

UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	Investigation No.
CERTAIN HIGH-STRENGTH ALUMINUM OR	)	337-TA-1402
ALUMINUM-ALLOY COATED STEEL, AND	)	
AUTOMOTIVE PRODUCTS AND	)	
AUTOMOBILES CONTAINING SAME	)	

OPEN SESSIONS

Pages: 871 through 1124 (with excerpts)
Place: Washington, D.C.
Date: March 6, 2025

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 Washington, D.C.
3 BEFORE THE HONORABLE MONICA BHATTACHARYYA
4 Administrative Law Judge

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6 In the Matter of:) Investigation No.
7 CERTAIN HIGH-STRENGTH ALUMINUM OR) 337-TA-1402
8 ALUMINUM-ALLOY COATED STEEL, AND)
9 AUTOMOTIVE PRODUCTS AND)
10 AUTOMOBILES CONTAINING SAME)
11 _____

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13 International Trade Commission
14 500 E Street, S.W.
15 Washington, D.C.

16
17 Thursday, March 6, 2025

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19 EVIDENTIARY HEARING - VOLUME 4

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21 The Hearing commenced remotely, pursuant to the
22 notice of the Judge, at 9:30 a.m. Eastern.

23
24 Reported by: Marjorie Peters, FAPR, RMR, CRR

25

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1 P R O C E E D I N G S

2 JUDGE BHATTACHARYYA: We're on the public
3 record.

4 Are there any issues to discuss before we
5 proceed?

6 MR. MCKEON: I don't think we have any issues,
7 Your Honor.

8 JUDGE BHATTACHARYYA: Okay.

9 MR. HERSHKOWITZ: Your Honor, no issues on our
10 end, but much like yesterday, we just need a little bit of
11 extra time to resolve the exhibit list, which we will
12 submit later today.

13 JUDGE BHATTACHARYYA: Very well.

14 MR. HERSHKOWITZ: Thank you.

15 MS. PARK: Good morning, Your Honor. April Park
16 on behalf of the Respondents.
17 Whereupon--

18 STUART BROWN, PhD,
19 having been previously placed under oath, was examined and
20 testified as follows:

21 CONTINUED DIRECT EXAMINATION

22 BY MS. PARK:

23 Q. Good morning, Dr. Brown.

24 A. Good morning.

25 Q. Let's move on to your Lachmann analysis.

1 Turning to slide 111, yesterday, we talked about
2 Lachmann, but could you tell us a little bit more about it.

3 A. Yes.

4 This is a presentation, my understanding, the
5 German presentation by Carsten Lachmann at Volkswagen given
6 in January of 2005. My understanding is that it was an
7 invited lecture.

8 MR. LAMAGNA: Objection.

9 JUDGE BHATTACHARYYA: Yes.

10 MR. LAMAGNA: Again, I don't think that there's
11 a foundation that's been laid for the testimony as to when
12 this was actually given. He's not a percipient witness.
13 It's hearsay.

14 JUDGE BHATTACHARYYA: Ms. Park, could you lay a
15 foundation as to his basis for this viewpoint.

16 MS. PARK: Yes.

17 BY MS. PARK:

18 Q. Dr. Brown, what is the basis for your statement
19 that this lecture was given on January of 2005?

20 A. Yes.

21 This slide provides that. There was an
22 affidavit provided by someone who attended the conference,
23 and this is just the lecture -- I'm sorry, the quotation
24 from that affidavit, which states that, "...the lecture
25 took place on January 18, 2005, with the location. I was

1 in the audience. During the lecture, the lecturer,
2 Dr. Carsten Lachmann, projected images on a screen that are
3 a part of the presentation appended hereto."

4 JUDGE BHATTACHARYYA: Mr. LaMagna, are you still
5 asserting your objection?

6 MR. LAMAGNA: No, that's fine. Thank you.

7 JUDGE BHATTACHARYYA: Great. Thank you.

8 BY MS. PARK:

9 Q. Turning to slide 13, what are you showing here
10 about Lachmann?

11 A. Well, I have just highlighted some of the
12 content that I've already given.

13 It's a presentation on Usibor, which is an
14 ArcelorMittal alloy that we're talking about in this
15 matter. It provides furnace conditions, 900 to 950
16 Celsius. And once again, it just highlights the fact that
17 Lachmann is with Volkswagen.

18 Q. Okay.

19 Turning to slide 114, let's go through your
20 element analysis.

21 What do we see here about the preamble?

22 A. The preamble states, "A pre-coated steel
23 product."

24 This states, in the presentation, aluminum
25 silicon-coated Usibor, so it is a pre-coated steel product.

1 Q. Turning to slide 115, what are you showing here
2 regarding element 1(a)?

3 A. This states, "A strip of base steel having a
4 first side and a second side."

5 It is a steel strip, so it necessarily has a
6 first and second side.

7 Q. Is that what you're annotating on the right?

8 A. Yes. Exactly.

9 Q. Turning to slide 116, what are you showing here
10 regarding element 1(b)?

11 A. 1(b) requires, "A coating on at least one of the
12 first side of the strip of base steel and the second
13 side... wherein the coating results from interdiffusion
14 between the base steel, and an aluminum or aluminum alloy
15 pre-coating... wherein the coating..." and then it refers
16 to the subsequent limitations.

17 But these are just images taken from the German
18 portion of the Lachmann presentation, because the quality
19 is better, showing the alloyed structure and the
20 interdiffusion of the iron into the aluminum, and aluminum
21 into the iron.

22 Q. What are you showing here on slide 117?

23 A. Well, this is a magnification of those images.

24 In particular, in terms of interdiffusion, if
25 you look at layer (a), you can see that the concentration

1 of iron, which is the top curve, starts from close to
2 100 percent, and then decreases down.

3 And the concentration of aluminum, which is the
4 next curve down, starts on the left at a higher
5 concentration, and then decreases down until the base
6 metal, which is -- I think as I might have said yesterday,
7 that it's a canonical example of diffusion.

8 Q. Turning to slide 118, what are you showing here
9 regarding claim elements 1(c), (d), (e), and (f)?

10 A. 1(c) requires, "An interdiffusion layer having a
11 first mean iron composition."

12 We can see from the blue line, which is the
13 iron, has a -- although it varies, it has a mean
14 composition.

15 1(d) requires, "An intermediate layer having a
16 second mean iron composition different from the first..."

17 It's indicated there by the little window, 2nd,
18 and has a mean composition which is lower than the first.

19 1(e) requires, "An intermetallic layer having a
20 third mean iron composition different from the first and
21 second mean iron compositions, the third mean iron
22 composition being higher than the second mean iron
23 composition..."

24 We can see, again, from the blue curve that the
25 third mean intermetallic layer has a different mean iron

1 composition, and it is different from the second.

2 Then 1(f) requires, "A superficial layer having
3 a fourth mean iron composition different from the third
4 mean iron composition."

5 And we see from the diagram, again, the fourth
6 mean iron composition is different from the third.

7 So limitations 1(c) through 1(f) are met.

8 Q. Here, is the mean iron composition of the third
9 layer higher than the mean iron composition of the second
10 layer?

11 A. Yes. Yes, it is.

12 Q. How can you tell that?

13 A. Well, I would say by inspection, because you can
14 see that the third layer has iron compositions which
15 increase away from the second.

16 So by inspection, you can see that the mean iron
17 composition of the third is higher than the second.

18 Q. Turning to slide 119, what are you showing here
19 regarding claim element 1(g)?

20 A. 1(g) requires that the coating have a thickness
21 greater than 30 microns.

22 This is just an image provided in the
23 presentation which indicates that the coating thickness is
24 between 35 and 50 microns, and therefore, 1(g) is met.

25 Q. Turning to slide 121, in summary, what is your

1 opinion?

2 A. So my opinion is that Claim 1 of the '602 patent
3 is satisfied by the content of the Lachmann presentation.

4 Q. Turning to slide 122, what are you showing here
5 regarding Claim 2?

6 A. Claim 2 states that, "... layers (c) and (d),"
7 which is indicated on the drawing, "are quasi-continuous by
8 occupying at least 90 percent of a level corresponding to
9 each of the layers (c) and (d) and wherein less than
10 10 percent of layer (c) is present at an extreme surface of
11 the product."

12 So if one takes a level, intersects it with
13 layer (c) or (d), you can see that the layer occupies more
14 than 90 percent of that level. And we see less than
15 10 percent of the extreme surface, the uppermost level
16 surface on this image, occupied by layer (c), and
17 therefore, Claim 2 is satisfied.

18 Q. Turning to slide 123, do you know which
19 pre-coated steel product was used in Lachmann?

20 A. Yes.

21 So Lachmann specifically calls out Usibor, but
22 it doesn't call out Usibor 1500. The way you know that
23 it's Usibor 1500, recall the "1500" refers to the strength
24 of the steel -- of the strip, and that's 1500 megapascals.

25 So if you look at the figure on the lower

1 right-hand portion of this slide, it's a test, a tensile
2 test, a test of the strength of the steel, and you can see
3 that the strength is just a little bit above 1500
4 megapascals, and therefore, it would be Usibor 1500.

5 Q. Turning to slide 124, what are you showing here
6 regarding Claim 3?

7 A. So on slide 124, this is Claim 3, which, you
8 know, we talked through yesterday, but it sets up certain
9 required ranges for composition of different elements
10 within the pre-coated steel product.

11 What I put here is a Usibor 1500 specification
12 for different elements within that product.

13 Q. What are you showing here regarding the carbon
14 composition?

15 A. So the carbon composition in the specification
16 is .2 to .25, and Claim 3 requires .15 to .5, so this
17 satisfies the carbon requirement.

18 Q. This document has a January 2021 date.

19 How do you know the spec was the same in
20 Lachmann?

21 A. So if you look at the compositions for Usibor
22 provided in the prior art, you can see that they correspond
23 very closely to what we see for the specification in 2021,
24 and therefore, with minimal differences, one can make that
25 comparison.

1 Q. Turning to slide 126, what are you showing here?

2 A. This sets up the range for the composition for
3 manganese, .5 to 3 percent. The specification gives 1.1 to
4 1.4, so that requirement is met for manganese.

5 127 provides that similar comparison for
6 silicon, .1 to .5. The composition indicated here is .15
7 to .4, so silicon is satisfied.

8 Slide 128 provides a range of -- required range
9 of .01 to 1. The specification has the composition less
10 than .5, and that is satisfied.

11 Titanium requires the concentration to be less
12 than .2. The titanium specification provides a titanium
13 concentration of .02 to .5, so titanium is met.

14 Slide 130 provides aluminum, less than .1. The
15 specification provides a range of .01 to .06, so the
16 concentration of aluminum is met.

17 Slide 131 for phosphorus, required to be less
18 than .1 percent. The specification provides a
19 concentration less than .03, so phosphorus is met.

20 Claim 3 requires sulfur to be less than .05.
21 The specification is .01, so sulfur is met.

22 Boron requires a range between .0005 and .08.
23 The specification claims .001 to .005, so that
24 specification is met.

25 And slide 134 requires that the rest be iron and

1 impurities inherent in processing. And the rest of the
2 material would be iron given the fact that it's a steel
3 alloy, and there would be some inherent impurities, so that
4 portion of the limitation is met.

5 Q. What's an example of an inherent impurity?

6 A. Oh, for example, the nitrogen, which is called
7 out here in the specification.

8 Q. Turning to slide 135, what are you showing here
9 regarding Claim 4?

10 A. Claim 4, you just -- once again accelerated the
11 comparison in the same way that we did yesterday.

12 So specification is color-coded by element, and
13 those same colors are provided and the colors associated
14 with ranges in Claim 4. So one can make that comparison
15 directly.

16 Q. Turning to slide 136, what are you showing here
17 regarding Claims 7 and 8?

18 A. For Claims 7 and 8, set up as we presented
19 yesterday, a ratio of titanium to nitrogen, which has to be
20 in excess of 3.42, and Lachmann doesn't disclose that.

21 But if one looks at Laurent, Laurent
22 specifically calls out that ratio of 3.42, and once again
23 provides a rationale for why that's needed.

24 Q. Is there any other reason why this limitation is
25 met?

1 A. Yes. If you look back at the specification for
2 the Usibor 1500, you can see that that specification is met
3 if you just look at the ratio of titanium to nitrogen in
4 this table.

5 So there is a ratio at .05 to .01, which is 5
6 greater than 3.42.

7 MR. LAMAGNA: Objection.

8 JUDGE BHATTACHARYYA: Yes.

9 MR. LAMAGNA: Outside the scope of his report.

10 JUDGE BHATTACHARYYA: Ms. Park.

11 MS. PARK: Your Honor, he's going back to the
12 same composition that he was just looking at and drawing a
13 mathematical conclusion.

14 JUDGE BHATTACHARYYA: Understood.

15 Did he specifically make that calculation in his
16 report, though?

17 MR. LAMAGNA: I think we're looking around
18 Paragraph 703 of his report.

19 JUDGE BHATTACHARYYA: Mr. LaMagna, as I
20 understand your objection is not as to the Laurent
21 testimony, but as to the calculation within Lachmann, using
22 the Lachmann numbers?

23 MR. LAMAGNA: Yeah. In that section of his
24 report that's dealing with this claim. He's referring back
25 to the Usibor spec in his testimony, which we'd move to

1 strike whereas that's not what's in his report.

2 MS. PARK: Your Honor, we think she's just
3 showing the two different numbers, but --

4 JUDGE BHATTACHARYYA: That portion of testimony
5 is stricken with respect to the calculation of 3.42. You
6 may make the argument in post-hearing briefs.

7 MS. PARK: Understood, Your Honor.

8 BY MS. PARK:

9 Q. Turning to slide 137, what are you showing here
10 about Laurent?

11 A. This is Laurent, which is patent '805. Laurent
12 is an AM, or I think at this time, it wouldn't have been an
13 AM employee, but precursor to AM, and this is the piece of
14 prior art that described that ratio that I just discussed.

15 Q. What is the date of the patent for Laurent?

16 A. October 2, 2001.

17 Q. Turning to slide 138, would a POSITA have been
18 motivated to combine the teachings of Laurent with
19 Lachmann?

20 A. Yes, because Lachmann provides, as I said, this
21 specific callout for the desired ratio, and if someone is
22 interested in examining ways to improve the properties of a
23 product, I think the most obvious thing would be to look at
24 the literature provided by the manufacturer of that
25 product.

1 Laurent talks about having a steel sheet with
2 very high mechanical resistant after thermal treatment, and
3 therefore, I think Laurent represents an obvious place to
4 go, if one is seeking to improve the properties of the
5 material.

6 Q. Turning to slide 139, what are you showing here
7 regarding Claims 9, 10, 18, and 26?

8 A. So Claims 9, 10, 18, and 26 are recitations of
9 required thicknesses for the interdiffusion layer, layer
10 (a).

11 Claim 9 has 15 microns, Claim 10 has 10 microns,
12 Claim 18 has 1 to 15 microns, and Claim 26 has 15 microns.

13 This is an image from Cornette indicating a
14 interdiffusion layer thickness of 10.7 at that point.

15 Q. Are the elements met?

16 A. The elements are met in Claim 9, 18, and 26, not
17 Claim 10. But it's my opinion that, as we know the
18 thickness of the interdiffusion layer is a function of both
19 temperature and residence time in the furnace, and so the
20 longer it's in the furnace, the thicker the interdiffusion
21 layer, the more quickly it goes -- the more slowly it goes
22 through the furnace, the thicker the interdiffusion layer.

23 Cornette provides different processing
24 conditions, and to me, it would have been obvious to
25 someone of ordinary skills to know that here provides a --

1 not a recipe, but conditions by which one could perform
2 experiments to modify the thickness of the interdiffusion
3 layer to be able to obtain whatever thickness one desires.

4 And...

5 Cornette provides slightly different processing
6 conditions than Lachmann, and therefore, I think that
7 someone were to be processing this steel sheet, this would
8 provide a motivation to do those experiments to see what
9 would obtain if one varied those conditions within the
10 furnace.

11 Q. On slide 140, what are you showing here?

12 A. 140, again, indicates that Cornette is in 2001,
13 with authors, Cornette, Laurent, whom we have seen is
14 already an inventor of the Usibor product, a definition of
15 the Usibor, and then again, the alloying conditions -- not
16 the alloying conditions -- sorry -- but the furnace
17 conditions for heating and temperature defined by Cornette.

18 Q. What are you showing here on the right side of
19 the screen?

20 A. This is the slide that I've shown before from
21 Lachmann, again indicating that it's Usibor with different
22 furnace temperature ranges, and the fact that again,
23 Lachmann is from Volkswagen.

24 Q. Turning to slide 141, what are you showing here
25 about Cornette?

1 A. Well, this is, again, information about the
2 Cornette paper, Society of Automotive Engineers 2001 World
3 Congress, dated 2001 -- I'm sorry, Congress in March of
4 2001.

5 Copyrighted 2001 by the Society of Automotive
6 Engineers.

7 Q. How do you know if Cornette is a prior art?

8 A. Well, besides the date of the document, I've
9 reviewed a declaration from Mel Desart who indicates that
10 this publication would have been available soon after the
11 date of this publication.

12 Q. Turning to slide 142, what are you showing here
13 regarding Claims 20 and 22?

14 A. Claim 20 requires that the fourth mean iron
15 composition is lower than the third mean iron composition.
16 That is the same in Claim 22.

17 So if we look at the profile on the right, the
18 fourth mean iron composition indicated is less than the
19 third mean iron composition that one can see by inspection.

20 Once again, the iron concentration is the blue
21 line on this chart.

22 Q. Turning to slide 143, what are you showing here
23 regarding Claims 1 and 21 of the '602 patent?

24 A. I'm -- these are the two claims we just
25 described, Claim 1 and Claim 21.

1 The other claims are identical except for
2 limitation 1(f). So 1(f) requires a fourth mean iron
3 composition different from the third mean iron composition.
4 21(f) requires a fourth mean iron composition different
5 from the first, second, and third mean iron compositions.

6 Q. Turning to slide 144, why do you start your
7 analysis for 21(f) here?

8 A. I start for the reason I provided before is that
9 it's the only limitation which is different from Claim 1.

10 I just indicate the chart to the right which
11 indicates that the fourth mean iron composition is
12 different from the third, second, and first.

13 Q. What are you showing here about claim element
14 21(f)?

15 A. I am showing that 21(f) is satisfied by the
16 Lachmann result, demonstrated in the figure on the right.

17 Q. Turning to slide 145, what are you showing here
18 about Claims 1 and 24 of the '602 patent?

19 A. Claim 1 and 24 are identical to preamble
20 limitation (a), (b), and (g), and the only difference
21 between (c), (d), (e), and (f) is that the element, iron,
22 is replaced with the element, aluminum; otherwise, they are
23 the same.

24 Q. Turning to slide 146, why are you starting your
25 analysis with 24(c) here?

1 A. Once again, the other portions of the claim are
2 the same. So we start with 24(c). It requires an
3 interdiffusion layer having a first mean aluminum
4 composition, indicated by the first. So that has a mean
5 composition.

6 The second has an intermediate layer having a
7 second mean aluminum composition, different from the first.

8 And given the fact that the first is everywhere
9 lower than the second, the mean composition has to be
10 different.

11 24(e) indicates an intermetallic layer having
12 the third mean aluminum composition different from the
13 first and second mean aluminum compositions.

14 The third mean composition is different from the
15 second, and again different from the first, and therefore,
16 24(e) is satisfied.

17 In 149, 24(f) requires a superficial layer
18 having a fourth mean aluminum composition, different from
19 the second -- I'm sorry, first, second, and third mean
20 aluminum compositions. The second mean aluminum
21 composition being greater than the third mean aluminum
22 composition.

23 So all three layers have a different mean
24 composition, and one can see that the second mean aluminum
25 composition is greater than the third.

1 So limitation 24(f) is satisfied.

2 Q. In summary, what is your opinion?

3 A. Well, my opinion, and this is just working
4 through each claim, Claim 1 is satisfied by the Lachmann
5 prior art.

6 Claim 21 is satisfied.

7 Claim 24 is satisfied.

8 And then Claims, 2, 3, 4, 7, and 8 are
9 satisfied. And then Claims 9, 10, 18, 20, 22 and 26 are
10 satisfied.

11 Q. Turning to slide 155, let's move on to the
12 '227 patent.

13 What are you highlighting here regarding Claim
14 16 the '602 and '227 patents?

15 A. So I have highlighted the four limitations
16 associated with the different layers, and Claim 1 of the
17 '227 patent is less restrictive than Claim 1 of the
18 '602 patent.

19 So limitations 1(e), (f), (g), and (h) are
20 satisfied by Claim 1 of the '227 patent. Then I have
21 highlighted limitation 1(i), which states that layers (a),
22 (b), (c), and (d) each have a different mean composition
23 from one another.

24 Q. What about the claim elements that you did not
25 discuss, how do they compare to each other?

1 A. The other claim elements are the same.

2 Q. Turning to slide 156, what are you showing here
3 about the preamble and 1(i)?

4 A. The preamble states that the product is a
5 hot-stamped, coated steel product. And Lachmann, claiming
6 Usibor, by definition, specifies a hot-stamped coated steel
7 product, particularly given the alloyed coating.

8 Then layer -- I'm sorry, limitation 1(i)
9 specifies the layers, (a), (b), (c), and (d) each have a
10 different mean composition from one another, and as we've
11 seen with the iron and aluminum, they have a different mean
12 average composition.

13 So by definition, each of the layers have a
14 different mean composition from one another.

15 So 1(i) of Claim 1 is satisfied.

16 Q. Turning to slide 157, what are you showing here
17 about Claim 2?

18 A. Claim 2 states that layer (a) has a thickness
19 that is less than half of said thickness of the coating.

20 So if one looks at the dimensions of the thick
21 nesses indicated by L1, L2, L3 and L4 in this drawing, L1
22 is less than half of the total thickness. This is
23 indicated on the right-hand side just by the arrows
24 corresponding to the width of those layers.

25 But L1 is less than the combination of L2, 3,

1 and 4, so Claim 2 is satisfied.

2 Q. Turning to slide 158, what are you showing here
3 about Claims 4 and 5?

4 A. So Claim 4 and 5 require the coating of the
5 interdiffusion layer to be less than 17 and 15 microns,
6 respectively.

7 My comment is the same as what I said earlier,
8 in view of Cornette, that Cornette says the conditions
9 which allow and motivate someone to perform experiments to
10 vary -- speed through the furnace or the furnace
11 temperatures to be able to modify an interdiffusion layer
12 to meet these requirements.

13 Q. Turning to slide 159, what are you showing here
14 about Claim 7?

15 A. Claim 7 states that the interdiffusion layer has
16 a first mean iron composition, which we have seen
17 satisfied.

18 The intermediate layer has a second mean iron
19 composition less than the first mean iron composition, so
20 you can see that the composition in the second layer is
21 everywhere less than the first, so that is satisfied.

22 Wherein the intermetallic -- I'm sorry, then
23 continuing on.

24 Wherein the intermetallic layer has a third mean
25 iron composition. The third mean iron composition less

1 than the first mean iron composition, and greater than the
2 second mean iron composition.

3 We can see that the third mean iron composition
4 is greater than the second, and it is less than the first.

5 Then finally, the superficial layer, which is
6 the fourth layer, has a fourth mean iron composition. The
7 fourth mean iron composition being less than the third mean
8 iron composition. One can see that the fourth mean iron
9 composition is less than the third being less than the
10 compositions everywhere on the third layer.

11 So that is satisfied as well. So all of Claim 7
12 is satisfied as well.

13 Q. Turning to slide 160, what are you showing here
14 about Claim 8?

15 A. Claim 8 states that the layer (a) has a
16 thickness that is greater than the thickness of layer (b).
17 L1 is greater than L2.

18 So Claim 8 is satisfied.

19 Q. What are you showing here on slide 161 regarding
20 Claims 9, 10, 11 and 13?

21 A. If we step through each of these, layer (a) in
22 Claim 9 has to have a thickness greater than the thickness
23 of layer (c). We can see that L1 is greater than L3, so
24 that is satisfied.

25 Claim 10 claims requires that layer (a) have a

1 thickness that is greater than the thickness of layer (d).
2 L1 is greater than L4, so that is satisfied.

3 Claim 11 states that layer (a) has a thickness
4 greater than the thickness of layer (b), that is greater
5 than the thickness of layer (c), that is greater than the
6 thickness of layer (d). And in each case, L1 is greater
7 than L2, L3, and L4, so Claim 11 is satisfied.

8 Then Claim 13, finally, states that wherein
9 layer (a) has a thickness that is more than twice the
10 thickness of layer (c). And L1 is more than twice that of
11 L3, and you can see that schematically in the drawing on
12 the right as well, in the arrow lengths on the right as
13 well, so Claim 13 is satisfied.

14 Q. Turning to slide 162, what are you showing here
15 regarding Claim 15?

16 A. Claim 15 requires that the hot-stamped coated
17 steel product is fully martensitic.

18 I have provided a slide from the Lachmann
19 presentation, and I just point out three, independent
20 features.

21 One, it declares the base material to be
22 martensite.

23 Second is that it specifies a cooling rate,
24 which is greater than 30 degrees per second, which
25 according to this drawing for the formation of martensite

1 and cooling rate, would indicate that the resulting product
2 would be martensite.

