

6 THE COURT: All right. Thank you, Mr. Wang.

7 MR. KEETON: If I may briefly, Your Honor.

8 THE COURT: Yes.

9 MR. KEETON: I have two short points, both on the
10 antenna contour.

11 For at least some of the same claims asserted here, in
12 the ADT case Fractus said that A but not B was correct. Here,
13 for those same claims, they now say that B but not A is
14 correct. But on indefiniteness, the question isn't really
15 whether which one of these is right, the question is whether
16 they are both plausible. Surely Fractus is not arguing that
17 A -- that A and B are not at least plausible. Indeed,
18 Mr. Li [sic] just now said we did indeed that that the prior
19 interpretation of unfolding was plausible.

20 Briefly, on the antenna rectangle where Mr. Li said that
21 there was no -- I forgot my clicker -- that Mr. Li said that
22 there was no rebuttal, I'd like to direct Your Honor to
23 slides 30 and 31 of our briefing -- or of our claim
24 construction slides. On here you can see in the prior ADT case
25 Fractus, in fact, did extend in its unfolding method the

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1 antenna contour beyond the rectangle shown in green to the
2 right there. And they, again, did the same thing as is shown
3 on slide 31.

4 Again, it does not -- it is at least plausible to read
5 the antenna contour as going past the antenna rectangle or they
6 would not have made this argument in the prior case.

7 That's all I have, Your Honor.

8 THE COURT: All right. Thank you, Mr. Keeton.

9 Mr. Wang, do you have any follow-up?

10 MR. WANG: Nothing further, Your Honor.

11 THE COURT: All right. Are there any other claim
12 construction issues that either side wants to address.

13 Mr. Nelson?

14 MR. NELSON: Nothing from Plaintiffs, Your Honor. We
15 thank you for your attention.

16 THE COURT: All right. Thank you.

17 MR. KEETON: Your Honor, the parties for .5 statement
18 also included a couple of additional agreed constructions that
19 do not appear on the tentative order. We assume your final
20 order will include those agreed constructions as well.

21 THE COURT: It will.

22 MR. KEETON: Excellent. Thank you, Your Honor.
23 Nothing further from Geotab.

24 THE COURT: All right. In that case, thank you.
25 You've given me a lot to think about, and I'll try to get a

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claim construction order out promptly. So thank you and we're adjourned.

(Whereupon, the proceedings were concluded at 11:41 a.m.)

Certificate

I hereby certify this 14th day of March, 2026, that the foregoing is, to the best of my ability and understanding, a true and correct transcript from the record of proceedings in the above-entitled matter.

/s/ Karen L. Tyler
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