3 Then third, if we look at the strength
4 information provided in the plot, which we talked about
5 just a little while ago, this indicates the strength is
6 greater than 1,500 megapascals, which corresponds to the
7 strength of Usibor in its fully martensitic state.

8 So each of these independently indicate that we
9 have a fully martensitic product, so Claim 15 is satisfied.

10 Q. Turning to slide 163, what are you showing here
11 about Claim 16?

12 A. All right.

13 Claim 16 of the '227 patent sets up
14 compositional requirements for the base steel.

15 What we have already seen that Claim 3 of the
16 '602 patent has the same requirements. We've already gone
17 through Claim 3 of the '602 patent, and therefore, Claim
18 16 -- I'm sorry, then Claim 3 is satisfied, so Claim 16 is
19 also satisfied.

20 Q. Turning to slide 164, what are you showing here
21 regarding Claim 17?

22 A. All right.

23 I've just set up the same abbreviated comparison
24 between the Usibor specification and the compositional
25 requirements of Claim 17.

1 So one can take each element and compare it by
2 color, and if one does so, they can see that the
3 compositional requirements in Claim 17 are met.

4 Q. Turning to slide 165, what are you showing here
5 about Claim 24?

6 A. Claim 24 sets up a requirement that the steel
7 product have a mechanical strength of excess of a 1,000
8 megapascals.

9 The chart on this slide on the lower right-hand
10 side indicates that the strength is a little higher than
11 1,500 megapascals and also quotes a range of 1,300 to
12 1,500, so Claim 24 is satisfied.

13 Q. Turning to slide 166, could you please summarize
14 your opinion?

15 A. My opinion is that Claim 1 is satisfied by the
16 Lachmann prior art. Claim 2, 4, 5, 7, 8, 9, and 10 are
17 satisfied. 11, 13, 15, 16, 17, and 24 are satisfied.

18 Q. Turning to slide 169, do you understand that it
19 is Complainant's position that there is secondary
20 considerations that supports non-obviousness?

21 A. Yes. That's my understanding.

22 Q. Do you agree with that?

23 A. I do not.

24 Q. Why do you not agree?

25 A. Well, my opinion is that in terms of a claim of

1 commercial success, we know that the hot-stamping of Usibor
2 and Ductibor was in existence before the asserted patents,
3 so I don't see a nexus between the proposed novelty of the
4 product, and whether or not the product was successful
5 given the fact that it was in use before that.

6 In terms of long-felt need, I would say that
7 the -- all of the claim elements, which we have seen, are
8 all disclosed in the prior art, and therefore, there's no
9 indication of that long-felt need.

10 And no unexpected results, I would say the
11 results are predictable because the novel parameters
12 indicated in the specification are already found in the
13 prior art stamping processes.

14 Therefore, for these reasons, I do not believe
15 that secondary considerations support non-obviousness.

16 Q. Turning to slide 170, does anyone else agree
17 with you?

18 A. Yes.

19 This is a portion of the transcript from
20 Dr. Fekete, which states -- from page 32:

21 "In the middle of Paragraph 112, do you see the
22 sentence, 'Based on my knowledge and experience in the
23 industry, Usibor 1500P has not been a substantial
24 commercial success over other hot-stamped boron products';
25 do you see that?

1 Answer: Mm-hmm.

2 Question: Do you stand by that opinion?

3 Answer: Yes."

4 Q. Did you hear that testimony from Dr. Fekete
5 during trial?

6 A. Yes.

7 Q. Let's turn to technical domestic industry.
8 What is your opinion on technical domestic
9 industry?

10 A. My opinion is that there is not a technical
11 domestic industry.

12 Q. Would you give us an overview of the alleged
13 tech DI products?

14 A. Yes.

15 And as we have discussed there, the DI precursor
16 products, which do not practice the patent because they do
17 not have the four-layer structure.

18 Then there are the DI direct products, which
19 have undergone the hot-stamping process.

20 Q. You said the DI precursor products do not have
21 the four-layer structure.

22 How do you know that?

23 A. Because they are pre-coated, but they have not
24 been hot-stamped, and you need the hot-stamping to form
25 those layers.

1 Q. Turning to slide 173, let's look at the DI
2 direct products.

3 Who are the subpoenaed Tier 1 manufacturers
4 here?

5 A. The subpoenaed Tier 1 manufacturers are listed
6 here, Topre, Gestamp, Simwon, Magna, Cleveland-Cliffs,
7 Multimatic, and GNS, sort of forming the lower branch of
8 the schematic.

9 Q. Do you know how many Tier 1 manufacturers there
10 are that have not been subpoenaed in this investigation?

11 A. I do not.

12 Q. Does Dr. Fekete have an opinion on the
13 unsubpoenaed Tier 1 manufacturers' products?

14 A. Yes.

15 His opinion is that the DI direct products
16 hot-stamped by Tier 1 manufacturers who were not subpoenaed
17 as part of this investigation would also practice at least
18 one of the claims of the asserted patents.

19 Q. Do you agree with his opinion?

20 A. I do not.

21 Q. Why do you disagree with his opinion?

22 A. Well, actually, I have two.

23 In particular, we have no information about the
24 Tier 1 manufacturers who were not subpoenaed, what the
25 processing conditions are, what the variation in processing

1 is, and therefore, I fail to see a way one can make a
2 scientific connection between the Tier 1 non-subpoenaed
3 manufacturers and the requirements of the patents, because
4 we just don't have the information to know.

5 Q. Turning to slide 176, let's look at the
6 subpoenaed parties.

7 Again, who are the subpoenaed Tier 1
8 manufacturers in this investigation?

9 A. Topre, Gestamp, Simwon, Magna, Cleveland-Cliffs,
10 Multimatic and GNS.

11 MS. PARK: Your Honor, at this time, we'll go
12 into third-party confidential, so it will be all-party
13 confidential record.

14 JUDGE BHATTACHARYYA: Thank you.

15 We're moving to the all-party confidential
16 record.

17 May we proceed?

18 MR. LAMAGNA: Yes.

19 (Whereupon, the trial proceeded in confidential
20 session.)

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1 O P E N S E S S I O N

2 BY MS. PARK:

3 Q. Why do you say that the tested products do not
4 satisfy the claims?

5 A. Well, the first is, once again, Dr. Fekete
6 provides one image per product to support his contentions.
7 Once again, the scale of that image is too small to claim
8 that it's representative of the entire product.

9 I just want to say something about this drawing,
10 and it may be obvious, but this is a drawing just taken of
11 a human hair. It's not to scale relative to the scanning
12 electron micrograph.

13 If one were to take that hair and superimpose
14 it, it would obscure the micrograph. Just to get a sense
15 of scale.

16 Q. Thank you.

17 Turning to slide 191, what are you showing here?

18 A. These are the scanning electron micrographs
19 provided by Dr. Fekete for each of the physical parts to
20 support his contention of these products practicing the
21 claims of the patent.

22 Q. Turning to slide 192, what are you summarizing
23 here?

24 A. From Claim 1, I am just indicating, in the same
25 summary form that I did yesterday, that the intermediate

1 and intermetallic and superficial layers aren't supported
2 by the presentation of one image, and therefore, those
3 limitations are not satisfied.

4 Q. Based on this, what is your opinion on all the
5 independent claims of the '602 and '227 patents that
6 require the intermediate, intermetallic, and superficial
7 layer?

8 A. For each of the independent claims, the
9 limitations which require the intermediate, intermetallic,
10 and superficial layer are not satisfied.

11 Q. Well, starting on slide 193, let's look at the
12 SEM images that Dr. Fekete provides.

13 A. Fine.

14 So this is a micrograph from the GM T1XX
15 program, which, to my understanding, includes the GM Sierra
16 and the Chevrolet Silverado truck.

17 I might just put a box around a collection of
18 phases which are separate islands. To me, they do not
19 satisfy the claims of four layers within the coating.

20 Q. What are you showing here on slide 194?

21 A. Well, this is the micrograph presented for the
22 Toyota reinforcement.

23 Once again, it's my contention that these
24 represent separate islands of phases; once again, not
25 satisfying the requirements of the patent claims.

1 Q. What are you showing here on slide 195?

2 A. This is the SEM presented for the Chrysler door
3 ring. We see a little bit more continuity in this image.
4 We still have isolated islands.

5 On the right-hand side, we have a loss of
6 material, which prevents one from forming any conclusion
7 about what may exist in that area of the micrograph. So I
8 consider this to be -- that image to be inadequate to
9 demonstrating that that material meets the claims of the
10 patent.

11 Q. What are you showing here on slide 196?

12 A. Well, on slide 196, this is the Volkswagen
13 image, and my difficulty with this image is just its
14 ambiguity.

15 If you look at the right-hand side, there's just
16 a large amount of missing material, which I think prevents
17 one forming a conclusion either way.

18 I mean, I have admitted that if you have a
19 void --

20 MR. LAMAGNA: Objection. Objection.

21 JUDGE BHATTACHARYYA: Sorry. There's -- I
22 believe there's an objection.

23 MR. LAMAGNA: Yeah. Outside the scope of his
24 report.

25 There isn't any foundation in his report for the

1 concept that there's missing material.

2 JUDGE BHATTACHARYYA: Ms. Park.

3 MS. PARK: Your Honor, on slide of this -- I
4 apologize.

5 Let me put up the... starting on Paragraph 6 of
6 his report, he talks about why he believes Dr. Fekete's
7 analysis of -- the images from Volkswagen do not meet the
8 claimed layers. Here on page 6, he has this exact image.

9 MR. LAMAGNA: Yes, he does have that image, and
10 he does make that conclusory statement.

11 He doesn't provide any opinion about missing
12 materials. We don't see the words "missing materials" or
13 any opinions about alleged missing materials in his report.

14 JUDGE BHATTACHARYYA: Could you please put
15 the -- put that report back up. Then could you turn back a
16 page, please.

17 MS. PARK: Your Honor, he also discussed in his
18 depo how there's certain large voids. If there's a large
19 void, you can't tell what's in that large void.

20 So he definitely talked about the missing
21 materials, and how that plays into his analysis of the
22 claimed four-layer structure.

23 JUDGE BHATTACHARYYA: Could you show me that
24 deposition testimony, please.

25 MR. LAMAGNA: We would contend, Your Honor, that

1 that testimony was not only not in this context, but
2 actually, it goes the other direction. He discusses how
3 voids or cracks that can naturally occur in the product do
4 not affect continuity.

5 JUDGE BHATTACHARYYA: Ms. Park, why don't we
6 move on. At the current time, the last question and answer
7 are stricken.

8 You can move back to that issue. We'll take a
9 break, and then we can -- if you show me any deposition
10 testimony you think supports your view, and reask the
11 question depending on what the ruling is.

12 MS. PARK: Yes, Your Honor.

13 BY MS. PARK:

14 Q. Turning to slide 197, what are you showing here?

15 A. This is a micrograph for a Volkswagen part
16 presented by Dr. Fekete. Once again, I just point out that
17 the phase indicated by the number 3 has these isolated
18 islands, and therefore, it's my contention that --

19 MR. LAMAGNA: Objection, Your Honor. Outside
20 the scope again. He does not in his report talk about
21 either layer 3 or any particular aspects of the image.

22 MS. PARK: We're in the same report.

23 JUDGE BHATTACHARYYA: All right.

24 MS. PARK: Where he starts talking about why he
25 believes the layers are not present, and this same image is

1 on page 5 of his report.

2 MR. LAMAGNA: Yes. So we have again a
3 statement, a conclusory statement at the beginning that
4 says the cracks are not continuous and -- or I'm sorry,
5 that the layers are not continuous and homogeneous without
6 specifically identifying layers, and then a series of
7 pictures.

8 We don't have any drill-down or any of the
9 opinions that are coming from the witness now, which is why
10 we would move to strike.

11 JUDGE BHATTACHARYYA: Understood.

12 Why don't we take a 15-minute break now, and
13 we'll come back and I'll provide a ruling are on that
14 issue.

15 MS. PARK: Thank you, Your Honor.

16 (A recess was taken at 10:39 a.m., after which
17 the hearing resumed at 10:55 a.m.)

18 JUDGE BHATTACHARYYA: Please be seated.

19 We had an objection on the record with respect
20 to Dr. Brown's testimony about isolated islands. That
21 objection is overruled in view of the disclosures in
22 Dr. Brown's report, including Paragraphs 38 to 45 of his
23 initial expert report where he explains what not homogenous
24 and continuous means.

25 With that objection overruled, we can proceed.

1 MR. LAMAGNA: Thank you.

2 MS. PARK: Thank you, Your Honor.

3 As to slide 196 about voids, we have his
4 deposition transcript here where he explains when the void
5 is large, and it disrupts different phases, he would
6 consider that loss of continuity, which is more severe than
7 a crack or a simple void.

8 JUDGE BHATTACHARYYA: Mr. LaMagna, could you
9 respond to this?

10 MR. LAMAGNA: I'm sorry, if I'm not following.
11 I believe you overruled my objection.

12 JUDGE BHATTACHARYYA: I overruled the objection
13 regarding islands. I think this is going to the issue of
14 whether the missing void can be discussed in relation to
15 non-homogenous and not continuous.

16 MR. LAMAGNA: Understood, Your Honor.

17 Again, I think there's testimony here as well
18 where he says that the voids can be of, shall we say, an
19 uneventful nature.

20 The challenge here is that in his report, he
21 doesn't call balls and strikes on this image to determine
22 whether or not a void is either substantial, as he's
23 describing here or one to be expected to be found. That's
24 not in his report.

25 JUDGE BHATTACHARYYA: Thank you.

1 In view of the deposition testimony, that
2 objection is also overruled. You can explore the issue you
3 just discussed on cross-examination.

4 MR. LAMAGNA: Thank you, Your Honor.

5 MS. PARK: Your Honor.

6 BY MS. PARK:

7 Q. So on slide 196, what are you showing here,
8 Dr. Brown?

9 A. This is a micrograph from a Volkswagen part, and
10 the point that I made before the break was that the large
11 absence of material on the right-hand side prevents one
12 from making a conclusion one way or another.

13 Q. What is your opinion on whether the claimed
14 layers here?

15 A. I would claim that it's not possible to --
16 sorry, let me rephrase that.

17 I would contend that it's not possible to say
18 whether that image meets the claims.

19 Q. So it's your view that it does not meet the
20 claim?

21 A. Correct.

22 Q. Turning to slide 197, what are you showing here?

23 A. This is another Volkswagen part, and my comment
24 here is that we once again, we see these isolated islands,
25 which to me, indicates that this particular microstructure

1 does not meet the claims of the patents.

2 Q. Turning to slide 198, what are you showing here?

3 A. This is another micrograph from a Volkswagen
4 part presented by Dr. Fekete.

5 Once again, we see these isolated islands, which
6 to me, indicates that the -- this illustrated coating does
7 not meet the claims.

8 Q. Turning to slide 199, did you rely on any other
9 testings to form your opinion?

10 A. Yes.

11 I also relied upon the testing of Dr. Bradley on
12 some tech DI products.

13 Q. What are you showing here on the slide for
14 Chrysler door ring?

15 A. These are two images taken by Dr. Bradley. Once
16 again, you can see through these images, we see these
17 isolated phases not meeting the claims of the two patents.

18 Q. What are you showing here on slide 200?

19 A. These are additional images that were obtained
20 by Dr. Bradley using scanning electron microscopy, again,
21 demonstrating microstructures, which are isolated phases,
22 not meeting the claims of the two patents.

23 Q. Turning to slide 201, what are you showing here
24 regarding the Honda Odyssey, GM, and Tesla door ring?

25 A. These are, again, additional micrographs for the

1 Honda Odyssey, the GM T1XX, and the Tesla door ring.

2 Again, one sees isolated phases, which do not
3 meet the claims of either patent.

4 Q. On slide 202, what are you showing here about
5 the Volkswagen parts?

6 A. These are images from two Volkswagen parts, and
7 we see through these coating microstructures. Once again,
8 isolated phases, not meeting the claims of either patent.

9 Q. What are you showing here on slide 203?

10 A. So we're coming back to my same shorthand, which
11 just indicates that for Claim 1 of the '602 patent, the
12 tech DI products don't meet the requirements of an
13 intermediate, intermetallic, and superficial layer, and
14 therefore, Claim 1 is not satisfied.

15 Q. Based on this, what is your opinion of all of
16 the independent claims of the '602 and '227 patents that
17 require the intermediate, intermetallic, and superficial
18 layers?

19 A. Well, this would apply to all of the independent
20 claims.

21 So in each case, the independent claims are not
22 satisfied.

23 Q. Let's move on to the dependent claims.

24 What are you showing here regarding Claim 2?

25 A. Well, the '602 patent, Claim 2, states that

1 layers (c) and (d) are quasi-continuous by occupying at
2 least 90 percent of a level corresponding to each of the
3 layers (c) and (d). Wherein, less than 10 percent of
4 layer (c) is present at an extreme surface of the product.

5 I've just illustrated boxes where we see on the
6 extreme surface the lighter phase is occupying more than
7 10 percent of the free surface of the product.

8 I would also state that if you look at the
9 lighter phase, that doesn't occupy 90 percent of a level,
10 either.

11 So I would say that for this product, Claim 2 is
12 not satisfied.

13 Q. What are you showing here on slide 205?

14 A. This is a similar image highlighted in the same
15 way, that we see the lighter phase sitting on the surface
16 of the coating, again, occupying more than 90 -- more than
17 10 percent, excuse me, of the free surface, again, not
18 satisfying Claim 2.

19 Q. Turning to slide 206, what are you showing here
20 regarding Claims 7 and 8?

21 A. Claims 7 and 8, we turn back to this required
22 ratio of titanium to nitrogen. Just for this particular
23 product, the composition of titanium and nitrogen aren't
24 provided, so we can't know whether this material or this
25 part, satisfies these claims or not.

1 Q. When you say "this particular product," what are
2 you highlighting on this slide?

3 A. The Toyota reinforcement.

4 Q. Turning to slide 207, what are you showing here
5 regarding Claim 10?

6 A. For Claim 10, which requires that layer (a) have
7 a thickness less than 10 microns. For the Tesla door arm,
8 Dr. Fekete reports a result, which provides a layer (a)
9 have a thickness greater than 10 microns.

10 So for this dependent claim and for this
11 product, the dependant claim is not satisfied.

12 Q. Turning to slide 208, what are you showing here
13 regarding Claim 10 of the '227 patent?

14 A. Claim 10 claims that layer (a) has to have a
15 thickness that is greater than the thickness of layer (d).

16 For these two products, the thickness of
17 layer (a) is less than the thickness of layer (d).

18 So for this dependent claim in these two
19 products, the dependent claim is not satisfied.

20 Q. What are the two products?

21 A. The Honda Odyssey A-Pillar and the Toyota
22 reinforcement.

23 Q. Turning to slide 209, what are you showing here
24 regarding Claim 13?

25 A. Claim 13 requires that layer (a) have a

1 thickness that is more than twice that of layer (c).

2 For the Toyota reinforcement for this dependent
3 claim, it is not satisfied because 5.04 is not twice that
4 of 3.3.

5 Q. Turning to slide 210, what are you showing here
6 regarding Claims 16 and 17?

7 A. Well, these are two claims, which require
8 certain ranges of composition, and I put up -- point out
9 for the Toyota reinforcement in this table, certain
10 elements are just not provided, so we can't tell whether or
11 not they're satisfied or not.

12 Then for the Chrysler door ring, the
13 concentration of boron does not fall within the ranges of
14 boron specified in Claim 17.

15 So for the Chrysler door ring, for the boron
16 concentration, the claim is not satisfied.

17 Q. For the Toyota reinforcement, which chemical
18 elements are missing as composition?

19 A. Well, that would be titanium, boron, iron, and
20 nitrogen.

21 Q. Turning to slide 211, could you please summarize
22 your opinion?

23 A. Yes.

24 So we've gone through these claims for different
25 components, so I just summarize them here in terms of some

1 do not meet certain dependent claims. All do not meet the
2 independent claims, and therefore, it's my contention that
3 the tech DI products do not infringe.

4 Q. Turning to slide 212, what is your opinion on
5 invalidity based on Complainant's domestic industry
6 analysis?

7 A. It's my opinion that the Complainant's domestic
8 industry analysis does not show that they -- that the DI
9 tech industry exists.

10 Q. Do you have an invalidity opinion based on
11 Complainant's domestic industry analysis?

12 A. I do, and we can step through these.

13 Q. What is your opinion?

14 A. That they are invalid based on that analysis.

15 Q. Turning to slide 213, let's reset ourselves.
16 What are you showing here on this slide?

17 A. So we're just -- for perspective, just coming
18 back to the flowchart that we've discussed earlier.

19 Q. Turning to slide 214, what are you highlighting
20 here on this slide?

21 A. This is Figure 7 from the specification of both
22 patents. And this figure sets up recommended processing
23 additions in the furnace for two variables. One is
24 temperature, and the other is dwell time in the furnace.

25 There are two areas, one more steel thicknesses

1 between .7 and 1.5 millimeters, and then another one for
2 1.5 to 3 millimeters.

3 I have highlighted both of those.

4 Q. What are you showing on the left side of the
5 screen?

6 A. And those, I have translated the language on the
7 right-hand side, and just highlighted the same space, the
8 processing space on Figure 7.

9 Q. Turning to slide 215, what are you showing here?

10 A. This is, again, an extraction of the prior art
11 that we have seen before.

12 This is the work of Kefferstein from Arcelor
13 Auto where he specifies processing conditions for a steel
14 sheet of thickness 1.5 millimeters, and again, furnace
15 conditions for a dwell time between 4 and 10 minutes at a
16 temperature range from 900 to 950 Celsius.

17 Q. Turning to slide 216, what are you showing on
18 this plot?

19 A. What I'm showing here is, in the same scale that
20 exists in Figure 7, that processing window provided by
21 Kefferstein.

22 So it is 4 to 10 minutes on the horizontal axis,
23 900 to 950 Celsius on the vertical axis, which defines a
24 rectangle of temperature and time.

25 Q. What is the thickness disclosed?

1 A. The thickness is 1.5 millimeters.

2 Q. How does that compare to what was disclosed in
3 Figure 7?

4 A. Figure 7 provides two processing windows where
5 1.5 sits in both.

6 Q. Turning to slide 217, what are you showing here?

7 A. 217, I've just superimposed that rectangle on
8 the areas indicated in Figure 7 of the patent.

9 We can see, in this case, there's substantial
10 overlap between the prior art, indicated by Kefferstein,
11 and what's shown in the patent.

12 MS. PARK: Your Honor, we'll have to go on to
13 the confidential record at this time. It's all-party
14 confidential information.

15 JUDGE BHATTACHARYYA: We're moving on to the
16 all-parties confidential record.

17 May we proceed from Complainant's side?

18 MR. LAMAGNA: Yes, Your Honor.

19 JUDGE BHATTACHARYYA: Okay. Thanks.

20 (Whereupon, the trial proceeded in confidential
21 session.)

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1 O P E N S E S S I O N

2 CROSS-EXAMINATION

3 BY MR. LAMAGNA:

4 Q. Hello, Dr. Brown, and thank you.

5 I'm counsel for ArcelorMittal, and we have a few
6 questions for you.

7 You testified at some length regarding the state
8 of the art walking through multiple references earlier.

9 Do you recall that?

10 A. Yes.

11 Q. So the state of the art at the time, and in
12 particular, the references you walked us through, informed
13 your invalidity analysis in this case; correct?

14 A. Correct.

15 Q. Now, to start, every printed publication that
16 you cite as a basis for invalidity was in front of and
17 considered by the patent examiner during prosecution of the
18 asserted patents; correct?

19 A. Yes. That's my understanding.

20 Q. So, for example, Cornette -- just put this up
21 here -- you agree, correct, you recognize that Cornette was
22 on the face of the patent, provided to the examiner,
23 considered by the examiner; correct?

24 A. Yes.

25 Q. Likewise, the reference that you rely on,

1 Lachmann, was also in front of the examiner at the time;
2 correct?

3 A. Yes.

4 Q. That's down here, I believe.

5 That's the Lachmann reference?

6 A. I believe so.

7 Q. For the record, I'm showing you, just as an
8 example, JX-001, which is the '227 patent, but you
9 understand that the same would apply to the '602 patent,
10 JX-0002; correct?

11 A. I believe so. I haven't done that comparison,
12 but I suspect it's true.

13 Q. As a matter of fact, every piece of supposed
14 printed prior art that you discuss in your testimony
15 concerning the state of the art was also before the
16 examiner during the prosecution of the asserted claims;
17 correct?

18 A. Yes.

19 Q. So, for example, on the face of the patent, we
20 see the Engels reference that you discussed; correct?

21 A. Yes.

22 Q. We see the Laurent and Takagi patents also?

23 A. Yes.

24 Q. I think you referred to Vaissiere?

25 A. Yes.

1 Q. Or Vaissiere. My French is regrettably poor
2 given that I'm representing a company that has operations
3 also in France.

4 I think you pointed out the GM1440 document --
5 I'm sorry, GMW14400 document as well; correct?

6 A. Yes.

7 Q. That's here; is that correct?

8 A. Yes.

9 Q. Lastly, we also had your discussion on Hein,
10 which is also present here; correct?

11 A. Yes.

12 Q. Now, the primary examiner on both of the
13 asserted patents is Daniel Schleis; is that correct?

14 A. Okay.

15 Q. I will just show you here where it says on the
16 face of JX-002, the '227 patent, that the primary examiner
17 was Daniel Schleis.

18 Do you see that?

19 A. Agreed.

20 Q. Do you disagree that Mr. Schleis was also the
21 examiner on the '602 patent?

22 A. No.

23 Q. Just for the record, I can show that to you here
24 on JX-0002 as well.

25 Do you see that?

1 A. Yes.

2 Q. Now, you do not have any reason to believe that
3 Examiner Schleis is not well-versed in the field of the art
4 of the '227 or '602 patents; correct?

5 A. I cannot offer an opinion either way. I do not
6 know him.

7 Q. You have no basis to impugn Examiner Schleis's
8 capabilities as it a patent examiner, his knowledge of the
9 art or his knowledge of patent law; correct?

10 A. I agree.

11 Q. You do not view yourself as more experienced in
12 evaluating patentability in this field than Examiner
13 Schleis; correct?

14 A. Sorry. You said that very quickly. Can you say
15 it again.

16 Q. You do not view yourself as more experienced in
17 evaluating patentability in this field than Examiner
18 Schleis; correct?

19 A. Well, I think I would come back to the point
20 that I don't know Mr. Schleis, so I can't offer an opinion.

21 Q. But you have -- it would be fair to say that you
22 have no basis to think that you have more experience in
23 evaluating the patentability of claims related to aluminum
24 alloy-coated steel than Examiner Schleis; correct?

25 A. I can't say either way. I agree.

1 Q. Now, your current job affiliation is with Veryst
2 Engineering; right?

3 A. Correct.

4 Q. Veryst Engineering is an engineering consulting
5 firm in Boston; correct?

6 A. Yes.

7 Q. You haven't had another job since 2005, other
8 than working through Veryst Engineering; correct?

9 A. Correct.

10 Q. And Veryst doesn't operate, own, or oversee any
11 hot-stamping equipment; correct?

12 A. No.

13 Q. As in no, they don't, or no, it's not correct?

14 A. We do not.

15 Q. When I say -- and since -- sorry. Restart.

16 Since 2005, neither you nor Veryst has been
17 involved in offering or setting hot-stamping parameters or
18 requirements for anyone; correct?

19 A. With only the clarification, we have done hot
20 forming, but not hot-stamping. So in other forms, but not
21 in sheet form.

22 Q. So by hot forming, you mean deforming base
23 steel; correct?

24 A. Well, deforming it at high temperatures.

25 Q. Right.

1 But you have not -- Veryst has not been involved
2 in offering or setting hot-stamping parameters or
3 requirements for hot forming any aluminum-coated steel;
4 correct?

5 A. That's right.

6 Q. Now, when I say hot-stamping parameters or
7 requirements, you understand that would include things like
8 the heating rate, the temperature, holding time, stamping
9 or contacting time, cooling rate, cooling time, those kinds
10 of parameters; right?

11 A. Correct.

12 Q. Now, before Veryst, you worked at Exponent from
13 1995 to 2005; correct?

14 A. That's right.

15 Q. When you were working at Exponent, you did
16 not -- that work did not involve aluminum alloy-coated
17 steel; correct?

18 A. No. It did not.

19 Q. When you worked at Exponent, you were not
20 designing or determining or setting standards for
21 hot-stamping steel; correct?

22 A. That's right.

23 Q. Before Exponent, you were at MIT; right?

24 A. Yes.

25 Q. Your research at MIT did not involve aluminum

1 alloy-coated steel; right?

2 A. No. As I said in my deposition, it was more
3 fundamental than that. It was sort of the hot processing
4 of steel and aluminum and other alloys, but not
5 specifically for a hot-stamped aluminum-coated sheet.

6 Q. So again, it's fair to say that your research at
7 MIT did not involve aluminum-coated alloy steel; correct?

8 A. Not directly, no.

9 Q. Before work being at MIT, you were working on
10 your PhD; correct?

11 A. Well, I was at MIT at the time, but yes, I was
12 not a member of the faculty.

13 Q. You got your PhD at MIT as well -- is that --

14 A. I did.

15 Q. With respect to your PhD, your master's, or your
16 bachelor's degree, you didn't specifically conduct research
17 or work with aluminum alloy-coated steel; correct?

18 A. Again, with the stipulation, the work we did was
19 more fundamental. It was not specific to a given product.
20 So if we limit it just to aluminum-coated hot-stamped
21 steel, the answer is, no, we did not.

22 Q. During your educational work on your PhD,
23 master's, or bachelor's, you were not setting the
24 parameters or determining the settings or requirements for
25 any hot-stamping processes; correct?

1 A. That's right.

2 Q. It would be fair to say that you wouldn't be
3 setting the parameters or determinations or requirements
4 during your educational work for any hot-stamping or for
5 any aluminum coatings that would go onto hot-stamping --
6 onto hot-stamped steel products; correct?

7 A. Correct.

8 Q. During your time at MIT or Exponent, you also
9 worked with some aluminum or steel manufacturers; correct?

10 A. Yes.

11 Q. I think you testified at the beginning that --
12 of your testimony that you had done some work for steel or
13 aluminum companies; correct?

14 A. Yes.

15 Q. But your work with steel or aluminum producers
16 in the past did not involve aluminum alloy-coated steel;
17 correct?

18 A. No. I don't think we did anything on that
19 product.

20 Q. Now, you have presented papers at, for example,
21 the American Society of Mechanical Engineers International
22 Mechanical Engineering Congress; correct?

23 A. I don't keep a list of my conference
24 presentations. So technical conferences, certainly. So
25 the best I can say is probably.

1 Q. Okay. I guess I should say that slower for both
2 the reporter, and -- it's a lot of words.

3 But I was just asking if you recall presenting
4 papers for the American Society of Mechanical Engineers
5 International Mechanical Engineering Congress.

6 A. And again, probably.

7 Q. Do you recall presenting a paper in November
8 2015 at the Congress in Houston that year?

9 A. No.

10 Q. Okay.

11 Do you recall whether or not you attended that
12 Congress?

13 A. No.

14 Q. Let's talk about your view of the importance of
15 what a person of ordinary skill in the art of these patents
16 would have understood at the time.

17 Your conclusion on anticipation is based on your
18 opinion that persons of skill in the art would have
19 understood that the art you cite teaches the elements of
20 the various asserted claims; correct?

21 A. Sorry. Could you say that again.

22 Q. Your conclusion on anticipation is based on your
23 opinion that persons of skill in the art would have
24 understood that the art you cite teaches the elements of
25 the various asserted claims; correct?

1 A. Yes.

2 Q. Your conclusion on obviousness is based on your
3 opinion that persons of skill in the art would have been
4 motivated to and found it obvious to combine various
5 teachings in the prior art to achieve what the asserted
6 patents claim; correct?

7 A. Yes.

8 Q. Now, in your view, a person of ordinary skill in
9 the art of the accused patents would, to start, have an
10 undergraduate degree in manufacturing or mechanical
11 engineering, material science or some equivalent; correct?

12 A. Now, I don't recall the precise language, but if
13 that's what I quote, I agree.

14 Q. In your view of a person of skill in the art
15 would also then have two years of experience working in
16 metallurgy; correct?

17 A. Yes.

18 Q. You don't narrow or specify any specific types
19 of metallurgical experience that would qualify someone to
20 be a person of skill in the art of the accused patents;
21 correct?

22 A. Yes. Meaning, I agree.

23 Q. For example, if a steel worker at a plant had an
24 undergraduate degree in mechanical engineering and two
25 years of experience working the line where they're melting

1 and forming steel slabs, they would qualify as a person of
2 skill in the art, in your view, with respect to the
3 asserted patents; correct?

4 A. Yes.

5 Q. Now, the asserted patents relate to aluminum
6 alloy-coated steel requiring very specific layered
7 microstructures that result from hot-stamping; correct?

8 A. Yes.

9 Q. You were in the room when counsel for VinFast
10 described these as half the thickness of a human hair.
11 That's the very delicate provision that we're talking about
12 in these layers; is that correct?

13 A. Yes.

14 Q. You would agree that specific expertise and
15 experience would be needed to obtain the required
16 microstructural layers claimed in the patents that are just
17 collectively half the height of a human hair's thickness?

18 A. I'm not sure I agree with that, with the
19 beginning of the sentence.

20 The question, can you say that again.

21 Q. Well, would you agree, or not, that specific
22 expertise and experience would be needed to obtain the
23 required microstructural layers claimed in the patents?

24 A. So my difficulty with that question is that if
25 you look at the prior art, those microstructures develop --

1 I'm looking for the right adjective -- adverb,
2 ubiquitously, meaning if you look at all of the prior art,
3 they all disclose this four-layer structure.

4 So the question is, does someone need
5 specialized expertise to produce those layers, given the
6 product -- you know, if they're provided that product and
7 the processing conditions. I'm not sure that's true.

8 The fact that it's thin, I acknowledge, but I
9 don't think that plays any role in the determination of
10 expertise.

11 Q. Just to clarify, I'm not talking about
12 generically obtaining a four-layer structure. I'm talking
13 about specifically obtaining the required microstructural
14 layers that are defined in the patent.

15 Do you understand that?

16 A. No, I don't.

17 Q. Well, in other words, my question is -- well,
18 let me rephrase it.

19 You disagree, it is your opinion that specific
20 expertise and experience is not needed to obtain the four
21 layers, specific microstructural requirements that are
22 claimed in the patents; correct?

23 A. So this may not be a complete answer, but I
24 think someone of ordinary skill to take the Usibor
25 pre-coated product, and generate four-layer structure,

1 which satisfies the claims of the patent without
2 specialized expertise.

3 Q. We're talking about before the patent's
4 priority, so we're talking about back in early -- earlier
5 2005, 2004, 2003, your testimony is that it wouldn't
6 require any specific expertise or experience to obtain the
7 four-layer structure required in the patents?

8 A. Yes. That's my opinion.

9 Q. Okay.

10 So just to be clear, in your opinion, a person
11 of skill in the art of the asserted patents does not need
12 example with aluminum alloy-coated steel or experience with
13 designing, you know, a hot-stamping parameters to obtain
14 specific microstructural requirements in order to obtain
15 the elements that are claimed in the patents; correct?

16 A. Correct.

17 Q. In fact, during your career in education, you
18 have not yourself worked with hot-stamped aluminum
19 alloy-coated steel; right?

20 A. That's right.

21 Q. During your career in education, you have not
22 been involved in setting or determining hot-stamping
23 parameters for aluminum alloy-coated steel; correct?

24 A. That's right.

25 Q. You have -- nor have you operated or overseen

1 the operation of hot-stamping steel that is coated with
2 aluminum alloy; correct?

3 A. Correct.

4 Q. You have never been involved in setting or
5 determining the characteristics or requirements for the
6 steel itself that is coated with aluminum -- that is to be
7 coated with aluminum alloy or coated with aluminum alloy;
8 correct?

9 A. Long question.

10 Could you say it again.

11 Q. You have never been involved in setting or
12 determining the characteristics or requirements for steel
13 that is coated with aluminum alloy, or to be coated with
14 aluminum alloy; correct?

15 A. That's right.

16 Q. Nor have you worked on, or set, or determined
17 the characteristics or requirements for aluminum alloy
18 coating for the purposes of coating steel; correct?

19 A. That's right.

20 Q. You have not been involved in setting the
21 characteristics or requirements for aluminum alloy coatings
22 on steel after they've been hot-stamped; correct?

23 A. Sorry. Can I have the question again?

24 Q. You have not been involved in setting the
25 characteristics or requirements for aluminum alloy coatings

1 on steel after they have been hot-stamped?

2 A. That's right.

3 Q. During your career in education, you have not
4 worked on or researched the formation of intermetallics in
5 aluminum alloy coatings on steel that has been hot-stamped;
6 correct?

7 A. That's right.

8 Q. During your career in education, you have not
9 worked on or researched the formation of different layers
10 during the hot-stamping process of aluminum alloy coatings
11 that are on steel; correct?

12 A. Correct.

13 Q. Now, let's talk about another reference you rely
14 on, which is Cornette. That is RX-0019.

15 Do you recall that?

16 A. Yes.

17 Q. Now, as we spoke about earlier, you know that
18 Cornette was before the examiner during prosecution of both
19 asserted patents; correct?

20 A. Yes.

21 Q. You know that POSCO is the company that provides
22 the unlicensed steel to VinFast that is at issue in this
23 case; correct?

24 A. Yes.

25 Q. Are you aware that POSCO cited Cornette to the

1 Patent Office in challenging the asserted patent's parent?

2 A. No.

3 Q. So you were not aware that POSCO's challenge
4 cited Cornette -- well, strike that.

5 Are you aware that there was a challenge to the
6 Patent Office in an IPR, citing Cornette that was then
7 expressly cited and addressed with the patent examiner --
8 with patent Examiner Schleis, during prosecution of the
9 claims that are asserted in this case?

10 A. No.

11 Q. You are aware, though, that whatever happened in
12 prosecution, regardless of whether you know about it, the
13 examiner then expressly allowed the asserted claims; right?

14 A. Sorry. You said that too quickly.

15 Q. Sorry.

16 Did you review the prosecution histories for the
17 two asserted patents?

18 A. I did, but I'll confess, I do not recall them.

19 Q. So you don't recall the specific back-and-forth
20 of the various office actions and responses that were part
21 of the prosecution history in this family?

22 A. I do not.

23 Q. Did the prosecution history, your analysis of
24 the office action -- or strike that.

25 Did your review of the prosecution history

1 inform your invalidity or noninfringement opinions in this
2 case?

3 A. No.

4 Q. Now, another one of the grounds for alleging
5 invalidity that you raise is the 2006 Passat; correct?

6 A. Correct.

7 Q. And the Passat is the only non-printed, alleged
8 prior art that you rely on; correct?

9 A. You mean, as a physical product?

10 Q. Right.

11 Something that isn't a piece of paper or printed
12 publication, patent, that sort of thing?

13 A. That's right.

14 Q. Specifically, you are alleging that the B-Pillar
15 in the Passat anticipates or renders obvious the asserted
16 patents; correct?

17 A. Yes.

18 Q. How big is a B-Pillar for a passenger car like a
19 Passat?

20 A. I'm estimating sitting here, but I would say
21 more than 3 feet, less than 5.

22 Q. Do you have a sense of how heavy it is?

23 A. No. I'd be guessing.

24 Q. Now, VinFast could have brought the Passat
25 B-Pillar here to the hearing; correct?

1 You're not saying that the asserted B-Pillar
2 couldn't have been shipped here; correct?

3 A. No.

4 Q. Your opinion that the Passat B-Pillar
5 invalidates the asserted patents relies on Dr. Bradley's
6 testing; correct?

7 A. Yes.

8 Q. You were not involved with coming up with the
9 testing protocol that Dr. Bradley used for any testing in
10 this case; is that correct?

11 A. That's right.

12 Q. You were not involved in the process by which
13 the samples tested in this case were selected; correct?

14 A. That's right.

15 Q. You were not involved in the process by which
16 the samples in this case were collected, prepared, and then
17 subsequently tested; correct?

18 A. That's right.

19 Q. You were not involved in selecting or providing
20 any guidance for where on a given part the sample or blank
21 should be extracted from for testing; correct?

22 A. That's right.

23 Q. So you were not involved in determining where on
24 the Passat B-Pillar the testing coupons were taken from;
25 right?

1 A. Correct.

2 Q. You didn't inspect the 2006 Passat before it was
3 torn down; is that correct?

4 A. Correct.

5 Q. You never talked to the person who tore down the
6 Passat, and supposedly extracted the B-Pillar; is that
7 right?

8 A. No.

9 Q. That's not right, you did speak to the person?

10 A. I did.

11 Q. Okay.

12 You didn't yourself inspect the parts or the
13 samples that were taken from the Passat; is that correct?

14 A. No.

15 Q. Okay.

16 What did you -- did you inspect the B-Pillar
17 itself?

18 A. Yes.

19 Q. When did you inspect the B-Pillar?

20 A. I traveled out to Detroit on the 24th or 25th of
21 last month, and looked at the Passat, and the B-Pillar from
22 which samples had been extracted.

23 Q. That was after your deposition in this case; is
24 that correct?

25 A. It was.

1 Q. Now, talking about B-Pillars, in addition to
2 welding different components together for a part, it is
3 potentially the case that certain hot-stamped parts can be
4 subject to additional heat treatment after hot-stamping for
5 some region of the part, and that could cause differences
6 in that region; correct?

7 A. Well, that's a very generic statement, but given
8 a generic question, I think I'd have to answer, yes, that's
9 possible.

10 Q. Do you remember being deposed in this case?

11 A. Yes.

12 Q. Do you remember providing, as an example of when
13 that happens, that -- that is -- that differential heat
14 treatment is often done in B-Pillars?

15 A. Well, I don't think I said it was "often done,"
16 but I said it could happen.

17 Q. You agree that for a B-Pillar, there is an
18 effort in the B-Pillar to vary the products throughout the
19 part; correct?

20 A. No. I think that's too broad.

21 I think that there are certainly circumstances
22 where one varies the properties in the B-Pillar spatially,
23 but I can't say that's generic or across all vehicles.

24 Q. Do you remember testifying at your deposition,
25 and I'll quote, "For a B-Pillar, there is an effort in the

1 B-Pillar to vary the properties throughout the part."

2 A. That may be an extraction from my deposition
3 which requires more content on either side.

4 Can you show me the page where I say that.

5 Q. Sure.

6 Mr. Smith, could you pull up CX-20 at 66, lines
7 15 to the bottom of the page.

8 Here, I ask you, "Which processing condition
9 would you need to know to confirm that what one is looking
10 at in an SEM image, constitutes one or more of the layers
11 required by the asserted patent claims?"

12 And you respond, "Well, this sort of gets into
13 the details of the processing, but for example, when I look
14 at the literature, for example, for a B-Pillar, there is an
15 effort in the B-Pillar to vary the properties throughout
16 the," and I think we go to the next line, and you can see,
17 "the part."

18 That's your testimony; correct?

19 A. Yes --

20 Q. Yes or no?

21 A. -- but later in my deposition, you see that --

22 MR. LAMAGNA: Move to strike as nonresponsive,
23 Your Honor.

24 BY MR. LAMAGNA:

25 Q. I'm asking you yes or no, if that's your

1 testimony.

2 A. I'd like to provide more context, but I said
3 yes.

4 Q. Thank you.

5 You are not aware, though, of any other parts in
6 this case that may be subject to differential heat
7 treatment for a region of the part other than the B-Pillar?

8 A. No, I don't know either way.

9 Q. Now, you rely on an image taken from the Passat
10 to show the alleged four-layer structure of the B-Pillar's
11 aluminum alloy coating for the patent claims; correct?

12 A. Yes.

13 Q. Let's pull up your slide 60, RDX-002.60.

14 This is the image that we just mentioned, the
15 SEM?

16 A. Yes. I see it.

17 Q. Now, you cite Exhibit RX-0086 as the source of
18 this SEM image; correct?

19 A. Is that the Bradley report?

20 Q. Yes. And I'm looking at the lower corner. I
21 see a citation to an exhibit on your slide 60; is that
22 correct?

23 A. Yes.

24 Q. Now, do you know which Passat testing coupon
25 this SEM is taken from?

1 A. In here, no, I don't know.

2 Q. But this is the SEM that you contend shows the
3 alleged four-layer structure in the Passat B-Pillar's
4 aluminum coating that meets the asserted patent claims, in
5 your view; correct?

6 A. Yes.

7 Q. Let's just go through two more slides here.

8 If we look at your slide 59 -- if we go back one
9 slide, please -- you see you rely on that same image for
10 Claim 1(a); is that correct?

11 A. Yes.

12 Q. You rely on the image from -- let's go ahead a
13 couple of slides to slide 62.

14 You rely on RDX-0086 as well to prove Claim
15 1(c); correct?

16 A. Yes.

17 Q. If we go to the next slide, slide 63.

18 You rely on RX-0086 to prove Claim 1(d) as well;
19 correct?

20 A. Yes.

21 Q. Let's go to the next slide, slide 64.

22 You rely on RX-0086 for Claim 1(e) as well;
23 correct?

24 A. Yes.

25 Q. And let's go to slide 65.

1 You also rely on RX-0086 for Claim 1(f);
2 correct?

3 A. Yes.

4 Q. Lastly, if we go to slide 66, you rely on
5 RX-0086 for Claim 1(g) as well; right?

6 A. Yes.

7 Q. And you also rely on this same RX-0086 for the
8 corresponding elements that are in the '227 patent,
9 correct, they're essentially similar elements?

10 A. Yes.

11 Q. Now, let's go back to slide 61.

12 You see here that there is a line scan that you
13 are relying on on slide 61?

14 A. Yes.

15 Q. And you're relying on this for elements of, at
16 least here, Claim 1(b); correct?

17 A. Yes.

18 Q. Did this line scan on your slide 61 come from
19 the same section of coating that is imaged on slide 60 from
20 RX-0086?

21 A. I don't recall.

22 Q. Okay.

23 So you can't testify one way or another on
24 whether the line scan on slide 61 came from the same
25 section of coating that is imaged in Exhibit RX-0086;

1 correct?

2 A. Yeah. I mean, this line scan was just used to
3 demonstrate interdiffusion, so I think that would be
4 sufficient, but I can't say whether that was from a line
5 scan on that particular cross-section.

6 Q. Now, you testified that the heating rate is key
7 in this case.

8 Do you recall that?

9 A. No. No, I said that Dr. Drillet claims the
10 heating rate is key.

11 Q. All right. You point out that Dr. Drillet
12 agreed that the heating rate is key, is a key parameter.

13 Do you recall that?

14 A. Yes. I believe that's his opinion.

15 Q. Now, the data and test results that you were
16 given from Dr. Bradley did not disclose the hot-stamping
17 parameters and specifications for the Passat; correct?

18 A. That's right.

19 Q. Dr. Bradley did not identify, and we do not know
20 the heating temperature, heating rate, heating time,
21 holding time, cooling rate, forming temperature, none of
22 that is known for the product samples that came with
23 respect to the Passat; correct?

24 A. That's right.

25 Q. Let's take a look at another reference you rely

1 on in your invalidity analysis, which is Lachmann. I
2 believe that's Exhibit RX-0062.

3 Do you recall this reference?

4 A. Yes.

5 Q. Actually, let's look over to your slides again,
6 at slide 56. That's RDX-002 slide 56.

7 You say at the top of this slide, "Multiple
8 publications that confirm hot-stamping Usibor for
9 Passat/Volkswagen."

10 Do you see that?

11 A. Yes.

12 Q. Over on the right-hand side, you have an image
13 taken from Lachmann; correct?

14 A. Yes.

15 Q. Are you suggesting here that Volkswagen used
16 process parameters shown in Lachmann to make parts for the
17 Passat?

18 A. No.

19 Q. Okay.

20 You'd agree that nothing on the face of
21 Lachmann's presentation says that any process parameter
22 stated there were used to manufacture parts for the 2006
23 Passat; correct?

24 A. That's right.

25 Q. You would agree that there are no documents or

1 testimony in this case that state that the process
2 parameters from Lachmann were used to manufacture parts for
3 the 2006 Passat; correct?

4 A. The only pause I have here is the Lachmann
5 presentation is very long. Most of it is in German, so I
6 don't want to say correct if he actually does disclose
7 Passat. I don't know.

8 Q. In other words, you're not aware of it or
9 relying on that as evidence in this case; correct?

10 A. That's right.

11 Q. You are not opining that the processes or
12 parameters in Lachmann were used in manufacturing the prior
13 art that you've asserted with respect to the Passat;
14 correct?

15 A. That's right.

16 Q. Now, regardless, to your knowledge, Lachmann
17 does not disclose any heating rate or heating curve;
18 correct?

19 A. That's right. He doesn't provide any heating
20 rate.

21 Q. To your knowledge, Lachmann does not even
22 disclose the pre-coating thickness for the product that's
23 shown; correct?

24 A. For the pre-coated state, the pre-coated
25 condition?

1 Q. Yes.

2 A. No, he does not.

3 Q. And --

4 A. Well, I'm sorry. Once again, I wasn't looking
5 specifically for that, so I don't -- to say that he
6 doesn't, I think a better answer is I don't know.

7 Q. Would it be fair to say that you didn't review
8 all of Lachmann, only a few specific translated pages,
9 correct, much of it is in German; correct?

10 A. No, no. I'm saying that I didn't review
11 Lachmann specifically to look for the thickness of the
12 pre-coating.

13 Q. Okay.

14 A. I did look through Lachmann, translate some
15 pages, but specifically on that topic, I did not.

16 Q. You also don't know whether or not Lachmann
17 discloses any dwell times or contact times; correct?

18 A. Wait. Say that again.

19 Q. Well, Lachmann does not disclose, for the
20 product shown, any dwell times during hot-stamping or
21 contact times in the hot-stamping process; correct?

22 It doesn't disclose those parameters?

23 A. Well, he provides dwell time on this chart, but
24 I'm not saying that he provides this for the Passat.

25 Oh, no. I'm sorry. No, you're absolutely

1 right. Excuse me.

2 He provides temperatures. He does not provide
3 dwell time. Yes.

4 Q. So, in other words, but you did not review
5 Lachmann to determine which processing parameters or
6 characteristics Lachmann does or does not disclose;
7 correct?

8 A. No, I did go through Lachmann to see because I
9 was curious about the fact that he did not provide dwell
10 times, and I could not find dwell times.

11 Q. Okay. Let's look at the Takagi reference, which
12 is RX-104.

13 Now, in your view, Takagi exemplifies the
14 understanding of the state of the art before the invention
15 of the asserted patents; correct?

16 A. Yes.

17 Q. Let's take a look at Paragraph 19 of Takagi, for
18 example.

19 Unfortunately, in blowing it up, it's a little
20 challenging to read, but do you see that as Paragraph 19 of
21 Takagi?

22 A. I do.

23 Q. In the first sentence of Takagi, Paragraph 19,
24 the author writes, "The mechanism of formation of the
25 layered structure is not fully evident"; correct?

1 A. Yes.

2 Q. So you understand that the state of the art
3 prior to the invention of the asserted patents was that
4 persons of skill in the art did not understand the
5 mechanism of formation of the layered structure in
6 hot-stamped aluminum alloy coatings; correct?

7 A. Well, once again, I think that's too broad a
8 statement.

9 But for Takagi, specifically, I think it does
10 disclose that the actual material science mechanism of how
11 one forms that layered structure is -- and I don't know how
12 you interpret not fully evident, but -- and I'm not going
13 to interpret what he means, but I think he states that that
14 mechanism is not fully evident.

15 Q. So yes or no, when you testified earlier about
16 the state of the art at the time, you did not mention that
17 according to the references you rely on, the mechanism of
18 formation of the layered structure in hot-stamped aluminum
19 coating was not fully evident at the time; correct? You
20 didn't tell us that; correct?

21 A. No, I did not specifically say that.

22 Q. Now, in your view, the heating rate, heating
23 time, holding time and quenching rate during hot-stamping
24 are all process conditions that affect the result of the
25 hot-stamped aluminum alloy coating; correct?

1 A. So -- you gave a list. Can you give me the list
2 again.

3 Q. I'll just reread the question.

4 In your view, the heating rate, the heating
5 time, holding time, and quenching rate during hot-stamping
6 are all process conditions that affect the result of the
7 hot-stamped, aluminum alloy-coated steel; correct?

8 A. Well, the difficulty I have with the question is
9 that we know that Dr. Drillet has said that those
10 parameters are important. I think in my deposition, I
11 stated that I think it's not clear that how each one of
12 those parameters affect the formation of the coating,
13 because there hasn't been a good description in any
14 document I've seen, other than to say that it has an
15 influence, how that influence imposes itself, how those
16 process conditions impose themselves in terms of forming a
17 microstructure in the coating.

18 Because we've seen that it's possible to form
19 coatings which don't have that microstructure.

20 And I think that there is according to the
21 literature that I've seen, not a clear consensus in terms
22 of precisely what set of conditions are required to produce
23 that specific microstructure because we see that sometimes
24 it occurs and sometimes it doesn't.

25 I mean, that's part of my difficulty with

1 representative analysis because -- it's a double issue
2 because we don't know exactly how those mechanisms
3 influence the coating, and two, to begin with, we don't
4 know what those process parameters are to begin with.

5 Q. In your view, you cannot determine whether or
6 not the claimed layers required in the patents are present
7 unless you know the processing conditions for a hot-stamped
8 part; correct?

9 A. No.

10 Q. Do you recall in your deposition when I asked
11 you that same question, but you answered it the opposite
12 way?

13 A. No, I don't.

14 Q. Mr. Smith, could we pull up CX-0020, page 66,
15 line 10 through 14.

16 In your deposition, I asked, "So, in your view,
17 you cannot determine whether one or more of the claimed
18 layers in the patents is present unless you know the
19 processing conditions for the part; correct?"

20 And you answered, "Correct."

21 That was your testimony, right, sir, yes or no?

22 A. It is.

23 Q. Let's talk more about the references that you
24 contend reflect the state of the art at the time of the
25 invention in 2005.

1 For example, one of the references you rely on
2 in discussing the alleged state of the art at the time is
3 Engels, that's RX-0063; correct?

4 A. Correct.

5 Q. This is the Engels reference, correct, that we
6 see on the screen now?

7 A. Sorry. The question is...

8 Q. This is the Engels reference that we -- or this
9 is the cover sheet for where the document in which the
10 Engels publication is found; correct?

11 A. Right. This is not the Engels publication, this
12 is the cover page for the conference.

13 Q. Let's go to your slides at slide 50, RDX-02.
14 Now, you show here an SEM image from Engels;
15 correct?

16 A. That's right.

17 Q. This material that's excerpted here is what
18 you're relying on to reflect the state of the art from
19 Engels; is that correct?

20 A. Part of Engels, yes. I presented this as part
21 of my discussion of state of the art. Prior art. Sorry.

22 Q. Let's go back a slide to slide 49.

23 This is the remaining part of what you presented
24 to the Court yesterday with respect to Engels as reflecting
25 the state of the art; is that correct?

1 A. Yes.

2 Q. But nowhere in Engels does it disclose what
3 heating rate or heating curve or heating time was used to
4 obtain the result that was illustrated in the SEM and in
5 the data that is shown here; correct?

6 A. I'm pausing because I just don't recall whether
7 he provides any of this information. I suspect he didn't,
8 so with that disclaimer, I agree.

9 Q. So if we go one more slide ahead to slide 50, we
10 don't know in Engels what heating rate or heating curve or
11 heating time was used to obtain the steel that is imaged in
12 this SEM; correct?

13 A. I agree.

14 Q. Now, when it comes to VinFast car parts, you do
15 not know why some VinFast hot-stamped parts were tested,
16 and others were not by Dr. Bradley; is that correct?

17 A. That's right.

18 Q. You were not involved in determining which
19 automobile parts would be tested, or selected; correct?

20 A. That's right.

21 Q. You don't know if Dr. Bradley conducted any
22 tests on parts or samples or coupons other than what he
23 disclosed to you; correct?

24 A. That's right.

25 Q. So you based your opinions on the data that

1 Dr. Bradley gave you; correct?

2 A. Yes.

3 Q. Let's look at slide 36 from your presentation.

4 This is coming from, I believe, the
5 noninfringement portion of your presentation; is that
6 correct?

7 A. Yes, I believe so.

8 Q. This is summarizing the SEM testing data that
9 Dr. Bradley did on VinFast parts; correct?

10 A. Yes.

11 Q. Your noninfringement opinion in this case relies
12 on only two VinFast parts that Dr. Bradley tested, the
13 BIW30009358 and BIW30009357; correct?

14 A. Yes.

15 Q. So all of your opinion on noninfringement with
16 respect to testing data coming from Dr. Bradley relies on
17 testing of these two parts; correct?

18 A. That's my understanding.

19 Q. Now you are aware, as Dr. Fekete testified, that
20 ArcelorMittal tested at least 16 distinct VinFast parts;
21 correct?

22 A. Yes.

23 Q. Let me pull up a chart here on the screen as a
24 demonstrative, if that helps.

25 This lists the two parts up at the top that you

1 address in your testimony that Dr. Bradley tested; is that
2 correct?

3 A. Yes.

4 Q. And this lists the 14 other parts that
5 Dr. Fekete tested; is that correct?

6 A. I believe that's -- my recollection is -- but,
7 yeah, I agree.

8 Q. You're not aware of there being any errors on
9 this chart; is that correct? Take a moment if you need to
10 review it.

11 A. I don't believe so.

12 JUDGE BHATTACHARYYA: Mr. LaMagna, could you
13 please indicate what we've been looking at for the last
14 question.

15 MR. LAMAGNA: I'm sorry.

16 This is demonstrative CDX-0012.1, and this is a
17 list of the part codes for VinFast accused products that
18 were tested by Dr. Fekete.

19 You will see that the top two were illustrating
20 the ones that Dr. Bradley also tested, and then the 14
21 others that were only tested by Dr. Fekete.

22 If Your Honor likes, I'd be happy to hand up a
23 copy of the demonstrative on paper.

24 JUDGE BHATTACHARYYA: That's not necessary.

25 BY MR. LAMAGNA:

1 Q. Now, for the BIW30009358 and 9357 parts, the two
2 parts for which you rely on tests from Dr. Bradley,
3 Dr. Bradley tested different physical parts than Dr. Fekete
4 had analyzed; correct?

5 A. Yes.

6 Q. Dr. Bradley and Dr. Fekete tested different
7 physical parts that happened to share the same part number;
8 correct?

9 A. Yes.

10 Q. Prior to your deposition, prior to submitting
11 your report, you didn't ask Dr. Bradley to inspect or test
12 the same actual physical products that Dr. Fekete tested;
13 correct?

14 A. No.

15 Q. Prior to your deposition and prior to you
16 issuing your reports, neither you nor Dr. Bradley had ever
17 inspected or tested the actual physical parts that
18 Dr. Fekete tested; correct?

19 A. I certainly did not, and I believe Dr. Bradley
20 did not, either.

21 Q. In fact, neither you nor Dr. Bradley have ever
22 examined or inspected the sample coupons or the actual
23 physical products that Dr. Fekete had tested; correct?

24 A. That's right.

25 Q. You recognize that you could have, if you

1 wanted, have asked to inspect, yourself, the testing
2 coupons or the actual physical products that Dr. Fekete
3 tested; correct?

4 A. Yes. I think so.

5 Q. But you never sought or asked to inspect the
6 sample products or sample coupons or, you know, the epoxy
7 mounts or anything that Dr. Fekete actually tested;
8 correct?

9 A. Well, my only hesitation here is I don't know
10 what type of agreements were done between counsel and
11 product availability, but I will acknowledge that I did not
12 ask for those samples.

13 Q. Now, in Dr. Fekete's testimony, he used
14 VinFast's BIW3003722 as an exemplary product to walk
15 through his infringement analysis for all of the asserted
16 claims; correct?

17 A. Sorry. Are you referring to a part code on this
18 slide, or are you referring to something else?

19 Q. I'm referring to Dr. Fekete's testimony that you
20 were here for.

21 During that testimony, when he went through his
22 presentation, he used the VinFast BIW3003722 as an
23 exemplary product when he was walking through his
24 infringement analysis for all of the asserted claims; is
25 that correct? Do you recall that?

1 A. I don't recall, no.

2 Q. Okay.

3 But the BIW3003722 is not one of the parts for
4 which Dr. Bradley sent you test results; correct?

5 A. Correct.

6 Q. You understand that the BIW3003722 is a part
7 that is included in every VF 8 imported into the United
8 States; correct?

9 A. Oh, I have no idea.

10 Q. Now, I understand that for some parts, you
11 simply took issue with some of the evidence that Dr. Fekete
12 submitted; is that correct?

13 A. Well, once again, that's a broad statement, but
14 I think -- I could give a broad answer saying yes, so...

15 Q. Okay.

16 So for some parts, you did not rely on any test
17 data from Dr. Bradley, but you only took issue with the
18 testing evidence that Dr. Fekete submitted by looking at
19 the SEMs that he had cited in his report, and by
20 criticizing those; is that correct?

21 A. Yes. I think that's fair.

22 Q. To be clear, your opinions here should not be
23 considered to extend to parts that Dr. Fekete may have
24 opined on that you did not rebut or address in your
25 testimony; correct?

1 A. Yes.

2 Q. Now, let's look at slide 18 from your slides,
3 RDX-002.

4 You testified earlier about the need for a
5 homogeneous pre-coating of a homogeneous thickness;
6 correct?

7 A. Yes.

8 I quoted this section of the patent.

9 Q. This section is referring to the homogeneity of
10 the pre-coating thickness; correct?

11 A. Correct.

12 Q. So you agree that this discussion in the patent
13 applies to the pre-coating; correct?

14 A. Correct.

15 Q. Not to the hot-stamped part after it's been
16 hot-stamped; correct?

17 A. I agree.

18 Q. You recognize that the claims in this case are
19 to products after they have been hot-stamped, the
20 characteristics of the aluminum coating after hot-stamping;
21 correct?

22 A. I agree.

23 Q. Okay.

24 You agree that the asserted patent claims
25 contain no limitations that recite specific requirements

1 for the pre-coating; is that right?

2 A. I agree.

3 Q. In fact, the asserted patent claims do not
4 contain the word "homogeneous"; correct?

5 A. Agreed.

6 Q. Now, let's call up the '602 patent, which is
7 JX-0002. Let's look at column 5, lines 46 to 50.

8 The inventors say here in the asserted patent
9 that the surface should have a roughness to be sufficiently
10 paintable; correct?

11 A. That's not what the language states precisely,
12 but the issue is adhesion of the painting to the surface.
13 So it's not that it's not paintable, but you don't get
14 adequate adhesion of the paint once it's applied.

15 Q. So there has to be at the surface some
16 topological variation. It can't just be completely smooth;
17 correct?

18 From an industrial standpoint.

19 A. According to the language of the patent, that's
20 what it says.

21 Q. We would expect to see in an SEM that the
22 surface layer is not smooth. It has some topological
23 variation that allows for paintability; correct?

24 A. Sure.

25 Q. We can take this down.

1 Now, you understand that VinFast and
2 ArcelorMittal also tested parts from ArcelorMittal's
3 licensees; correct?

4 A. Yes.

5 Q. Those were parts hot-stamped at Gestamp, Topre,
6 Magna Cosma, Simwon, and Cleveland-Cliffs; right?

7 A. I don't recall the list, but it sounds right.

8 Q. For the purposes of this discussion, you
9 understand that if I refer to those parts as the domestic
10 industry parts, the DI parts; correct?

11 A. Yes.

12 Q. Now, in your infringement analysis, you're not
13 applying two different analytical frameworks, one for tests
14 on the VinFast parts, and something different for tests
15 done on domestic industry parts; correct?

16 A. That's right.

17 Q. Now, you were aware that Dr. Bradley did not
18 test all of the domestic industry parts that Dr. Fekete had
19 tested; correct?

20 A. I don't recall.

21 Q. Well -- strike that.

22 You are aware that -- you don't know one way or
23 another whether Dr. Bradley tested all of the parts that he
24 received in this case; correct?

25 A. I think that's right.

1 Q. You only received the domestic industry parts
2 tests that Dr. Bradley chose to send you; correct?

3 A. Yes.

4 Q. You don't know if Dr. Bradley conducted tests
5 for which he did not provide you the data; correct?

6 A. I pause because I'm not sure I asked him that
7 question, but at this point, I don't think we -- I asked,
8 so I don't know.

9 Q. You don't know if more sample coupons were taken
10 and tested beyond the test data that Dr. Bradley provided
11 you; correct?

12 A. That's right.

13 Q. This applies to tests of VinFast products as
14 well. You do not know if Dr. Bradley conducted tests on
15 VinFast parts for which he did not provide you the data;
16 correct?

17 A. That's right.

18 Q. Again, for the domestic industry parts, you were
19 also not involved in determining where on the parts the
20 coupons or samples were taken for the testing that
21 Dr. Bradley did; correct?

22 A. That's right.

23 Q. You did not provide any direction or guidance to
24 Dr. Bradley or anyone else on where on the domestic
25 industry parts the coupons should be taken from; correct?

1 A. I did not.

2 Q. You were not involved in the testing itself;
3 correct?

4 A. That's right.

5 Q. Let's turn to one of the Tesla door rings as an
6 example.

7 Dr. Bradley provided you SEM images for Tesla
8 door ring parts manufactured by Simwon; correct?

9 A. Sorry. Say that again.

10 Q. Dr. Bradley provided you SEM imagery for Tesla
11 door ring parts that were manufactured by Simwon; is that
12 correct?

13 A. Yes.

14 Q. But all he -- Dr. Bradley gave you were SEM
15 images; right?

16 A. Yes, I believe so.

17 Q. Dr. Bradley did not provide you any line scans;
18 correct?

19 A. I just want to be careful. I don't recall. I
20 don't recall receiving them, but I just don't remember.

21 Q. But regardless, you don't cite any line scans as
22 a basis for your opinion from Dr. Bradley; correct?

23 A. That's right.

24 Q. You don't recall Dr. Bradley providing you any
25 other tests concerning elemental composition in the layers

1 or base steel; correct?

2 A. That's right.

3 Q. And you don't recall Dr. Bradley providing you
4 any hardness data either; correct?

5 A. Correct.

6 Q. Now, when we're talking about a door ring, each
7 door ring comprises a set made up of an inner ring part,
8 and an outer ring part; correct?

9 A. I think terminology varies, so if you could be
10 more clear in terms of what you mean.

11 Q. Well, you know what I mean by a door ring;
12 correct?

13 A. I do.

14 Q. Just for example, just to clarify, you see in
15 this room there are two sections of a door ring present; is
16 that correct?

17 A. Yes.

18 Q. The door ring is essentially the part of the
19 body-in-white framing that goes around where the passenger
20 or driver door is; correct?

21 A. I agree.

22 Q. At least talking about the front doors of a car,
23 you would have a -- you would have two of those, a
24 left-hand door for the driver, and a right-hand door for
25 the passenger, at least as we look at it in the United

1 States.

2 A. Agreed.

3 Q. I guess, in England, they would have to flip
4 that around. You don't have to answer that question.

5 So I understand what we see here are two halves,
6 one behind you and one in front of you of a Tesla door
7 ring; do you recognize that?

8 A. I recognize it as a door ring. Tesla, I'll just
9 have to believe it.

10 Q. Fair enough.

11 I believe what you're looking at over here ahead
12 of you would be the inside door ring for the driver's side,
13 and then there would be some reinforcements inside of that,
14 and then the part that is behind you would be sort of
15 sandwiched in to create the complete door ring; is that
16 correct?

17 A. I believe so.

18 Q. Okay.

19 So that's what I meant when I said "each door
20 ring set," there's an inner and an outer part.

21 Do you understand?

22 A. I do.

23 Q. So when we're talking about a vehicle with
24 respect to the front door rings, the -- there would be four
25 door ring parts; correct?

1 There would be a left and a right hand, each of
2 which would have here, as we see, an inner component, and
3 behind you, an outer component; correct?

4 A. I understand.

5 Q. Now, in forming your opinion -- well, let's look
6 at your slides again. Let's look at slide 18. Maybe I
7 have the wrong slide. Sorry. Typo in my notes. Could we
8 look at slide 201.

9 So here is the SEM that you rely on to show that
10 the Tesla door rings do not, in your view, have the claimed
11 layers that are required; correct?

12 A. Yes.

13 Q. And you rely here on this single SEM image; is
14 that correct?

15 A. Yes.

16 Q. This is -- specifically you're relying on
17 Exhibit RX-0164C; correct?

18 A. Yes.

19 Q. Now, do you know if this is part of the inner or
20 the outer, the left or the right, do you know which of the
21 four components on the Tesla door ring this comes from?

22 A. I do not.

23 Q. Okay.

24 Why don't we look at -- just to clarify this,
25 let's call up Exhibit CX-0084, which is your report. And

1 go to Paragraph 112, which I think is on page 105 of the --
2 107 of the PDF and 102 of the -- there we go. That's it.
3 Okay.

4 Is that the same image that we were just looking
5 at?

6 A. Well, can you flip back and forth?

7 Q. Sure. Sure. Let's go back to the slides.

8 A. Yes.

9 Q. Okay.

10 Now, we look at your report again, Paragraph
11 112, and we see that you've identified this as the outer LH
12 door ring.

13 Do you see that?

14 A. I do.

15 Q. Okay.

16 We can take that down and go back to the slide.

17 So what we're looking at here in your report,
18 then, is the SEM image for one sample that is taken from
19 the Tesla left-hand outer door ring component, correct, or
20 part, I should say?

21 A. Yes.

22 Q. Now, you have not presented any SEMs or any
23 other test results for the left-hand inner door ring;
24 correct?

25 A. No, I have not.

1 Q. You have not presented any SEMs or any test
2 results for the right-hand inner or right-hand outer Tesla
3 door rings; correct?

4 A. Correct.

5 Q. So your only test result is the single SEM image
6 with respect to the left-hand outer Tesla door ring;
7 correct? With respect to the Tesla products.

8 A. Yes.

9 Q. Now, you are aware that Simwon produced four
10 door ring parts; correct? The left and right-hand sides,
11 inner and outer each?

12 A. I mean, if Simwon did all of the production,
13 then I agree.

14 Q. My apologies.

15 I should say that --

16 MR. LAMAGNA: Well, perhaps let's go on the
17 all-parties -- or the Complainant's -- the all-parties
18 confidential record. Sorry. All-parties confidential
19 record.

20 JUDGE BHATTACHARYYA: We're moving to the
21 all-parties confidential record.

22 BY MR. LAMAGNA:

23 Q. Pursuant to subpoena --

24 JUDGE BHATTACHARYYA: Let's wait until everyone
25 leaves the room.

1 MR. LAMAGNA: Apologies, Your Honor.

2 MS. PARK: All right, Your Honor.

3 JUDGE BHATTACHARYYA: All right.

4 (Whereupon, the trial proceeded in confidential
5 session.)

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1 O P E N S E S S I O N

2 BY MR. LAMAGNA:

3 Q. Let's look at JX-002, which is the '602 patent,
4 specifically at Claim 2.

5 Claim 2 of the '602 patent has the limitation
6 that "layers (c) and (d) are quasi-continuous by occupying
7 at least 90 percent of a level corresponding to each"
8 layer; correct?

9 A. I agree.

10 Q. I think we have the highlighter on the wrong
11 section, but -- actually, give me one second, Dr. Brown.
12 Apologies.

13 MR. LAMAGNA: Your Honor, and up to whatever you
14 think is best, but since we're moving in a new direction,
15 do you want to do the lunch break now, or do you want me to
16 continue with another little module?

17 JUDGE BHATTACHARYYA: Why don't we take our
18 lunch break now. Thank you.

19 MR. LAMAGNA: Okay.

20 JUDGE BHATTACHARYYA: We'll be on break for one
21 hour.

22 MR. LAMAGNA: Thank you, Your Honor.

23 (Whereupon, at 12:45 p.m., a lunch recess was
24 taken.)

25

1 A F T E R N O O N S E S S I O N

2 (1:45 p.m.)

3 MR. LAMAGNA: May we proceed, Your Honor?

4 JUDGE BHATTACHARYYA: Yes.

5 On the public record.

6 MR. LAMAGNA: Yes. Public record. Thank you.

7 BY MR. LAMAGNA:

8 Q. Thank you, Dr. Brown. I hope you were able to
9 enjoy a little lunch, and we'll try to wrap this up
10 shortly.

11 Where we left off, we were talking about Claim 2
12 of the '602 patent.

13 Do you recall that?

14 A. I do.

15 Q. We have the limitations of Claim 2 of the
16 '602 patent up on the screen right now; do you see that?

17 A. I do.

18 Q. Claim 2 has a limitation that "... layers (c)
19 and (d) are quasi-continuous by occupying at least
20 90 percent of a level corresponding to each layer."

21 Do you see that?

22 A. I do.

23 Q. In Claim 2, layer (c) is the intermetallic
24 layer, and layer (d) is the superficial layer; correct?

25 A. Yes.

1 Q. Now, you testified today that in certain images
2 in the prior art such as Lachmann, it allegedly shows that
3 this requirement is met.

4 Do you recall that?

5 A. Yes.

6 Q. Specifically, I think, you stated that in the
7 prior art, such as Lachmann, the intermetallic and
8 superficial layers meet this 90 percent requirement;
9 correct?

10 A. Yes.

11 Q. You don't actually -- you did not actually
12 conduct any measurements here where you have determined
13 what portion of continuity or discontinuity there is for
14 Claim Number 2; correct?

15 A. I have not.

16 Q. It is true that you could have calculated an
17 empirical value for the percentage of continuity versus
18 discontinuity and reported that, but you did not; correct?

19 A. Yes.

20 Q. Now, when you read the patent claims and you see
21 the word "layer," you are interpreting layer as being a
22 phase of material that is continuous across the sample;
23 correct?

24 A. Yes.

25 Q. You believe that your understanding of the term

1 "layer" is the same as how a person of skill in the art
2 would understand the word "layer"; correct?

3 A. Yes.

4 Q. Now, after hot-stamping, after manufacturing,
5 vertical cracks can form in the coating; correct?

6 A. Yes.

7 Q. In fact, you would be amazed if you didn't find
8 some cracks; right?

9 A. That's right.

10 Q. Voids or bubbles, that is encased cavities, can
11 also form in the aluminum alloy coating when the
12 microstructure is forming; correct?

13 A. Yes.

14 Q. So in an SEM image because we are looking at a
15 two-dimensional cross-section, a bubble will appear as
16 essentially a black void on the SEM; correct?

17 A. Correct.

18 Q. Now surface material can also flake off or be
19 abraded after hot-stamping; correct?

20 A. Now, I can't eliminate that as a possibility,
21 so, yes, I think it can happen. We see cracks that I think
22 can happen on the external surface.

23 Q. These cracks or voids or bubbles or dislodged
24 sections at the surface are not other phases that interrupt
25 continuity in your view; correct?

1 A. Correct.

2 Q. Now, if you establish that the section of a
3 product captured in an SEM image meets the requirements of
4 the asserted claim, in your view, that is still not enough
5 to establish infringement or establish that that element
6 has been met; correct?

7 A. Could you say that again.

8 Q. If you show that the section of a product
9 captured in an SEM image meets the requirements of the
10 asserted claims, in your view, that is still not enough to
11 establish infringement; correct?

12 A. Correct.

13 Q. So, for example, if you have a VinFast part,
14 where half of the part has a coating on it that meets the
15 claim limitations and the other half of the part, the
16 coating does not meet the claim limitations, it is your
17 understanding that that part would not infringe the
18 asserted claims; correct?

19 A. Correct.

20 Q. When you opined that the layers in some of
21 Dr. Fekete's SEMs did not qualify as a layer, you did so
22 because in your view --

23 Let me start over. Apologies.

24 When you opined that the layers in some of
25 Dr. Fekete's SEMs did not qualify as a layer because in

1 your view it was not continuous, you made that
2 determination based on there being any discontinuity;
3 correct?

4 A. Yes, with one qualification.

5 Q. What would that be?

6 A. Well, I just want to state that during
7 Dr. Drillet's testimony earlier this week, he revealed a --
8 an SEM which was the backup for --

9 Q. Let me just --

10 A. -- for one --

11 Q. Let me clarify, Dr. Brown, I'm asking you about
12 the opinions that you used to form your report, the
13 opinions you presented in this case during this case.

14 Do you understand that?

15 A. Yes.

16 Q. I'm asking about the analysis -- when you
17 reached a determination that Dr. Fekete's SEMs did not show
18 a layer, when you reached that, and you opined on that in
19 your report, and later in this case, you made that
20 determination by considering -- by looking for any
21 discontinuity; is that correct?

22 A. Correct.

23 Q. That could have been a 1 percent discontinuity,
24 a 5 percent discontinuity, a 10 percent discontinuity. It
25 was just a binary determination by you; correct?

1 A. Correct.

2 Q. Now, let's go back to the '227 and '602 patents.
3 You agree that the claim wording there does not say that
4 the layer has to be continuous, or even 100 percent
5 continuous; correct?

6 A. Correct.

7 Q. So the asserted patent claims themselves do not
8 say that the required layers have to be continuous;
9 correct?

10 A. Yes. I would say that the definition of "layer"
11 is indefinite within the patent, but I agree that the
12 claims do not provide any specification.

13 Q. In other words, the word -- other than what we
14 see here in Claim 2 of the '602 patent, but the Claim 1,
15 for example, of the patent where it's talking about layers
16 does not have the word "continuous" in it; is that correct?

17 A. That's right.

18 Q. There is no place in the patent specifications
19 that say that the required layers have to be continuous;
20 correct?

21 A. Agreed.

22 Q. There is no place in the prosecution history
23 where the inventors said that the layers have to be
24 continuous; correct?

25 A. I don't recall. As I said, I don't recall the

1 prosecution history.

2 Q. So, yes or no: Your basis for asserting that
3 each layer must be continuous is based on your
4 understanding of the inventor's testimony from Dr. Drillet;
5 correct?

6 A. Well, I think Dr. Drillet's testimony provided
7 confirmation. So certainly his testimony meant something.

8 Q. Again, your basis for asserting that each layer
9 must be continuous is based on your understanding of
10 Dr. Drillet's testimony; correct; yes or no?

11 A. Well, I don't think it can be answered yes or
12 no, but certainly, Dr. Drillet's testimony provided
13 clarification in terms of the definition of a layer.

14 Q. Without getting hung up on it, you'd agree,
15 then, that at least in part, your basis for asserting that
16 each layer must be continuous is based on your
17 understanding of Dr. Drillet's testimony? That's part of
18 the basis?

19 A. Yes.

20 Q. Now, let's talk about the patents' requirements
21 for the superficial layer for a moment.

22 As the name suggests, the superficial layer is
23 at the top of the stack of layers forming the exterior
24 surface of the coating; correct?

25 A. Correct.

1 Q. Under your construction for Claim 1 of the
2 patents, the superficial layer must be continuous across
3 the entire sample; correct?

4 A. Correct.

5 Q. Let's look again at the '602 patent, Claim 2,
6 JX-002, if we could.

7 In Claim 2 of the '602 patent, again, it refers
8 to layers (c) and (d) with (c) being the intermetallic
9 layer, and (d) being the superficial layer; correct?

10 A. I agree.

11 Q. According to Claim 2, less than 10 percent of
12 the intermetallic layer can be present at the extreme
13 surface of the coating; correct?

14 A. I agree.

15 Q. For layer (c), the intermetallic layer to be
16 present at the extreme surface of the coating has to
17 interrupt layer (d), the superficial layer; correct?

18 A. Correct.

19 Q. But nonetheless, notwithstanding the language --

20 A. No, I'm sorry. Let me back up.

21 So it could either interrupt or it can sit as a
22 separate phase, separate layer on top of the surface of
23 layer (d) because we see some micrographs which have that
24 appearance as well.

25 So it can be either.

1 Q. Okay.

2 But nevertheless, notwithstanding the language
3 we have in Claim 2 of the '602 patent, layers (c) and (d)
4 must still, in your view, be fully continuous, to satisfy
5 the asserted patent claims; correct?

6 A. Correct.

7 Q. So when taken together, looking at Claim 1 and
8 Claim 2 of the '602 patent, the intermetallic and the
9 superficial layers must both still be, in your view, fully
10 continuous despite the language that we see in Claim 2;
11 correct?

12 A. Yes, with the amendment that I referred to a
13 minute ago, but I agree. From my report, it is continuous
14 across the image.

15 Q. Now, let's go to your slide deck a second again
16 and look at -- this is RDX-002. Let's look at Claim -- I'm
17 sorry, slide 32.

18 Or actually, let me -- let's go to slide 170.
19 Let's start there. I'll do them a little bit out of order.

20 You testified earlier today about this quote
21 that's shown on slide 170 of your presentation from
22 Dr. Fekete.

23 Do you see that?

24 A. I do.

25 Q. Now, do you see in the question there, there is

1 some quoted language; do you see that?

2 A. Yes.

3 Q. Do you know what year that quoted language came
4 from?

5 A. If I recall properly, it would have been 2010.

6 Q. So you would agree that this quote of
7 Dr. Fekete's view of commercial sales of Usibor 1500P is 15
8 years old; correct?

9 A. Agreed.

10 Q. Let's go to -- a few slides forward to slide
11 179.

12 Now, I notice here that you have --

13 MS. PARK: Your Honor?

14 JUDGE BHATTACHARYYA: Yes.

15 MS. PARK: Your Honor, this includes
16 confidential business information for all parties.

17 JUDGE BHATTACHARYYA: Let's take the slide down.

18 MR. LAMAGNA: That's fine, we can go on the
19 confidential record.

20 JUDGE BHATTACHARYYA: Let's move on to the
21 all-parties confidential record.

22 (Whereupon, the trial proceeded in confidential
23 session.)

24

25

1 O P E N S E S S I O N

2 REDIRECT EXAMINATION

3 BY MS. PARK:

4 Q. Dr. Brown, I have a few follow-up questions for
5 you.

6 Do you recall opposing counsel asking you about
7 the variability of the B-Pillar properties?

8 A. I do.

9 Q. Do you recall you wanted to provide some more
10 context?

11 A. Yes.

12 Q. Could you provide that context.

13 A. Oh, my comment in that circumstance was that
14 sometimes B-Pillars, after they're hot-stamped, will
15 undergo some thermal treatment at the bottom of the
16 B-Pillar to make them a little bit more deformable, so
17 there's better shock absorption. Well, that occurs after
18 the material leaves the oven.

19 In other words, it doesn't affect the structure
20 of the coating. It only influences the properties of the
21 steel, and -- the base steel or whatever, the steel on the
22 interior of the sheet.

23 I just wanted to provide that clarification,
24 given that discussion. We're not talking about variability
25 in the B-Pillar as it leaves the furnace. That is uniform.

1 Q. Do you recall opposing counsel asking you about
2 whether you need to know the process parameters to know
3 whether a product meets the claim?

4 A. Yes.

5 Q. If you have an SEM, which you believe to have
6 the claimed layers, do you still need to know the process
7 parameters?

8 A. Well, for the definition of the four-layer
9 structure, no.

10 Q. Do you recall opposing counsel asking you many
11 questions about Tesla door arm 2, 3, and 4, and he even
12 wanted you to get out and take a look at the actual
13 physical product?

14 A. I do.

15 Q. Were you here when Dr. Fekete testified
16 yesterday?

17 A. Yes.

18 Q. Let me show you his testimony.

19 "Question: Opening, and in supplemental expert
20 report, with respect to this four layers, the issue of four
21 layers for this what came to be known as Tesla door ring 2,
22 3, and 4, you didn't cite to a single SEM; correct?

23 Answer: Correct." (As read.)

24 Do you see that?

25 A. I do.

1 Q. Any wonder why you wouldn't have responded to
2 Tesla door arm 2, 3, and 4 if he never cited a single SEM
3 for 2, 3, and 4 in his report?

4 A. Well, I would have nothing to respond to, if
5 that were the case.

6 Q. Could I please have slide 62 of Dr. Brown's
7 demonstratives.

8 Do you recall opposing counsel asking you about
9 relying on the same SEM figure for this slide and the
10 surrounding slides?

11 A. Yes.

12 Q. Aside from the SEM --

13 (Clarification requested by the Realtime Stenographer.)

14 Q. So for this slide and the surrounding slides,
15 aside from the SEM, what else do you rely on to show the
16 claimed layers?

17 A. Well, there's also the compositional information
18 in the table below, which provides that varying composition
19 associated with the limitations which follow, you know,
20 1(c) through 1(f).

21 Q. Did you look at the chemical compositions for
22 all the claim limitations that require the layers?

23 A. I did.

24 Q. Could I please have slide 55.

25 Do you understand that that chemical composition

1 comes from Dr. Bradley's analysis of RX-173 on this slide
2 that you presented earlier.

3 A. Yes.

4 MR. LAMAGNA: Objection. Leading.

5 JUDGE BHATTACHARYYA: Ms. Park, could you
6 rephrase the question.

7 MS. PARK: Sure.

8 BY MS. PARK:

9 Q. Where can you find the chemical composition
10 information that is provided in your slides?

11 A. Well, that would be provided for the Passat on
12 the slide which I presented earlier, which would be slide
13 55.

14 Q. What exhibit can you find that information from?

15 A. That would be RX-86 and RPX-1.

16 Q. Any other exhibit?

17 A. Oh, I'm sorry. There's more.

18 RX-173, RX-87.002, and RX-86.

19 Q. Thank you.

20 Do you recall opposing counsel asking you about
21 continuity and discontinuity of the layers?

22 A. Yes.

23 Q. How would you describe the level of
24 discontinuity in this SEM on slide 197 of your
25 demonstrative?

1 A. I would say that it would be interrupted because
2 the phase --

3 MR. LAMAGNA: Objection. This is outside the
4 scope of cross.

5 THE WITNESS: -- one sees in this image --
6 sorry.

7 MR. LAMAGNA: We didn't address this image or
8 this evidence.

9 JUDGE BHATTACHARYYA: Yeah.

10 Ms. Park, what testimony are you referring to?

11 MS. PARK: Yes, Your Honor.

12 Counsel asked him about the level of continuity
13 and discontinuity, and I'm asking Dr. Brown to explain the
14 level of continuity here.

15 JUDGE BHATTACHARYYA: Right. Those were
16 questions about the patent, right, and --

17 MR. LAMAGNA: Right, we were trying to elicit an
18 understanding of his claim construction, and what he was --
19 how he understood the claim terms. We were not applying
20 that to any images or any particular tests or this image.

21 JUDGE BHATTACHARYYA: Right now, I'm not seeing
22 how this is closely enough related to the cross-examination
23 testimony.

24 MS. PARK: Yes, Your Honor. Apologies.

25 I'm asking him how he's applying his

1 understanding of continuity and discontinuity as it relates
2 to the claims.

3 JUDGE BHATTACHARYYA: Perhaps if you could
4 start, sort of, showing what his understanding is in
5 relation to his prior testimony, that might lay a
6 foundation for this discussion.

7 MS. PARK: Okay.

8 BY MS. PARK:

9 Q. Dr. Brown, do you recall counsel asking you
10 about continuity and discontinuity of the layer?

11 A. Yes.

12 Q. What is your understanding of the layer?

13 A. So if we see these isolated islands, I would
14 consider that to be discontinuous.

15 Q. And --

16 MR. LAMAGNA: Again, Your Honor, this is outside
17 the scope because we are applying that within an image. We
18 asked him for his understanding, not to go back through
19 his -- we never went back through his evidence and had him
20 call balls and strikes on continuity, especially not on
21 this image, in particular.

22 JUDGE BHATTACHARYYA: I agree. As I recall, the
23 testimony was about whether continuous meant fully
24 continuous, or whether there could be some discontinuity.

25 MS. PARK: Thank you, Your Honor. We can move

1 on to this line of questions.

2 BY MS. PARK:

3 Q. Do you recall opposing counsel asking you
4 regarding discontinuity?

5 A. Yes.

6 Q. In your response, you recall, you said you had
7 one qualification?

8 A. Yes.

9 Q. Do you recall that when you were trying to
10 provide an explanation as to that qualification, you
11 started referring to Dr. Drillet's testimony; do you recall
12 that?

13 A. I do.

14 Q. Would you like to complete your explanation?

15 A. Please.

16 So in Dr. Drillet's deposition testimony, he
17 described that particularly the superficial layer has to be
18 continuous and homogenous. I included that comment, given
19 the indefiniteness of the definition of "layer" within the
20 patent, and my interpretation of what "continuous" meant.

21 However, in his testimony in the trial --

22 MR. LAMAGNA: Objection. Foundation. And
23 beyond the scope.

24 JUDGE BHATTACHARYYA: The objection is
25 overruled.

1 MR. LAMAGNA: Well, if I could just explain a
2 moment.

3 He's getting into issues of indefiniteness that
4 are outside of his report. I don't recall that also in his
5 slide deck that there was any presentation under Section
6 112.

7 JUDGE BHATTACHARYYA: He did mention
8 indefiniteness in the cross-examination. I'm inclined to
9 allow him some leeway on this explanation of Dr. Drillet's
10 testimony.

11 MR. LAMAGNA: Okay. Thank you, Your Honor.

12 THE WITNESS: So during Dr. Drillet's testimony,
13 as part of that testimony, an image came up -- a better
14 image came up of Figure 1 in the patent because the figures
15 in the patent are, I'd say, poor quality, at best.

16 There was an SEM image which represented the --
17 well, sort of a better quality image upon what Figure 1 was
18 derived, which shows that there is a finger of layer (c)
19 intersecting the surface of layer (d), the superficial
20 layer.

21 And you can't have both. You can't have it to
22 be fully continuous, and then have part of layer (c)
23 intersecting the surface. They're inconsistent.

24 So after seeing that in Dr. Drillet's portion of
25 his testimony, I have to admit that you can have some small

1 interruptions in a layer and still have it be considered a
2 layer just because I hadn't been able to see that image
3 before Dr. Drillet's testimony this week.

4 So that's the only comment I wanted to make.

5 BY MS. PARK:

6 Q. Thank you, Dr. Brown.

7 You recall counsel asking you about the level of
8 discontinuity.

9 Do you recall that?

10 A. Yes.

11 Q. Could you explain the level of discontinuity
12 analysis that you provided.

13 A. Well, I think in many images, we see these
14 isolated islands of phases, which, to me, don't represent a
15 layer. They are isolated phases, which then represent a
16 different microstructure.

17 Q. Counsel referred to binders of documents related
18 to testing that Dr. Fekete purported to rely on.

19 Do you recall that?

20 A. I do.

21 Q. In your response, you said, "In Dr. Fekete's
22 report, he only had one SEM per part."

23 Do you recall?

24 A. I do.

25 Q. Could you explain why you said that.

1 A. Because that's my recollection of what he
2 provided in his report, that there was, per part, a single
3 image for his analysis.

4 MS. PARK: Thank you, Your Honor. No further
5 questions.

6 JUDGE BHATTACHARYYA: Thank you.

7 MR. LAMAGNA: I do have a few follow-up
8 questions, Your Honor.

9 JUDGE BHATTACHARYYA: Very well.

10 MR. LAMAGNA: Sorry, Your Honor. So many
11 papers.

12 RE CROSS-EXAMINATION

13 BY MR. LAMAGNA:

14 Q. You mentioned in your testimony a minute ago
15 about the B-Pillar; correct?

16 A. Yeah. Yes, I did.

17 Q. You understand and agree that in addition to
18 potential post-heating treatment, a B-Pillar can also have
19 a weld down the middle of it; correct?

20 A. Yes.

21 Q. B-Pillar can be formed from two completely
22 different hot-stamped parts that are welded together;
23 correct?

24 A. I agree.

25 Q. Regarding the Tesla door rings, I think you said

1 Dr. Fekete did not mention that in his report; correct?

2 A. No, I don't remember saying that.

3 Q. You had mentioned that Dr. Fekete didn't cite to
4 any SEM imagery or reference the other three Tesla door
5 rings that we have in this case, correct, you weren't aware
6 of them?

7 A. Correct.

8 Q. I'm showing you what is page 119 from
9 Dr. Fekete's report.

10 Do you see footnote 9 here?

11 A. I do.

12 Q. Do you see that footnote 9 refers to additional
13 Simwon parts?

14 A. I do.

15 Q. You understand now that those are the Tesla
16 parts?

17 A. Yes.

18 Q. You see here that even though we don't have
19 Bates Number yet because the -- the material was coming in,
20 that there is a reference here to data coming in. Do you
21 see that at the end of that footnote?

22 A. I do.

23 Q. Did you review that data?

24 A. I did not.

25 Q. Let's call up CX-0683C. This is the TAV

1 document, I believe. It's CX-0683. Let's go -- I think
2 it's page 5. Let's look at -- I don't know if you can
3 focus in, Mr. Smith, on the lower left image, and sort of
4 zoom in on that image.

5 This lower left image is the one that you were
6 referring to in your redirect testimony, as corresponding
7 to Dr. Drillet's testimony earlier; correct?

8 A. Yes, it was.

9 Q. If we look over at far right of that image, you
10 will see that the intermetallic layer kind of pokes through
11 the superficial layer; correct?

12 A. Correct.

13 Q. So, in your view, that would be a discontinuity
14 in the superficial layer there; correct?

15 A. Correct.

16 Q. Ah. Okay.

17 You understand that this -- we can zoom back to
18 the image -- go back to normal perspective, thank you.

19 You understand that this image is -- also
20 corresponds to Figure 1 of the -- in the patents; correct?

21 A. Yes. That's what I said.

22 Q. You understand that Figure 1 of the patents --
23 well, strike that.

24 So, in your view, because of this disruption in
25 the superficial layer, because, in your view, it is not

1 continuous, this would not practice the claims of the
2 patent; correct?

3 A. Well, that's -- that's the inconsistency,
4 because Figure 1 is offered as practicing the claims of the
5 patent, and Figure 1 is a very poor image.

6 So when I saw this image, and recall Dr. Drillet
7 said that the superficial layer has to be continuous, then
8 there's this inconsistency between being continuous and now
9 what we see is a better representation of Figure 1.

10 So if we -- so it's a question of position. If
11 we say that Figure 1 practices the claims of the patent,
12 then it's my opinion that we can admit the type of feature
13 that we see on the right-hand side without compromising the
14 definition of the top layer as -- superficial layer as a
15 layer.

16 Q. To summarize what I understand you are saying
17 is, that if you have a continuous requirement in the word
18 "layer" in the claims, then Figure 1 does not practice
19 those claims; correct?

20 A. I would say it differently.

21 If there is a -- so if there's a requirement
22 that there be no interruption between any of the layers,
23 and the patent requires the same, then this figure would
24 not practice those claims. I agree with that.

25 That was the point of my difficulty, because

1 Figure 1 didn't provide the resolution to be able to make
2 that determination. Dr. Drillet said they had to be
3 continuous across the entire part, but when you look at
4 this image, you can see that there are these small
5 penetrations.

6 Q. So your construction -- let me establish -- you
7 haven't changed your view that in your view, the word
8 "layer" requires that it be continuity, in other words, a
9 layer must be continuous, even though the word "continuous"
10 does not appear in the claims; is that correct?

11 A. With the caveat that we have to allow these
12 small features; otherwise, to me, the patent makes no
13 sense.

14 Q. Let's put up CX-20 of your deposition, page 118,
15 Section -- lines 10 to 15.

16 Do you remember me asking you:

17 "So if you establish that the section captured
18 in an SEM image meets the requirements of the asserted
19 claims, in your view, that is not enough to establish
20 infringement; correct?"

21 And you answered, "Correct."

22 MR. LAMAGNA: No further questions.

23 (Clarification requested by the Realtime Stenographer.)

24 JUDGE BHATTACHARYYA: Was there a question?

25 MS. PARK: No further questions from

1 Respondents, Your Honor.

2 MR. LAMAGNA: Did you not respond to my last
3 question?

4 THE WITNESS: I didn't think it was a question.
5 I didn't think it was posed as a question.

6 MR. LAMAGNA: Oh, I'm sorry. I asked, that was
7 your testimony; correct?

8 THE WITNESS: Correct.

9 MR. LAMAGNA: Okay. Thank you. Sorry about
10 that.

11 Now I will pass the witness back. My apologies.

12 JUDGE BHATTACHARYYA: Okay. No further
13 questions; correct?

14 Thank you very much, Dr. Brown. You may step
15 down.

16 (Witness excused.)

17 MR. MCKEON: Good afternoon, Your Honor.

18 JUDGE BHATTACHARYYA: Good afternoon.

19 MR. MCKEON: Subject to the exhibits being moved
20 into the record, Dr. Brown was our last witness. We are
21 going to rest, and pass the case back to the Complainant.

22 JUDGE BHATTACHARYYA: All right.

23 MR. KATHIR: Good afternoon, Your Honor.

24 Allen Kathir on behalf of the Complainants.

25 Complainants call Dr. Dierk Raabe to the stand.

1 Your Honor, may I approach with a copy of Dr.
2 Raabe's demonstratives?

3 JUDGE BHATTACHARYYA: Yes.

4 Good afternoon, Dr. Raabe.

5 THE WITNESS: Good afternoon.

6 JUDGE BHATTACHARYYA: Could you please raise
7 your right hand.

8 Whereupon--

9 DIERK RAABE, PhD,
10 having been first duly sworn, was examined and testified as
11 follows:

12 THE WITNESS: I do.

13 JUDGE BHATTACHARYYA: Thank you.

14 DIRECT EXAMINATION

15 BY MR. KATHIR:

16 Q. Good afternoon.

17 Can you state your name and let us know what you
18 do for a living.

19 A. Yes.

20 Pleasure to be here. My name is Dierk Raabe,
21 Your Honor, and I come from the western part of Germany,
22 and I work so to say on two assignments, one is being a
23 professor at the University in Aachen, and the second
24 assignment is to be CEO and director of the Max Planck
25 Institute in Dusseldorf.

1 Q. Dr. Raabe, can please tell us a little bit about
2 your educational background?

3 A. Sure.

4 I started off with an education with a diploma
5 degree that is something related to a master degree. So
6 first I have to make a degree in physical metallurgy and
7 metal physics related to the basic science of steels and
8 other metals.

9 Then I went on to pass in '92 the doctoral
10 degree in the same field. I went on through what we call
11 "habilitation." That's something like an exam going
12 through something like an associate professor-level exam.
13 And I passed the doctoral and diplomas degrees, and both
14 have grades to it, with summa cum laude. That's the
15 highest distinction you can have in Germany.

16 Q. What did you do after you graduated?

17 A. So I worked for a time when I did my
18 habilitation, I worked as a research assistant and group
19 leader at the university. Then I was so lucky to gain a
20 so-called Heisenberg Stipendium from the Science
21 Foundation, and I used it to go abroad to go to Carnegie
22 Mellon to work in the field of metallurgy in Pittsburgh.

23 After that, I applied back, and became professor
24 and CEO of the Max Planck Institute.

25 Q. Dr. Raabe, it sounds like you've spent a lot of

1 time in the fields of metallurgy.

2 What got you interested in this field?

3 A. Yeah.

4 Actually, I come from a steel family. So two of
5 my uncles were in the steel business and my father was all
6 his life in the steel industry.

7 So I was not too creative of picking, then, this
8 subject also for my education.

9 Q. So I want to turn to your work as a professor at
10 the University in Aachen.

11 What do you do there?

12 A. So as a professor, I teach all these items that
13 we are discussing here. So the entire field of metallurgy,
14 with a special focus of steel, and I do this even before I
15 became professor because you have to teach before you
16 become a professor, also, to show that you are up to it.

17 So I teach for more than 30 years these things
18 at university, but as a professor, of course, you also
19 develop research programs, collaborations and work also
20 together with industry on these topics.

21 Q. Let's turn to your research. What kind of
22 research do you do?

23 A. So naturally, most of my research circles around
24 steels, of course, since more than 35 years because also,
25 during my diploma thesis, I worked on crystallographic

1 features of steels and so on and on hot forming.

2 Over the years, my expertise and research work
3 built up in the area of microstructures of steels, or that
4 relates to the processing and manufacturing sector of how
5 these are mutually influencing each other, and also how
6 they interact with coatings and how that ties in with the
7 manufacturing.

8 Q. As a professor, have you supervised any PhD
9 students or post-docs?

10 A. Yes.

11 I'm very lucky and also very humbled to over the
12 many decades have had many really brilliant and very nice
13 students, coworkers, and post-docs, and that is a big
14 privilege to go together -- some part of that research path
15 together.

16 Q. Where have some of the PhD students and
17 post-docs that you've supervised, where have they gone on
18 to work?

19 A. So we kind of -- for the young people who are
20 working with us, target kind of -- some of them target an
21 industry career and have made very splendid careers in
22 different companies.

23 A very high fraction also went on to an academic
24 path. Many of my former students and post-docs are
25 nowadays associate or full professors at schools like MIT

1 in the US, or at Ohio State University, or at Imperial
2 College, and at many, many European top engineering
3 schools, or in Asia at Tsinghua University, or the very
4 famous IITs in India, and so on.

5 So many made pretty good careers.

6 Q. Dr. Raabe, you also mentioned that you serve as
7 the director of the Max Planck Institute.

8 Can you tell us what the Max Planck Institute
9 is.

10 A. Yeah.

11 The Max Planck Society is the biggest basic
12 research organization in Germany, and we consist altogether
13 of 84 individual institutes. These are kind of research
14 courses extending over all areas of research.

15 My own institute, which encompasses about 370
16 employees, most of them, of course, researchers, has a
17 history of more than 100 years, actually, 107 years in the
18 field of iron steel research.

19 The original name was Max Planck Institute for
20 Iron Research, which only last year has been transformed to
21 the name of Sustainable Materials. But we do this type of
22 stuff since more than 100 years.

23 Exactly, which was very recently last year
24 renamed to acquire a new name, which now goes by
25 Sustainable Materials.

1 (Clarification requested by the Realtime Stenographer.)

2 Q. Dr. Raabe, have you ever testified in court
3 before?

4 A. No, I haven't testified at court before.

5 Q. Okay.

6 So I just want to remind you that we have a
7 reporter here, and just to slow down a little bit.

8 A. Yeah. Thank you very much. Sorry.

9 Q. In addition to your work at the Max Planck
10 Institute, have you worked with any companies?

11 A. Yes.

12 We collaborated over more than 30 years with
13 many companies on three different continents, I should say.

14 Some of the companies we worked with, and we in
15 part still work with, are shown here on the slide.

16 Q. Okay.

17 I see Mercedes-Benz listed there.

18 What did you do with them?

19 A. Yeah, with Mercedes, we had a very nice
20 collaboration over many years where we, together with the
21 steel industry, namely Salzgitter and Tata Steel, developed
22 new types of high-strength steels to serve in automotive
23 body-in-white structures.

24 So very close to the topic we discuss here
25 today.

1 Q. Dr. Raabe, have you received any awards or
2 recognition for your work?

3 A. Yes, I did.

4 I was very humbly honored and of course, super
5 happy to just a few weeks ago to get the word that I was
6 accepted as a foreign member to the US National Academy of
7 Engineering, which I understand is very rare to get.

8 It makes me, of course, super happy and proud,
9 and I can only extend that humbly also to my team.

10 Then, I also had two European Research Council
11 advanced grants. This is the biggest single research grant
12 you can get over all Europe, equipped with multimillion
13 euros of funding for a single person. So I got that twice.

14 Then I got the Leibniz Award, which is the
15 highest German research award that you can get over all
16 sciences. I got that in 2004.

17 I also on other terms, I served the German
18 government. I was twice recruited by the Court by the
19 German president to act as a counselor and adviser to the
20 German government. I did this when Angela Merkel was
21 chancellor, and was quite regularly meeting with her
22 directly or with the presidents.

23 So that was swapping between the years.

24 Q. Dr. Raabe, I want to turn to your work on this
25 case.

1 Are you being paid for your time working on this
2 case?

3 A. Yes, I am.

4 Q. Does the amount of money you receive depend at
5 all on what you choose to say or the outcome of this case?

6 A. No.

7 Q. Have you reviewed the '602 and '227 patents that
8 are at issue in this case?

9 A. Yes, I did.

10 Q. Do those patents relate to technologies that you
11 have studied and worked on during your career?

12 A. Yes, I did.

13 MR. KATHIR: Your Honor, at this time, we offer
14 Dr. Raabe as a technical expert in the field of metallurgy,
15 material science, and the development of steels, including
16 the fields of the '602 and '227 patents.

17 JUDGE BHATTACHARYYA: Any objections?

18 MR. MCKEON: No objection, Your Honor.

19 JUDGE BHATTACHARYYA: At this time, Dr. Raabe is
20 admitted as a technical expert in the field of metallurgy,
21 material science, and the development of steels, including
22 the fields of the '602 and '227 patents.

23 BY MR. KATHIR:

24 Q. Dr. Raabe, what are you here to testify about
25 today?

1 A. I'm here to testify about the validity of the
2 '602 and '227 patents.

3 Q. Before we get into the details of your opinions,
4 can you give us a brief summary of what your conclusions
5 are.

6 A. So my conclusions are that these two patents are
7 valid.

8 Q. Is there any background information that you
9 think will be helpful to understand how you reached your
10 opinions?

11 A. Yes.

12 I have prepared a couple of intro slides, so we
13 can walk through them.

14 Q. Dr. Raabe, what are you illustrating here on
15 slide 7?

16 A. Yeah.

17 This is a very schematic, of course, sketch of a
18 side impact scenario, which is obviously very critical,
19 accidental scenario that you don't want to go through, but
20 it happens.

21 The main task of steel, and material, and
22 automotive developers is, of course, to protect the
23 passengers in such a car. That gives you the background
24 and the urgency to do a good job along these lines.

25 Q. How are passengers protected in a car?

1 A. So you have an inner structure that you can
2 think of like a skeleton, like a high-strength, and also
3 compliant skeleton that is protecting the passengers.

4 The part of that skeleton that we also call
5 body-in-white structure is shown here on this slide,
6 highlighting, again, among the many parts that are
7 assembled for that purpose, you can see some of the real
8 high-strength steel components highlighted.

9 Q. Dr. Raabe, how are the parts of this structure,
10 the skeleton, made?

11 A. So they are made by a relatively complex
12 assembly process, often consisting of many individual
13 parts. And one of those is highlighted here, which is
14 called the B-Pillar reinforcement part.

15 Q. So using a B-Pillar, for example, can you walk
16 us through the steps of how that B-Pillar gets made.

17 A. Sure.

18 So, Your Honor, this is really a very
19 complicated process that we need today to assemble such
20 parts, and make such materials that fulfill these
21 constraints I have sketched before.

22 That starts typically by a steel coil, and the
23 steel coil is typically having a certain composition,
24 thickness, features like that.

25 They are also pre-coated along, again, certain

1 compositions, thicknesses, certain homogeneity features,
2 and so on.

3 Then you go to the next step that you refer to
4 as a blanking step.

5 The purposes here that like when we make our
6 cookies for Christmas, you cut out a certain portion of
7 that coil to get closer to the shape you finally want.

8 The next step, then, would consist in a heat
9 treatment, and also in the context of what is under debate
10 here this week, that is a very complex step.

11 So you go through an oven of relatively complex,
12 inner lining shape, temperature, and so on, temperature
13 distribution, where you have to consider, again, a couple
14 of parameters, some of which are mentioned here on this
15 slide.

16 In order to arrive at certain structure and
17 properties of your coating and material.

18 Q. So after it goes through the heating step,
19 what's the next step in the process?

20 A. Well, the next step for these specific products
21 is that you transport it further. You transfer the
22 material to a stamping operation.

23 Q. After you transfer the material to the stamping
24 operation, is that when the part is finished?

25 A. No, the part is not yet finished, then.

1 First of all, you do a couple of things at the
2 same time. When you subject that part after the transfer
3 in the oven to the hot-stamping operation, you first of
4 all, quench the part. So you very rapidly cool down its
5 temperature, depending, again, on the constraints of that
6 instrument.

7 You also, of course, adjust the shape of that
8 part that you are preparing.

9 That is finally, then, entering with the other
10 processing steps that we have already during the assembly
11 discussed this week, into the pre-finished part.

12 Q. Thank you, Dr. Raabe.

13 So the process that you just explained to us,
14 that's shown on slides 10 to 16 of the slides that you
15 prepared.

16 I want to now turn to slide 17, and turn to the
17 two patents that are at issue in today's case.

18 Can you give us a brief overview of the two
19 patents.

20 A. Yes.

21 The main context of these two patents consist in
22 equipping a high-strength steel product -- equipping a
23 high-strength steel product, if I read your face correctly,
24 I should repeat -- so adding to it. High strength-steel
25 product with a corresponding coating.

1 And that coating is supposed to have a specific
2 type of microstructure, lending it certain properties that
3 are described in these patents.

4 Q. Dr. Raabe, what are you showing on slide 18?

5 A. So that slide is showing, in principle, the
6 independent and dependent claims that are under discussion
7 here in the dispute.

8 Q. Let's turn to the question that you were looking
9 at, the validity of these two patents.

10 What did you do to figure out whether these two
11 patents are valid?

12 A. So I determined the meaning and scope of the
13 patent claims at first, and secondly, I compared the claim
14 language with the prior art in this field.

15 Q. All right. So let's start with the first step
16 of that process, the meaning and scope of the patent
17 claims. Let's go to slide 22 of your presentation.

18 How did you determine the meaning and scope of
19 the claims?

20 A. So I looked at the claim construction, and we
21 see on the left-hand side the disputed terms for the
22 construction and the agreed construction terms. And on all
23 other terms, I used the plain and ordinary meaning of the
24 terms as a person of skill in the field would adopt.

25 Q. Who is a person of skill in the art? What are

1 you showing on slide 23?

2 A. This is what I learned from the two parties.

3 On the left-hand side, we see from VinFast the
4 definition where I maybe read out not all of it, but the
5 main feature is here that that person would have an
6 undergraduate degree in material science, manufacturing
7 engineering, mechanical engineering, or equivalent
8 knowledge, training, or experience, with at least two years
9 of experience working in the field of metallurgy.

10 While the Arcelor definition deviates from it a
11 bit in terms of emphasizing that this two years of
12 experience should be in the field of steels, specifically.

13 Q. Okay.

14 So after you looked at the agreed and disputed
15 constructions, and the level of skill, what's the next
16 thing you did?

17 A. Next, I compared the claim language with the
18 prior art.

19 Q. So let's go to slide 25.

20 What did you do -- what did you consider in
21 order to compare the claim language to the asserted prior
22 art?

23 A. I considered the expert reports, the patents and
24 the file history, the asserted prior art documents, the
25 deposition documents, and their recovery response.

1 Q. Dr. Raabe, let's start with the prior art
2 references.

3 Turning to slide 26, can you briefly describe
4 the asserted prior art references that you're showing here.

5 A. Yes.

6 We see here a number of documents that we later
7 go through in a bit more detail, and that is the Cornette,
8 Engels, Lachmann, Hein, Suehiro II, Takagi, Vaissiere, and
9 the Passat documents.

10 Q. All right. So let's start with Cornette, and
11 now, we're on slide 27.

12 Can you give us an overview of the Cornette
13 reference.

14 A. Yeah.

15 Cornette is a very high-level report by Usinor
16 scientists. Usinor was one of these predecessor companies
17 from what is today ArcelorMittal. They went through a
18 couple of mergers.

19 This is a technical report paper to potential
20 customers or experts from the automotive sector. That is a
21 very, I would say, high-level paper that is trying to
22 convey opportunities associated with the use of
23 high-strength steel products in the automotive sector.

24 Q. Turning to slide 28, was Cornette before the
25 Patent Office during the prosecution of the '602 and '227

1 patents?

2 A. Yes, it was.

3 Q. Okay. Let's go to slide 29.

4 What are you illustrating on this slide about
5 Cornette?

6 A. With this slide, I wanted to highlight that this
7 paper of Cornette gives very brief view, also, into these
8 hot-stamping type of steels that we discuss here this week,
9 and show specifically in Figure 21 a very high-level, very
10 general schematic that shows heating, time range, and
11 temperature range as representative of some very general
12 description of such a process.

13 On the right-hand side shows an SEM image.

14 Q. Does Cornette tell us any compositional
15 information about that SEM image?

16 A. No.

17 Q. All right. Let's turn to slide 30.

18 Can you briefly describe the Vaissiere
19 reference.

20 A. Yes.

21 The Vaissiere reference is a kind of quite
22 similar document to the one we have mentioned before. It
23 is about the development of pre-coated boron steel for the
24 application in the automotive sector highlighting potential
25 customers more specifically.

1 Again, it uses this very nearly identical
2 schematical picture where two aspects, like time and
3 temperature, are highlighted, but it's very schematical,
4 more of a textbook character, I would say.

5 Q. Turning to slide 31, was Vaissiere considered by
6 the Patent Office during the prosecution of the two
7 patents?

8 A. Yes, it was.

9 Q. On slide 32, you're showing the cover of
10 Suehiro.

11 Can you give us an overview of that reference.

12 A. Yeah.

13 The Suehiro II document is an internal Nippon
14 Steel document. Nippon Steel was, at that time, one of the
15 biggest steel companies in the world, and so this paper
16 reports about properties of aluminum-coated steels for hot
17 forming.

18 Q. Was Suehiro II before the Patent Office during
19 the prosecution of the patents?

20 A. Yes, it was.

21 Q. So turning to slide 34, it looks like you're
22 showing an excerpt of Dr. Brown's slides on the left, and
23 an excerpt of Suehiro on the right.

24 What are you illustrating on this slide?

25 A. Yeah.

1 I picked this slide to show that there's an SEM
2 picture of a certain surface region of that material from
3 Suehiro.

4 Again, that does not tell you, maybe, in the
5 first view much about the chemical composition.

6 And then below, there's an additional figure,
7 which shows a line scan from this region, which however, is
8 outside of the claims. It's not matching the 30
9 micrometers condition from the claims.

10 Q. Let's turn to the next alleged state of the art
11 reference, the Takagi.

12 Can you briefly describe this reference.

13 A. Yes.

14 Takagi is a United States patent about coated
15 steels. This patent describes surface structures that are
16 here called outer layer, inter layer, and intermediate
17 layers of some kind.

18 Again, it does not disclose features about the
19 role or the thickness effect above 30 micrometers.

20 Q. Turning to slide 36, was Takagi before the
21 Patent Office during the prosecution of the two patents?

22 A. Yes, it was.

23 Q. Let's go to slide 37.

24 Can you give us a summary of Engels.

25 A. Engels was a proceedings paper of a group from

1 Mathias Liewald and others that work on hot forming
2 simulation, essentially, and it also contains a schematic
3 sketch about the hot forming process.

4 Q. Turning to slide 38, was Engels before the
5 Patent Office during the prosecution of the two patents?

6 A. Yes, it was.

7 Q. All right. Let's turn to slide 39.
8 What are you showing on this slide?

9 A. Yeah.

10 This slide from the paper that I also studied
11 both in the German and English variant in the documents we
12 had shows, interestingly, that these authors, although not
13 focusing on these coatings, highlighted, and we saw that
14 discussed during this week, the potential role of certain
15 parameters that are here listed, like the heating rate,
16 total processing time, et cetera, which the authors
17 emphasized to be worth being studied.

18 They did not study it, but they obviously
19 appreciated or recognized they should be considered, if you
20 want to develop that into a robust product.

21 Q. So I want to make sure I understand what you're
22 saying.

23 Engels listed all these parameters, but did the
24 Engels reference give any values for these parameters?

25 A. No, the Engels paper -- also I must make clear,

1 these were metal forming simulation experts. They were not
2 experts on these coatings. I found it just interesting
3 they did not give any ranges, no numbers, no nothing. They
4 just appreciated, you should look into this if you want to
5 turn this into a successful product.

6 Q. Okay. So I want to go to slide 40.
7 Engels did have an SEM in this table.
8 What did you make of this?

9 A. Yeah.
10 This is, again, a grayscale image of some sort
11 and some kind with, however, unknown background, how they
12 arrived at this specific structure that is shown here.
13 Then on top of it, they show a table with a few
14 chemical numbers in it, but they called that phases, and
15 not layers, and to a person with skill in the field, a
16 layer and a phase is something profoundly different.
17 They also have here five phase numbers listed,
18 so I didn't see a big vicinity to these patents.

19 Q. Okay. Let's go to slide 41.
20 Can you briefly give us an overview of the Hein
21 reference.

22 A. Yeah.
23 Hein was in the same proceedings volume,
24 published also by more application or re-entered authors,
25 as we see here. They also showed a microstructure of some

1 sort with some surface features.

2 I just found it interesting to recognize that as
3 we had before discussed a lot about the role of the
4 grayscales, also here suddenly, we see a picture that is
5 more brownish or reddish.

6 So again, I found that, as an expert, not so
7 teaching about how you might be able to arrive at such
8 structures.

9 Q. So turning to slide 42, was Hein considered by
10 the Patent Office during the prosecution of the patents?

11 A. Yes, it was.

12 Q. Now we're on slide 43.

13 Can you give us an overview of the Lachmann
14 reference.

15 A. The Lachmann from Carsten Lachmann was a
16 document that was a set of PowerPoint slides. So a deck of
17 PowerPoints that he used coming from the so-called
18 zentrallabor, that means central lab of Volkswagen, to
19 present it to welding experts, to some small group of
20 welding experts to show some features of press hardening.

21 This specific slide that I picked here is a
22 schematic, very high-level representation of an oven and a
23 temperature.

24 Q. Was Lachmann before the Patent Office during the
25 prosecution of the two patents?

1 A. Yes, it was.

2 Q. Moving to slide 45, can you give us an overview
3 of the Passat reference.

4 A. Yeah. The Passat was an earlier car, which was
5 on the street, and we discussed a lot -- heard a lot about
6 this vehicle during this week.

7 So we see here a specific portion of that side
8 impact region called pillar B-Pillar with a couple of areas
9 indicated by a pen, obviously.

10 Q. Was information about the Passat before the
11 Patent Office during the prosecution of the two patents?

12 A. Yes, it was.

13 Q. All right. So let's actually turn to the
14 Passat.

15 So now we're on slide 47. Can you give us an
16 overview of what VinFast is asserting about the Passat.

17 A. Yeah.

18 Here, the topic is that there are a few claims
19 allegedly anticipated by the Passat, and maybe I don't need
20 to read out all of them. They are shown here on the slide.
21 So the claims under dispute in the context of this vehicle.

22 Q. So what did you do to investigate whether the
23 Passat anticipated the asserted claims in this
24 investigation?

25 A. I looked at the protocols, how the Passat was

1 tested, how this material was tested. Then I also looked
2 at how it was analyzed.

3 Then I pursued the question whether VinFast was
4 able to show that the Passat is disclosing the claimed
5 layers or not, and hence, whether the Passat is enabling.

6 Q. Okay. So let's start with the first question
7 you looked at. How is the Passat tested. Let's go to
8 slide 50.

9 What are you showing here?

10 A. This is, again, a slide that is related to what
11 has been under discussion during this week already. As a
12 person of skill in the field, it appeared to be a rather
13 unexplained methodology, and again, I would not read all of
14 the numbers, and coupons that have been discussed here on
15 this slide.

16 The take-home message for a person of skill was
17 that it was not so clear to follow what reasoning or
18 methodology was behind finally showing only a few of these
19 results at the end.

20 Q. So, Dr. Raabe, just to break down sort of the
21 text that you are showing on this slide and what you just
22 said, do you have a picture illustrating what's being
23 depicted on this slide?

24 A. Yeah. On the next slide, that is a little bit
25 more worked out.

1 We can see here that on the left-hand side,
2 there is a column with many coupons that have been labeled,
3 and then they were shipped and obviously received, and that
4 was already a sub-group of these originally labeled ones.

5 Then, again, a subgroup of that was being
6 tested, and imaged, and finally, on the right-hand side, we
7 see a column with a few specimens that finally were
8 reported, and that's what I meant by this unexplained
9 methodology, what rationale might have been behind that.

10 Q. When you looked at this methodology, what did
11 you conclude?

12 A. So my conclusion was that this was not an
13 adequate testing protocol.

14 Q. Okay. So let's go to the next question that you
15 looked at. How was the Passat analyzed. Let's go to slide
16 54.

17 What did your analysis of how VinFast analyzed
18 the Passat show?

19 A. Yes.

20 So obviously, they looked at SEM images of the
21 types that we see here, and that analysis, however, to
22 match -- anticipate those claims was, to a person of skill
23 in the field, not very reliable.

24 Q. Dr. Raabe, I just want to level-set about what's
25 on this slide, on slide 54.

1 So on the top, I'm seeing an SEM image, and then
2 on the bottom left, I'm seeing another image. On the
3 bottom right, I'm seeing a line scan.

4 That line scan, which image does that relate to?

5 A. So the line scan, we see on the right bottom
6 part pertains to the left-hand side SEM pictures. That
7 picture on the bottom.

8 Q. Okay.

9 So when you said the analysis wasn't reliable,
10 you can give us an example of that, using the line scan?

11 A. Yes.

12 We followed the discussion yesterday also with
13 Dr. Bradley on the same material, and as a person of skill
14 in the field, I was a bit surprised by the more or less
15 arbitrary setting of associating certain regions of that
16 line scan with layers.

17 Dr. Bradley had mentioned he would pick the
18 infraction points to make these -- these lines, these
19 dotted lines to tell one layer, in his view, from the
20 other.

21 Then we see on the outermost side, these rule
22 with exploiting the inflection points of the chemical
23 analysis in the EDS line scans was broken, and the line was
24 just set somewhere in the middle.

25 So that told me as an expert in the field, I did

1 not really understand what the rationale behind this
2 association of EDS and layer definition was made.

3 It was unclear to me.

4 Q. Were you here yesterday during Dr. Bradley's
5 testimony?

6 A. Yes, I was.

7 Q. Did you hear any explanation from him as to why
8 he skipped one inflection point and drew the line at a
9 subsequent inflection point?

10 A. No, I did not.

11 Q. Okay.

12 So after you looked at how VinFast conducted its
13 analysis of the Passat, what was your conclusion about
14 VinFast's analysis?

15 A. I came to the conclusion that this is a flawed
16 analysis. Of the material.

17 Q. So now let's look at the next question that you
18 looked at. This is on slide 56. Has VinFast shown that
19 the Passat discloses the claimed layers.

20 So turning to slide 57, what are you showing
21 here?

22 A. Well, this slide just reminds us all of -- that
23 the independent claims require layers with different
24 compositions, and that is highlighted on this slide.

25 Q. Turning to slide 58, are these the same three

1 images that we just saw a few slides ago?

2 A. Yes.

3 Q. Just to make sure we're all on the same page,
4 that line scan, which -- can you remind us, does that
5 relate to the top SEM or the picture on the left?

6 A. Just to refresh our memory, that line scan we
7 see here relates to the bottom SEM picture on that slide.

8 Q. Okay.

9 So when you looked at what VinFast did to try to
10 show that the Passat discloses the claimed layers, what did
11 you find?

12 A. I saw, then, I -- I have taken a look at these
13 SEM pictures that is shown here in the top row with the
14 steel and some layers indicate by this yellow ink font, and
15 I found that not convincing.

16 Q. Dr. Raabe, I want to -- I guess, explore that.
17 Let's take layer 3 as an example. That's the intermetallic
18 layer, do I have that right?

19 A. Yes, I see it. Yeah.

20 Q. So why did you find it not convincing that
21 VinFast showed that layer 3 in this image meets the
22 intermetallic layer limitations of the claims?

23 MR. MCKEON: Your Honor --

24 (Clarification requested by the Realtime Stenographer.)

25 MR. MCKEON: We have a problem with the expert

1 report on this question. Not in the expert report. So he
2 can't testify about this.

3 MR. KATHIR: Your Honor, Your Honor I didn't
4 mean to interrupt.

5 Your Honor, Dr. Raabe testified to this about
6 this at length in deposition. I'm happy to give you the
7 excerpts, but really starting on page 268, going on to 269,
8 270, 271, 272, counsel for VinFast asked him several
9 questions about layer 3 specifically, the intermetallic
10 layer, and why or why not it was disclosed by the Passat.

11 I'm happy to pass up transcripts, if you would
12 like to take a look.

13 JUDGE BHATTACHARYYA: I want to hear from
14 Mr. McKeon as to his view of the deposition transcript.

15 MR. MCKEON: Yeah, Your Honor, I -- if I can get
16 the ELMO here and show you.

17 We never got an opinion from Dr. Raabe in this
18 case that the -- the Passat part doesn't practice the
19 claims. We did not. And in depo, we explored that with
20 him, and this is what his testimony was.

21 "That was my point number one, but I give you
22 that that I did not totally say it could not be an
23 intermetallic layer. It could. I cannot say it from this
24 data, but I'm also saying it's definitely not. But my
25 doubt comes a little bit from another side also."

1 In other words, he's like -- we got no opinion
2 that it's not there. And that doesn't cut it.

3 JUDGE BHATTACHARYYA: Okay. Mr. Kathir, is this
4 the portion of the deposition transcript you're relying on
5 or is there --

6 MR. KATHIR: That's part of it, but there's more
7 surrounding that, but just to be clear, our -- what
8 Dr. Raabe is testifying to is that VinFast hasn't met its
9 burden to show that these claims are met by the Passat.
10 Even this excerpt is fully consistent with what he just
11 testified to and what he is about to testify to. But
12 certainly he testified to more than these five lines that
13 Mr. McKeon has underlined.

14 JUDGE BHATTACHARYYA: We are about -- it's about
15 time for the afternoon break, so if you could provide a
16 copy of the transcript to me, and let me know what portions
17 of the deposition I should be looking at, that would be
18 helpful.

19 MR. KATHIR: Yes, may I approach?

20 JUDGE BHATTACHARYYA: Yes.

21 Can you give me page cites as well.

22 MR. KATHIR: Yes, Your Honor.

23 So I have page 268. Let me just give you the
24 broader colloquy, and then I have specific excerpts within
25 these pages. It's really 268 to 276, but I can give you a

1 specific lines within that set of pages as well.

2 JUDGE BHATTACHARYYA: Okay.

3 MR. MCKEON: Your Honor, just for the record, I
4 read from 284, 11 to 17.

5 JUDGE BHATTACHARYYA: 284.

6 MR. MCKEON: 284, 11 to 17, where we got the
7 waffling from Dr. Raabe.

8 JUDGE BHATTACHARYYA: Okay.

9 MR. KATHIR: Do you want the specific excerpts?

10 JUDGE BHATTACHARYYA: Yes, please.

11 MR. KATHIR: Okay I have 268/16 to 22, 269/2 to
12 11, 269/12 to 25, 270/1 to 10, 270/17 to 271/18, 271/19 to
13 273/12, 274/17 to 275/11.

14 I think that's it as it relates to this issue.

15 JUDGE BHATTACHARYYA: Can you tell me, just give
16 me a summary of what you believe this testimony shows.

17 MR. KATHIR: Absolutely.

18 So what Dr. Raabe will testify to is that
19 VinFast at the end of the day hasn't met its burden to show
20 that the claimed layers in that SEM meet the limitation.

21 For example, looking at layer 3, which they're
22 purporting to say is the intermetallic layers of the
23 claims, he can't tell from that SEM that that layer meets
24 the claims, because there are defects in that SEM, which
25 impacts whether or not, specifically, the compositional

1 elements of the claims are met.

2 And VinFast just hasn't put forward enough
3 evidence to -- because of those defects to show that the
4 compositional elements of the claims are met.

5 JUDGE BHATTACHARYYA: All right. Thank you.

6 Did you want to provide a brief response,
7 Mr. McKeon, or should we take our break, and you can
8 provide it later?

9 MR. MCKEON: One moment, Your Honor, please.

10 Sorry about that, Your Honor.

11 We just think if you go to the deposition to the
12 pages that have been cited, and you end up to the citation
13 that we -- there was a colloquy over many pages, and the
14 page 284, that we noted, you get to the penultimate
15 opinion, which is -- I don't know.

16 JUDGE BHATTACHARYYA: Okay.

17 MR. MCKEON: Therefore, we don't think that's
18 enough. And obviously the fact it's not in the expert
19 report. We are talking about the deposition already sort
20 of highlights the problem.

21 JUDGE BHATTACHARYYA: All right. Thank you.

22 We're on break for 15 minutes.

23 MR. MCKEON: Thank you, Your Honor.

24 (A recess was taken at 3:17 p.m., after which
25 the hearing resumed at 3:32 p.m.)

1 JUDGE BHATTACHARYYA: All right.

2 So regarding the deposition testimony, from what
3 I can see, Dr. Raabe testified at his deposition that he
4 wasn't ruling out it's an intermetallic layer. He wasn't
5 completely sure.

6 He had -- he thought he might need more
7 information, and he thought he might have some doubts.

8 So as long as he's testifying as to that
9 opinion, and that any specifics he offers in support of
10 that view were specifically described in his deposition,
11 then that is fine, but he shouldn't go beyond that
12 testimony.

13 MR. KATHIR: Yes, Your Honor.

14 My understanding, my anticipation is we will be
15 within the scope of what you just described.

16 JUDGE BHATTACHARYYA: Mr. McKeon, if you feel
17 like he is going beyond the doubts, and further information
18 that he talked about during his deposition, you may file a
19 motion to strike later, but I don't want to take up more
20 time at this time.

21 MR. MCKEON: You don't want me to object at this
22 point if --

23 JUDGE BHATTACHARYYA: You should object, but we
24 will move on. I won't resolve the objection.

25 MR. MCKEON: Got it. Thank you, Your Honor.

1 Appreciate the clarification.

2 JUDGE BHATTACHARYYA: Thank you.

3 BY MR. KATHIR:

4 Q. Can we put up slide 58, please.

5 Dr. Raabe, before the break I was asking you
6 about whether VinFast had shown that the Passat discloses
7 the claimed layers.

8 I want to use layer 3 as an example, or what's
9 marked as layer 3 and the SEM on top.

10 Can you explain what you saw during your review
11 of layer 3.

12 A. Layer 3, I did not see enough evidence or hints
13 that it would meet the terms of the claims in terms of
14 being an intermetallic layer.

15 Q. Dr. Raabe, why is it that you don't have enough
16 information, or you didn't see enough information to
17 determine whether layer 3 does or does not meet the claimed
18 intermetallic layer?

19 A. So the SEM, as we see it here, has additional
20 horizontal features in it, and other microstructure
21 features that shed some doubt on whether this matches the
22 claims.

23 Q. Dr. Raabe, I just want to understand that --
24 what you're saying.

25 When you're referring to horizontal features,

1 are you referring to the -- for example, the horizontal
2 crack that we see in layer 2?

3 A. Yes.

4 Q. So I want to understand, why is it that
5 something that appears in layer 2 would impact your ability
6 to determine whether layer 3 meets the intermetallic layer
7 limitations of the claim.

8 A. Okay.

9 So the claims and the patent is very specific
10 on -- that these microstructures are created by a process
11 called interdiffusion. And interdiffusion refers to the
12 transport of atoms.

13 When you have these features, as we see them
14 here in the micrograph, then that interdiffusion might be
15 altered from the intention as sketched in the claim.

16 That brought me to my doubts whether this is
17 really reproducing the claims.

18 Q. Okay, Dr. Raabe, I want to turn now to slide 59.

19 So what did you determine as to whether VinFast
20 showed that the Passat discloses the claimed layers?

21 A. So the conclusion is that VinFast could not show
22 that the Passat is disclosing the claimed layers.

23 Q. All right.

24 Well, let's turn to the next question you looked
25 at. This is on slide 60, "Is the Passat enabling?"

1 A. The conclusion from that is that the Passat is
2 not enabling, and it is also built on the understanding
3 that when you take such a complex piece, as we have
4 discussed it with these structured features that we
5 discussed, does not -- in view of the enormous complexity
6 of this manufacturing, that we have discussed several times
7 this week, allows you not to reproduce, you know, the
8 claims, and the patent.

9 That is much more complex. It's not just like
10 adding a couple of legal stones together. It's much more
11 nonlinear in nature.

12 Q. I just want to understand what you're saying,
13 Dr. Raabe.

14 So someone of skill in the art looking at this
15 B-Pillar you're showing on the left of the slide on slide
16 61, looking at that, having the information contained in
17 that, would they be able to achieve the claimed invention?

18 A. No.

19 With looking at such a B-Pillar material like
20 here from the Passat, you are not able to reconstruct this
21 material or recreate this material in a way as described in
22 the claims as a person of skill in the field.

23 Q. Would someone of skill in the art be able to get
24 to the claimed invention without undue experimentation?

25 A. No.

1 You would require massive experimentation --
2 massive additional experimentation to arrive at the claims.

3 Q. Okay.

4 So I want to now turn to slide 62.

5 What's your conclusion about whether the Passat
6 is enabling?

7 A. The conclusion from that is that the Passat is
8 not enabling.

9 Q. All right.

10 So after you looked at these four questions, and
11 reached your opinions about each of the questions, what was
12 your ultimate conclusion about the Passat that you're
13 showing on slide 64?

14 A. The conclusion is that the Passat does not
15 anticipate.

16 Q. Okay, Dr. Raabe, let's turn to the next asserted
17 prior art reference. This is Lachmann.

18 What are you showing on slide 65?

19 A. This document from Carsten Lachmann from
20 Volkswagen research was brought forward to allegedly
21 anticipate the claims that are listed here.

22 It also was brought forward to dispute the
23 obviousness by combining Lachmann to another piece from
24 Laurent. And likewise, it was a dispute about the
25 obviousness of arriving at these claims, allegedly, by

1 combining Lachmann to Cornette.

2 Q. Let's go to slide 66.

3 What did you do to figure out if Lachmann
4 discloses these claims?

5 A. So I looked at several items in order to
6 investigate these questions, and form an opinion, and that
7 pertains to the question whether there's, at all, any
8 enabling behind Lachmann itself.

9 And also to the points we get to, namely,
10 whether there are any motivations to do so.

11 Q. All right. So let's go to slide 67.

12 Is Lachmann enabling?

13 A. In my view, Lachmann is not enabling, and also,
14 to a person of skill in the field, I think it would be
15 highly non-plausible that Lachmann would be enabling.

16 Q. Dr. Raabe, I want to understand how you got to
17 that determination a little bit more.

18 What I'm seeing on the screen, on the top, looks
19 like the process, and I'm seeing something in the middle
20 that says, "Heating furnace 900 to 950 -- sorry, 950
21 degrees C." (As read.)

22 How come that's not enough?

23 A. Yeah.

24 That is a slide from this slide deck from
25 Carsten Lachmann, and as you described it, that is -- I

1 would say, it is a textbook level, you know, very general
2 description of a possible process for such products can
3 be -- may be made, but without specifying anything of that
4 complex cooking recipe that you would need to arrive
5 anywhere near to the claims.

6 So it does not enable you to reproduce anything
7 of what is in the claims.

8 On the left-hand side, the bottom side, we also
9 see something like temperature curves, and at first look,
10 they might, you know, look like, oh, there's a kinetics or
11 temperature, time, in that slide, but that relates to the
12 base steel as it is quenched, not to the coatings as
13 required by the claims.

14 So all of this material would not enable you to
15 arrive at the claims.

16 Q. Okay, Dr. Raabe, so to understand what you just
17 said, are you saying, so all of the information in the
18 bottom left slide, none of that relates to the heating step
19 of that process you've described?

20 A. Exactly. That is what I am stating.

21 So that is a slide that has complex diagrams on
22 it, but these diagrams have nothing to do with what is
23 required by the claims, because one is just, you know, a
24 description of the ferritic-perlitic microstructure,
25 ferritic-perlitic, like in pearl.

1 And the second slide shows the quenching, the
2 cooling of the base material that gives you information
3 whether you are able to arrive at a martensitic
4 microstructure.

5 The third diagram is what we call a
6 stress-strain diagram, that is simply the testing of the
7 strengths of this material.

8 So it has nothing to do with the coating of the
9 claims, has nothing.

10 Q. So out of all of the information that's shown
11 here, on the top slide, and the bottom two slides or
12 excerpts, what of that information actually relates to the
13 heating step, what goes on in the oven?

14 A. So in the first slide, on top, you see that --
15 as we have discussed before, that very schematical sketch,
16 but that is, you know, lacking any of the intricate
17 processing details that you would require and as described
18 in the patents.

19 On the right-hand bottom side, you see, again,
20 certain microstructure features in the SEM image, and you
21 also see that scan close to it.

22 But as we have discussed in part before, that
23 does not enable you or bring you in a position to arrive at
24 these claims because for that, you need to have that
25 cooking recipe, the details of the process.

1 Q. For that heating step, what goes on in the oven,
2 does Lachmann disclose anything besides the temperature of
3 the furnace?

4 A. No.

5 It is like you just observed, it is giving the
6 temperature of the furnace, and that's all.

7 But we learned there are so many further
8 parameters that we discussed over this week, and I showed
9 on one of my slides before, such as the required
10 information about the heating rate, or you would need
11 additional information to adjust all of these processes to
12 the thickness of the material. And many other aspects like
13 the dew point, the chemical composition.

14 All of these things act together to create this
15 really complicated layered microstructure and if you do not
16 have access to these parameters, then you cannot reproduce
17 such a microstructure robustly.

18 Q. Is that what you are illustrating on slide 68?

19 A. Yes, indeed.

20 That's similar to the sketch that I used before.
21 When you had only this Lachmann slide or this Lachmann
22 slide deck, this information, you would not be able to
23 reproduce this claim as a person of skill in the field.

24 Q. Okay.

25 So what's your ultimate conclusion about whether

1 Lachmann is enabling?

2 A. Lachmann is not enabling.

3 Q. Let's go to the next question you looked at,
4 whether there's a motivation to combine.

5 What are you showing on slide 71?

6 A. Yeah, it was suggested or encouraged by VinFast
7 to look at combinations of the document by Lachmann and by
8 Cornette pertaining to these claims that are listed here on
9 the left-hand side. And I would not read out all of them
10 to you, but the punch line is that they relate to the
11 thickness in terms of micrometers to the pre-coated
12 material.

13 So it appears that VinFast suggests that you
14 just take the Lachmann slide deck, and combine it, in my
15 view, a little bit arbitrarily to that document of Cornette
16 to bring these two aspects together.

17 But I had some doubts on the motivation behind
18 that, because as I described before, that is such a complex
19 process, and these elements of the process are not LEGO
20 toys you put together. I would not find that very
21 convincing or motivated to do.

22 Q. I want to go into a little more details about
23 what you just said, but first, let's go to slide 72, and
24 let's talk about the Cornette reference.

25 Is the Cornette reference itself enabling?

1 A. The Cornette reference, to a person of skill in
2 the field, is for sure not enabling because we have, on the
3 left-hand side, as we mentioned briefly before in Figure
4 21, the very high-level, very general sketch of that
5 process, that lacks all the fine details such as the
6 heating rate or the dependence on thickness and other
7 information to reproduce these microstructures without
8 undue further experimentation.

9 On the right-hand side, you see, again, an SEM
10 image without any quantification of the chemical species,
11 chemical composition, and so on.

12 So that is, for sure, not enabling.

13 Q. So, Dr. Raabe, I want to turn to slide 73, this
14 is an excerpt from Respondents' opening.

15 I just want to understand, you know, as someone
16 not familiar with metallurgy, you know, this slide says --
17 the title of this slide says, Cornette has the process
18 parameters.

19 Why aren't the parameters listed there enough?

20 A. Yeah. It's a little bit similar to what we
21 discussed before. You have here a very schematical sketch
22 that even lacks any information about what is specified and
23 required in the claim to go through these intricate process
24 to come anywhere near to the reproduction of these layered
25 microstructures.

1 What I also found, as a person of skill in the
2 field, or like maybe many colleagues would see it also,
3 when you draw your attention to the paragraph in the middle
4 of the right-hand side, then this paragraph, and I read it
5 out as a quote to you, says, "Mechanical properties after
6 hot forming process are not guarantied by Usinor."

7 That sentence means, don't trust my properties.
8 That's like if you go to a restaurant with a super fancy
9 chef, and he comes up with a super recipe, and says, please
10 don't eat it.

11 That doesn't line up that, obviously, they don't
12 trust their own product, which means or tells me there
13 obviously is still a lot that has to be studied further to
14 arrive at what we nowadays have in the claims of '602.

15 Q. Dr. Raabe, let's go to slide 74, and talk about
16 whether there's a motivation to combine Lachmann and
17 Cornette.

18 What are you showing here?

19 A. Yeah.

20 There was a suggestion to combine Lachmann and
21 Cornette, and I don't see, again, a motivation to do so
22 because, again, you cannot just isolate and pick a specific
23 attribute without a very well-guided hint to do so, here by
24 selecting the interdiffusion layer, without impacting the
25 entire structure.

1 So when, as we heard during this week, you alter
2 one of these features, like whatever you pick, the
3 thickness of the coating or these features in the furnace
4 and so on, then you are, at the same time, also potentially
5 changing many other aspects during that downstream process
6 of that process development.

7 So I think there's no motivation whatsoever to
8 just pick out this one single piece, and say, that's a
9 natural combination.

10 So I saw no motivation here.

11 Q. Let's go to slide 74.

12 Does Cornette describe any benefit to focusing
13 on the interdiffusion layer?

14 A. So that is, again, a similar case. I found it
15 not convincing, and I saw no motivation to modify the
16 interdiffusion layer, which is referred to as layer (a),
17 because Cornette does not at all discuss it.

18 What Cornette is discussing is an average layer
19 thickness and what it might be linked to prior to any of
20 the downstream processing.

21 So there is no hint why anybody would come to
22 the idea to combine the two. There's no motivation.

23 Q. All right. So let's go to slide 76, and talk
24 about the other proposed combination combining Lachmann and
25 Cornette.

1 What is Lachmann lacking that -- why is VinFast
2 proposing combining Lachmann and Laurent?

3 A. That argumentation was, for me, very hard to
4 follow or to understand, because when we look at the
5 Lachmann documents, then I did not find any statement from
6 Carsten Lachmann about the deficiency of the steel.

7 So when you would say, oh, look, I made this and
8 this type of experiment, and found these and those types of
9 features, but my steel should be a different one, the base
10 steel should be a different one. There might be a hint,
11 but this hint, we don't find with Lachmann.

12 So this seems, to me, that somebody made the
13 suggestion and say, oh, in the claim, there's a
14 titanium-to-nitrogen ratio, let's just pick it from the
15 work of Laurent, and bring these two together, but again,
16 that was not plausible, to me, to do so.

17 Q. Okay. So let's jump to slide 78.

18 So what's your opinion about whether there is a
19 motivation to combine Lachmann and Cornette, or Lachmann
20 and Laurent?

21 A. There is none.

22 Q. What's the next thing you looked at?

23 A. The next item I looked at, are there any
24 objective indicia for non-obviousness?

25 Q. All right. So let's turn to slide 80.

1 What are you showing here?

2 A. This is from Dr. Pascal Drillet's trial
3 testimony.

4 I maybe should read out the first question to
5 you, which is inked here in yellow.

6 "... after your discovery of the significance of
7 those four layers, and the process parameters by which one
8 could reliably get those, what happened to the sales of
9 Usibor?" (As read.)

10 And when we only take the punch line from the
11 answer from Dr. Drillet, so he said, "So we had a huge
12 increase involvement of the PHS," which stands for
13 press-hardened steel, "on body-in-white."

14 When we draw our attention to the right-hand
15 side figure, we can realize that, indeed, all these sales
16 numbers were not convincing when it comes to the bare
17 material, or to the galvanized material, that's another
18 surface-coated quality that they obviously sold, but the
19 numbers for the aluminum silicon-coated material pertaining
20 to these claims, obviously, was ramping up substantially.

21 Q. Okay. Let's go to slide 81.

22 So you just talked about commercial success.

23 Did you look at long-felt need and praise, or
24 unexpected results?

25 A. Yes.

1 Also through, I think, my very long experience
2 working with automotive people in conjunction with wanting
3 better materials, and better steel, specifically, with all
4 these other features, like weldability and so on, there is
5 a big permanent need to get such a product in your hand and
6 in your car, because it has so many benefits that we have
7 discussed during this week.

8 So I found that a very convincing point.

9 Q. How about unexpected results?

10 A. The unexpected results is, I think, what we
11 could wisdom during this week, during the discussion,
12 during Dr. Drillet's testimony, nobody was able to do
13 something like that. I think there was so many benefits
14 coming out of that.

15 So also, yes. Highly unexpected results. Very
16 valuable product.

17 Q. Dr. Raabe, let's go to slide 82.

18 So what was your opinion about objective indicia
19 of non-obviousness?

20 A. That there are objective indicia for
21 non-obviousness.

22 Q. So after you looked at these three questions,
23 and answered them, on slide 84, what did you ultimately
24 conclude about Lachmann?

25 A. My conclusion is that Lachmann does not

1 anticipate, and Lachmann in combine with Laurent or
2 Cornette does also not rendered obvious.

3 Q. So now let's turn to slide 85, and Respondents'
4 assertion that the patents are invalid based on domestic
5 industry.

6 Can you give us just a high-level overview of
7 what you're showing here.

8 A. Yes.

9 That was the alleged invalidity argument based
10 on domestic industry prior knowledge, and we see here a
11 couple of these companies listed, which already were
12 discussed during this week.

13 And I could see, however, nowhere during the
14 discussion around the material even a specification as to
15 which of these claims were allegedly anticipated, so I --

16 Q. Okay. So I want to go to slide 86, and I want
17 to break this group of four companies up into really two
18 categories. I want to first start with Multimatic, Simwon,
19 and Cleveland-Cliffs.

20 What did you determine about what Respondents
21 said about these three companies, and whether anything
22 they've done invalidates the asserted patents?

23 A. When we, again, bring to our recollection this
24 enormous complexity, and how these parameters that you need
25 to identify, like the patent claims are doing, to produce

1 these microstructures, and hence, this steel with these
2 specific properties, then I found no hint anywhere in the
3 documents that this domestic industry had knowledge about
4 this complexity, or documented this anywhere, before the
5 patents had arrived.

6 So I think there was no prior knowledge along
7 this direction in the domestic industry before the patents.

8 Q. Dr. Raabe, were you here today to hear
9 Dr. Brown's testimony about these three companies?

10 A. Yes, I did.

11 Q. Did Dr. Brown provide any evidence about what
12 these three companies, specifically these three companies,
13 were doing before the patents were invented?

14 A. No, he did not.

15 Q. Okay. Let's turn now to this Magna documents,
16 and I think this text is small enough that we don't have to
17 go on the confidential record.

18 What are you showing here, Dr. Raabe?

19 A. This is a so-called control plan by Magna, but
20 Magna here in the US.

21 Q. I noticed you've enlarged two dates.

22 What are these dates?

23 A. Well, the control plan, there's original date
24 from 2004, and then there's a revision date from 2006,
25 highlighted.

1 Q. Is Dr. Brown or the Respondents relying on this
2 document to assert that Magna -- what Magna was doing
3 invalidated the asserted patents?

4 A. When I followed the documents and the discussion
5 this week, I had the impression that the assumption was
6 that the knowledge pertaining to the patents was in the
7 world before the patents were released.

8 But I had also the impression that this
9 ignored -- that this control plan was revised after the
10 patents had been released. That was 2006.

11 Q. Well, I want to, I guess, understand that last
12 statement that it ignores that this document was revised
13 after the patents were released. It looks like a revision
14 date of August 22nd, 2006.

15 So let's go to slide 88.

16 A. Yeah, for trying to better understand this
17 process, and the temper of the evolution behind it, I went
18 to the document, to the control plan as it was discussed in
19 the testimony of Mr. Webb, who was a manager in that plant.

20 We see here from his report that he explained,
21 first of all, what at all such a control plan is, what you
22 use it for, and essentially, the punch line is that this is
23 typical of such a production site where you document also
24 for the workers, for the production chain, exactly what you
25 should do and what you should not do.

1 Then it was also made clear in that document by
2 Mr. Webb that in 2006, this plan was changed after the
3 patents had arrived. And hence, something must have been
4 changed quite profoundly, otherwise for very moderate
5 things, you would not have this entering into your control
6 plan, and the associated documents.

7 Q. Now, I want to, I guess, read what you have
8 highlighted here from Mr. Webb.

9 And I'm quoting, "But as with the control plan,
10 whenever we have engineering changes or customer
11 engineering changes, process changes of any kind, we have
12 to re-release because it's a controlled document."

13 Then I'm skipping ahead to the second highlight.

14 "... each date has a new revision date -- each
15 revision has a new revision date."

16 Did that testimony inform your analysis of this
17 document?

18 A. That testimony told me when there is obviously
19 now a visible revision date in 2006, that something along
20 that content that is underlined here in yellow ink must
21 have happened, so they had a good reason, obviously, to
22 change their plan.

23 Q. Dr. Raabe, were you able to -- actually let me
24 back up.

25 Did Dr. Brown or VinFast explain what with

1 changed between the original and revision date?

2 A. No.

3 Q. Were you able to figure out what changed between
4 the original and the revision date?

5 A. So I looked at the available material, and it
6 was when you turn your attention to the bottom part of this
7 document, you see in the question, does this document --
8 can you tell what was changed in it from the original date
9 to the new, to the so-called revision date? The management
10 says that not by looking at the document.

11 So I found it very difficult to find out what
12 exactly was changed. I could only infer that the change
13 must have been so eminent, so important as we discussed in
14 the upper portion of this document, that it had to be
15 released in the form of a new revision date.

16 Q. Dr. Raabe, based on your review of that control
17 plan and the deposition testimony of Mr. Webb, were you
18 able to determine what Magna was doing on the original date
19 of August 26, 2004?

20 A. No, I found that practically impossible to make
21 such a statement, and obviously, the manager himself could
22 not even say that.

23 Q. Okay. Let's turn to slide 89.

24 So what did you conclude about this Magna
25 document?

1 A. The clear conclusion was that the Magna -- this
2 revision came after the patents were out.

3 Q. All right. Let's turn to slide 90.

4 So what was your ultimate conclusion about the
5 Respondents' theory that the domestic industry products
6 invalidate the asserted patents?

7 A. So my conclusion is that the DI direct products
8 do not anticipate.

9 Q. All right, Dr. Raabe, can you summarize your
10 opinions in this case.

11 A. The summary from what I laid out here is that
12 the two patents, '602 and '227 are valid.

13 MR. KATHIR: All right. Thank you. I pass the
14 witness.

15 JUDGE BHATTACHARYYA: Thank you.

16 MR. MCKEON: Your Honor, may I proceed?

17 JUDGE BHATTACHARYYA: Yes, you may.

18 CROSS-EXAMINATION

19 BY MR. MCKEON:

20 Q. Good morning, Dr. Raabe. Or good afternoon,
21 actually, Dr. Raabe.

22 A. My next morning, actually.

23 Q. Yes. It has been an eventful week. My name is
24 Mike McKeon, it's nice to see you.

25 A. Nice to see you, too.

1 Q. Now, as part of your work in this case, of
2 course, you testified that you reviewed the patents and the
3 claims; isn't that right?

4 A. Yes, I looked into the patents and the claims,
5 yes, I did.

6 Q. Okay.

7 It is your opinion that the main spirit of the
8 '602 and the '227 patents is that you achieve a reliable,
9 layered structure in a reproducible way; correct?

10 A. That is what I said in my deposition and my
11 report, yes.

12 Q. It is your opinion that the ability to produce
13 the steel in a reproducible way is required for the
14 mass-producing market; correct?

15 A. So that is what I said in my documents before.
16 It is important that you adhere to these claims to arrive
17 at such a reproducible way, yes.

18 Q. On the flip side of that, if you are able to
19 produce the layered structure of the claims, but you can't
20 do it in a reproducible way, then you think that it is not
21 covered by the patent claims; correct?

22 A. That's not what I said, no.

23 Q. So you agree, then, even though somebody can't
24 do it in a reproducible way, but they can do it one time,
25 and they got the four layers; you believed that's covered

1 by the claims; correct?

2 A. No, I disagree.

3 Q. Another thing that's important to you is that
4 you read the claims in the context of a set of processing
5 parameters; correct?

6 A. So it's not about me. It's that the claims and
7 the patents are very specific to adhere to certain
8 processing features.

9 Q. Okay.

10 So but you believe the claims, when you read the
11 claims, you're saying that the claims require a set of
12 processing parameters; correct?

13 A. When a person of skill in the field is reading
14 those claims, and the patents in their complete context,
15 then it is clear that arriving at these layers requires to
16 adhere to certain processing parameters.

17 Q. Okay.

18 Well, let me just put a fine point on that. My
19 question is very specific. In order to infringe the
20 claims -- strike that.

21 In order for a reference to be covered by the
22 claims, it is your view that you have to know what the
23 process parameters are of the prior art in order for the
24 end result to be covered by the claims; correct?

25 A. That was a very long question. Can you maybe --

1 Q. Let me break it down.

2 A. Because I must also apologize a little bit. I'm
3 not a mother tongue speaker, so I try to follow as good as
4 I can. It can be good --

5 Q. That's fair.

6 A. -- if the question is a bit more specific.

7 Q. I will reword it. I want to make sure you have
8 a clear question. That was a bad question. So let me
9 reword it.

10 You believe, for example, a process parameter is
11 the heating rate; isn't that right?

12 A. Heating rate is a processing parameter.

13 Q. The set of processing parameters is how the
14 patents arrive at the layered structure; correct?

15 A. The patent makes a very clear conception about
16 the link between these layered microstructures, and the
17 processing parameters that lead to it.

18 Q. You believe that a person of skill in the art
19 would find it important to specify the processing
20 parameters to make these layers reproducible, and
21 mass-market capable; correct?

22 A. Sure.

23 You need to adhere to these processing
24 parameters as described in the patent to arrive at the
25 targeted layer structure.

1 Q. To know whether the claimed layered structure is
2 satisfied, you believe that you need to know the process
3 parameters for creating the layered structure; correct?

4 A. If I understand the question correctly, I would
5 repeat my answer before that, yes, there is in the patents
6 a clear link between the desired surface microstructures
7 and the processing parameters.

8 Q. Let me get your deposition, sir, at 104/17 to
9 105/8. Let me get Laptop 3, here.

10 Let me read your deposition testimony.

11 So:

12 "Question: If I -- if we have the layered
13 structure, but we know the layered structure is satisfied,
14 do I need to know the process parameters for creating the
15 layered structure is to determine whether the claims are
16 satisfied?

17 Answer: So the way how I read this patent, and
18 the claim to which you refer to is that the inventors are
19 very clear that there is a connection between this result
20 and the adherence to certain processes.

21 That is the idea of this patent. And that means
22 I need to follow certain protocols of making the product to
23 make sure I have these layers as a result of my product."

24 Is that your deposition testimony; did I read
25 that correctly?

1 MR. KATHIR: Objection, Your Honor. Improper
2 impeachment.

3 JUDGE BHATTACHARYYA: The objection is
4 overruled.

5 BY MR. MCKEON:

6 Q. Did I read that correctly, sir?

7 A. So just one step back, if you please allow us.
8 So you highlight here a portion of the depo, but I think
9 you were reading much more text; right? So... I just want
10 to understand the process.

11 JUDGE BHATTACHARYYA: So the question right now
12 is whether the deposition testimony was read correctly.

13 THE WITNESS: Yes. Yes, I assume so, yes. Of
14 course.

15 JUDGE BHATTACHARYYA: If more context is needed,
16 your counsel can ask on -- will have a chance to give more
17 context.

18 MR. MCKEON: Thank you, Your Honor.

19 BY MR. MCKEON:

20 Q. That is because you believe the claims require
21 certain protocols are followed; correct?

22 A. Yes, indeed, yes.

23 Q. You believe that the claims require you to
24 follow certain well-defined processing details and
25 parameters and windows; correct?

1 A. Arriving at these layers, you would want to
2 adhere to the processing parameters and windows as
3 described in the patent.

4 Q. Let me get your deposition at 105-18 to 106-5.

5 The question is: "In order for the claims to be
6 satisfied.

7 Answer: So the claims, among which the layered
8 structure is a very specific one, the first one require
9 that you have to follow certain well-defined processing
10 details, and parameters, and windows."

11 Did I read that correctly?

12 A. That is correct.

13 Q. You can take that down.

14 Because without the certain well-defined
15 processing details, and parameters, and windows, you
16 believe it is unlikely you would arrive at the claimed
17 structures in a reproducible way; correct?

18 A. My suggestion is that I would want to adhere to
19 these processing parameters, and details as outlined in the
20 patent to arrive at the layered microstructure, yes.

21 Q. You also agree, of course, that Figure 1 in the
22 patent is the preferred embodiment; correct?

23 A. Figure 1 is one of the central requirements to
24 meet the claims.

25 Q. And you understand that Figure 1 comes from

1 the -- what we see in this case, the TAV analysis; do you
2 recall that?

3 A. Can you repeat the question, please, the TAV
4 analysis.

5 Q. Do you recall this CX-683, the TAV request, do
6 you recall that testimony in this trial?

7 A. I remember it, yes.

8 Q. You remember this is the result of the analysis
9 that Arcelor did on the Magna part that was given to
10 Arcelor; do you recall that?

11 A. I remember this document. I would not adopt
12 your description of the process, but I remember this
13 document.

14 Q. Well, you don't have any personal knowledge of
15 any of those details; isn't that right?

16 A. That's not what I said.

17 Q. My question is: You don't have any personal
18 knowledge of any of the facts relating to this TAV request,
19 and Magna giving Arcelor a part and having a question about
20 it? You don't have any personal knowledge about that;
21 isn't that right?

22 A. The knowledge is what I gathered here during
23 this trial.

24 Q. So we can rely on the witnesses that have
25 previously testified about the facts relating to this TAV

1 request; correct?

2 A. I don't know whether you can rely on witnesses.
3 That is, I think, not my point. That is a point for the
4 lawyers. But I understand that this is a part that was
5 stamped by Magna from the product that was developed by
6 Arcelor.

7 Q. You are talking about the Usibor 1500.

8 A. Your question, please?

9 Q. Magna hot-stamped a Usibor 1500 part, and then
10 Magna took that part and gave it to Arcelor, and Arcelor,
11 as a result of that, produced this TAV analysis.

12 Do you understand that's the facts that have
13 been developed in this case?

14 A. Not quite what I would -- how I would phrase it,
15 because --

16 MR. KATHIR: Sorry.

17 Objection, Your Honor. Beyond the scope of the
18 direct.

19 MR. MCKEON: Your Honor, he talked about this
20 TAV in his presentation.

21 JUDGE BHATTACHARYYA: Is that correct?

22 MR. KATHIR: I don't believe we cited this
23 document at all in the deck.

24 MR. MCKEON: I'll move on, Your Honor. I'll
25 move on.

1 JUDGE BHATTACHARYYA: All right.

2 BY MR. MCKEON:

3 Q. We'll get back to that, okay, Dr. Raabe.

4 Now, you understand, of course, that Figure 2 of
5 the patent, that's not covered by the claims; correct?

6 A. Figure 2 was in the patent taken as an example,
7 what the inventors wanted to avoid.

8 Q. And hot-stamping, of course, there's no dispute
9 in this case, is a process used in sheet metal forming;
10 correct?

11 A. Hot-stamping is a general process used in sheet
12 metal forming, yes.

13 Q. Of course, hot-stamping involves heating steel
14 blanks in a furnace; right?

15 A. Hot-stamping involves heating material before
16 stamping it, yes.

17 Q. After the blanks are heated, they are
18 transferred to a press, then cooled, and then stamped, and
19 then quenched; correct?

20 A. No, that is not correct.

21 Typically, you quench in this process during the
22 forming, not afterwards.

23 Q. Okay.

24 Well, let's get to your expert report at
25 Paragraph 54.

1 We see here -- well, let's look at Paragraph 52
2 first.

3 Do you see here, you say, "First, the steel
4 blanks are heated in a furnace."

5 Did I read that correctly?

6 A. Yes.

7 Q. Let's go to 54.

8 Then you say, "Second, the blanks are
9 transferred to a press, cooled, stamped, and quenched."

10 Did I read that correctly?

11 A. That is correct. That happens during that
12 stamping.

13 Q. All right.

14 So you stand by your expert report; correct?

15 A. Of course.

16 Q. Thank you.

17 You can pull that down.

18 Hot-stamping is a process that can be performed
19 on uncoated and coated steel; isn't that right?

20 A. Yes, it can be done on coated and uncoated
21 material, yes.

22 Q. For hot-stamping of coated steel, interdiffusion
23 occurs between the coating and the steel; correct?

24 A. So during the hot-stamping of coated material,
25 you can have interdiffusion between the coating and the --

1 the pre-coating and the base material.

2 Q. And that creates microstructure; correct?

3 A. That in some cases can create a microstructure.

4 Q. Let me get your expert report again to make sure
5 we're very clear on this, okay.

6 At Paragraph 56 of Dr. Raabe's expert report,
7 you say this: "During hot-stamping, interdiffusion occurs
8 between the coating and steel, creating a complex
9 microstructure."

10 Did I read that correctly?

11 A. That is totally correctly, but it pertains to
12 that deposition, and this specific patent.

13 Your question before had been a general
14 question. So that text here is totally correct.

15 Q. All right.

16 Interdiffusion occurs regardless of whether the
17 layers recited in the '602 and '227 patents are formed;
18 correct?

19 A. Please, can you repeat the question.

20 Q. Sure.

21 You're going to get interdiffusion regardless of
22 whether these four layers that are required by the patent
23 are formed; correct?

24 A. When we talk about this specific patent, then
25 you can also generally get some type of diffusion, even if

1 it might not lead to that desired target of the layered
2 microstructure such as coated in the claim.

3 Q. In fact, Figure 2 of the patent shows that,
4 shows the interdiffusion layer; isn't that right?

5 A. I'm not exactly sure what happened to that
6 sketch, or to the microstructure in Figure 2, but the
7 authors of the patent used it as a negative example of what
8 they wanted to avoid.

9 Q. Okay.

10 Well, let's pull up the figure, and make sure
11 we're clear on this.

12 Figure 2 shows an interdiffusion layer; correct?

13 A. Correct.

14 Q. So we know based on this, that you can get an
15 interdiffusion layer, even though you don't have the four
16 layers required by the patent; correct?

17 A. No. I disagree.

18 Q. Well, you have an interdiffusion layer here in
19 this figure.

20 You see it; right?

21 A. Yeah.

22 But you said not "an" interdiffusion layer, you
23 said "the" interdiffusion layer in the context of the claim
24 and that is something different because this is "an"
25 interdiffusion layer. But the other thing is "the"

1 interdiffusion layer such as claimed in the patents.

2 Again, I have to apologize, it is not my mother
3 tongue language, but I wanted to be sure that this is not
4 the same thing.

5 Q. You are doing very good, you're more precise
6 than I am, Dr. Raabe, so we understand what you are saying
7 and move on.

8 Now, of course, hot-stamping of boron steel,
9 that has been known since 1973; isn't that right?

10 A. Hot-stamping of boron steel is long around.

11 Q. Of course, even the name Usibor, right, the
12 B-O-R in Usibor is a play on to the boron steel; isn't that
13 right?

14 A. Yeah. Correct.

15 Q. Of course, you agree that hot-stamping of Usibor
16 was known by at least 2001; right?

17 A. I agree.

18 Q. In fact, in hot-stamping -- in 2001,
19 hot-stamping of Usibor 1500 was used for bolt-on parts for
20 automobiles; correct?

21 A. That's correct.

22 Q. In 2005, hot-stamping of Usibor 1500 was used
23 for platform parts; correct?

24 A. That is correct.

25 Q. Of course, platform parts, the fact that they're

1 being used for platform parts means they're a part of a
2 mass production; isn't that right?

3 A. That is not generally the same, no, I disagree.

4 Q. So even though there's Usibor, it's being
5 processed, and it's being hot-pressed -- hot-stamped, and
6 it's being put into automobiles for platform parts, in
7 2005, you don't think that's mass production?

8 A. That's what I'm saying. This is not the same
9 term, no. It means something different.

10 Q. Let's pull up if we can, CX-563 at page 4.

11 Of course, you've seen this timeline from an
12 internal Arcelor document in this case; right?

13 MR. KATHIR: Objection, Your Honor. Beyond the
14 scope of the direct.

15 MR. MCKEON: Your Honor, I'm trying to establish
16 the state of the art. This is what this witness's
17 testimony is about here.

18 JUDGE BHATTACHARYYA: The objection is
19 overruled.

20 BY MR. MCKEON:

21 Q. We can agree, sir, according to Arcelor's own
22 timeline, you see in 2001, you see the Usibor 1500 aluminum
23 silicon steel was hot-stamped for an A-Pillar.

24 Do you see that?

25 A. Yes, I see it.

1 Q. Then you also see in 2005, you see the PHS,
2 right, the hardened steel, Usibor 1500 aluminum silicon was
3 used on platform parts.

4 Do you see that?

5 A. I see that.

6 Q. You also see, no doubt, the Volkswagen Passat in
7 the picture below there?

8 A. Yes, I see it.

9 Q. So in the internal documentation at the company,
10 they recognized the state of the art that everybody is
11 dealing with, they recognize in 2005, this stuff is being
12 used in platform parts, and as an example of that, they
13 specifically refer to the Volkswagen Passat; correct?

14 A. That is correct.

15 Q. In fact, Arcelor was so excited, so excited
16 about the Volkswagen Passat, they viewed it as a major
17 breakthrough in the industry; isn't that right?

18 A. I have seen a document which states on a slide
19 that this is some kind of, you know, major achievement,
20 indeed.

21 As a person of skill in the art, I interpreted
22 this, however, being related to the steel beneath, because
23 like I have sketched in the beginning, Your Honor, when I
24 try to sketch the motivation why you develop such products,
25 it is the ultrahigh strength you need to protect the

1 passengers, the cabin, to make it very strong.

2 My interpretation of that slide had been that
3 this was a major breakthrough that they re capable of using
4 such an ultra-strong steel for the entire passenger, like
5 you sketched here, platform arrangement.

6 Q. Yeah.

7 A. That's how I read it.

8 Q. All right. Well, let's take a look at the
9 document so we can talk about it. Okay?

10 A. Okay.

11 Q. It's CX-565 at page 9. Here we go.

12 You see here the bullet point in this page has a
13 retrospective of hot-stamping and the use of
14 press-hardening steel.

15 Do you see that?

16 A. I see it.

17 Q. This, of course, as you understand it, is an
18 internal document that Arcelor produced to reflect sort of
19 the timeline, and the development of the technology.

20 You agree with that; right?

21 A. What I read in this text that you highlight here
22 is that they said something like, the race was on, and they
23 were obviously referring to that Passat vehicle, as you
24 said.

25 And then they say in the line below, "A

1 significant number of press-hardened components used in
2 body-in-white."

3 That's like what I said before, was bringing me
4 to my expert assumption, they talk about the fact that this
5 material is press-hardened in the body-in-white, that was
6 my picture that I showed before, because the most essential
7 feature for a customer is to have a safe --

8 MR. KATHIR: Objection, Your Honor.

9 JUDGE BHATTACHARYYA: Mr. Kathir.

10 MR. KATHIR: We renew our objection that this is
11 beyond the scope. This is no longer the state of the art.
12 This exhibit wasn't even used with their witnesses to
13 describe the state of the art.

14 JUDGE BHATTACHARYYA: Mr. McKeon is not limited
15 on cross-examination to the documents that you used on
16 direct.

17 Can you explain the connection.

18 MR. MCKEON: Yeah, Your Honor.

19 This witness testified on direct testimony that
20 the Passat is not enabling, and this company is calling it
21 a major breakthrough. It's very relevant to the witness's
22 direct testimony.

23 And the timeline and the state of the art, Your
24 Honor, goes to whether these references are enabling or not
25 enabling. That's what I'm establishing here.

1 JUDGE BHATTACHARYYA: The objection is
2 overruled.

3 You may proceed.

4 BY MR. MCKEON:

5 Q. So, sir, let me direct you to the specific
6 question.

7 There's no question in your mind that the
8 company, Arcelor, that's the -- part of the Plaintiff in
9 this case, ArcelorMittal, created this document, and in the
10 document, it represented, an internal document, that the
11 Passat was a major breakthrough, and it specifically
12 mentioned the press-hardened components for the passenger
13 safety cage; correct?

14 Sir, I appreciate if you just stick with a yes
15 and no because we're trying to get out of here by 5. Okay?

16 A. I understand that, but I had mentioned before it
17 would be appreciable to have a focused question because,
18 again, I'm not a mother tongue speaker, I must really have
19 well-defined questions.

20 So what I take from this document and how I
21 understand your question is, yes, I fully agree, the
22 company calls it a breakthrough. Fully on your side.

23 Secondly, they refer, yes, as an example, to the
24 Volkswagen Passat. That's what the document says. Totally
25 agreed.

1 Next, they say, they refer to the fact that this
2 is based on using press-hardened components. A
3 press-hardened component has nothing to do with a coating.

4 Press-hardening is a quench from austenite into
5 martensite that makes steel very, very hard. That makes
6 the passengers in that body-in-white structure extremely
7 safe in an impact situation.

8 The fact that you are press-hardened a steel
9 that was austenitic has nothing to do with the coating of
10 the claims.

11 MR. MCKEON: Your Honor, I move to strike that
12 answer. It's really nonresponsive. I asked a very
13 specific question, and I get the language issue, but I
14 can't suffer under that.

15 I ask a question, I expect an answer to the
16 question.

17 JUDGE BHATTACHARYYA: Mr. Kathir.

18 MR. KATHIR: Yes, Your Honor. Mr. McKeon asked
19 Dr. Raabe about the statement in this document, and that's
20 what Dr. Raabe was responding to. He was responding to
21 Mr. McKeon's direct question about the statement.

22 JUDGE BHATTACHARYYA: Motion to strike is
23 denied.

24 If you want a yes or no answer, or a very
25 limited answer, please specify that in the question.

1 MR. MCKEON: Okay.

2 BY MR. MCKEON:

3 Q. Dr. Raabe, I'm going to ask a very clear
4 question, I want a yes or no.

5 In the internal document that we are looking
6 here right now, Arcelor identified the Passat, of all the
7 vehicles in the entire world, identified the Passat as a
8 major breakthrough; correct?

9 A. They defined this as --

10 Q. Sir, sir, sir. Yes or no.

11 JUDGE BHATTACHARYYA: Dr. Raabe, Mr. McKeon is
12 asking for a yes or no answer. You should answer yes, no,
13 or I can't answer yes or no.

14 THE WITNESS: So I can't answer this really with
15 yes or no because it is --

16 JUDGE BHATTACHARYYA: And you should just --

17 THE WITNESS: Ah.

18 JUDGE BHATTACHARYYA: That's enough. Your
19 counsel can redirect you on the redirect.

20 BY MR. MCKEON:

21 Q. I'll give you one more opportunity. Sir, I'll
22 give you one more opportunity.

23 A. No, I cannot.

24 Q. The question is very clear.

25 In this internal document from Arcelor, they

1 identified, as a major breakthrough, the VW Passat, out of
2 all the vehicles in the world, they identified that very
3 specific car; correct?

4 A. That is correct.

5 Q. And that same car is the car at issue in this
6 case that Respondents say invalidates the patent; correct?
7 The Volkswagen Passat; correct?

8 A. Can you rephrase the question.

9 Q. Do you understand that there's an allegation in
10 this case that the Volkswagen Passat invalidates the
11 patent; correct?

12 A. The Volkswagen Passat, as I said before, is not
13 invalidating the patent.

14 Q. I understand that's your view, sir. We've heard
15 that, and I'm going to get to that, but that is the
16 allegation that's being made by Respondents, that it
17 invalidates the patent; correct?

18 A. The allegation is on the table, yes, I agree.

19 Q. So we have a Volkswagen Passat in this courtroom
20 at issue, and we have a Volkswagen Passat as a major
21 breakthrough in a document referenced by Arcelor; correct?

22 A. Yes.

23 Q. Of course, you agree 2004 is way before the
24 priority date at issue in this case?

25 A. Yes. 2004 is before 2006, that is correct, that

1 statement.

2 Q. Now, you agree that hot-stamping is a complex --
3 is complex, and the process needs to be carefully
4 controlled; correct?

5 A. Correct.

6 Q. There are many parameters that impact the
7 hot-stamping process; correct?

8 A. Correct.

9 Q. It is impossible to predict whether a
10 hot-stamped part would have a -- would have desirable
11 attributes without knowing several key parameters, such as
12 heating rate, blank thickness, and furnace type; correct?

13 A. Yes, it is correct.

14 Q. Another significant parameter that impacts the
15 hot-stamping process is the homogeneity of the coating?

16 A. Yes, that is correct.

17 Q. Significant problem in the industry is that each
18 hot-stamper has its own setup; correct?

19 A. Correct.

20 Q. As a result, it is very difficult to predict
21 whether a hot-stamped part will have desirable attributes;
22 correct?

23 A. Correct.

24 Q. You were here for Dr. Fekete's testimony; isn't
25 that right?

1 A. I followed part of Dr. Fekete's testimony.

2 Q. You understand that he is making the presumption
3 that parts that are contained in cars, such as
4 Mercedes-Benz and BMW and others, that he has no
5 information on process parameters, he's concluding that
6 they're covered by the patents.

7 Were you here for that testimony?

8 MR. KATHIR: Objection, Your Honor. Beyond the
9 scope of the direct.

10 MR. MCKEON: Getting to the scope of the claims,
11 Your Honor, and how we're applying it consistently in this
12 case, and I am just asking him about how he's applying it,
13 the process parameters, and how it conflicts with the
14 way -- what we have heard earlier this week.

15 JUDGE BHATTACHARYYA: The objection is
16 overruled.

17 Do you want to hear the question again?

18 THE WITNESS: I would be happy to hear a
19 clear-cut question. I understood Mercedes-Benz or BMW, but
20 I didn't understand the full question, honestly.

21 BY MR. MCKEON:

22 Q. Let me do better than that. This is RDX-10.1.
23 This is testimony we heard earlier this week. I'm going to
24 just reference you to the first question and answer.

25 "Now, getting back to the patent at issue and

1 the infringement DI analysis, you agree that the specific
2 process parameters for the hot-stamping process are not
3 things that need to be considered when doing an analysis of
4 whether a product is covered by the claims; correct?"

5 His answer was "Correct."

6 Now, focusing just on that, do you agree or
7 disagree with Dr. Fekete and how you applied the claims in
8 this case?

9 A. That is for me hard to say yes or no.

10 Q. You don't know sitting here whether the
11 testimony that Dr. Fekete provided to the Court earlier
12 this week, you can't agree or disagree with it?

13 A. Maybe it would be easier for me when I can again
14 go through the entire context of his testimony. Because
15 this is a very small portion, which seems to be maybe a bit
16 out of context.

17 Q. Sir, I -- just focusing on the one question and
18 answer. Just one question and answer. Take your time and
19 read it.

20 A. Yeah. I would tend to agree to Dr. Fekete here,
21 but I would like to emphasize that it would be better to
22 know the complete context.

23 Q. So now -- let me ask you a question, again.

24 Do you agree, sir, with respect to the claims
25 analysis, whether a product is covered or not covered, you

1 agree that the specific process parameters for the
2 hot-stamping process are not things that need to be
3 considered when doing an analysis of whether a product is
4 covered by the claims; correct?

5 A. So you're asking me again about this statement
6 from Jim Fekete.

7 Q. Take the -- we don't need to look at this again.
8 Now I'm asking you a question based on your
9 prior answer. So now I want to ask you the question.

10 A. Okay.

11 Q. So you agree that the specific process
12 parameters for the hot-stamping process are not things that
13 need to be considered when doing an analysis of whether a
14 product is covered by the claims; correct?

15 A. I would go a little bit beyond this standpoint.
16 So when available, I would rather go for getting additional
17 information -- additional information about processing
18 parameters, in conjunction with an analysis of these
19 claimed microstructure features.

20 Q. When available, but you agree you don't need it,
21 just like Dr. Fekete said, you don't need it when doing the
22 analysis of whether something is covered by the claims.

23 Yes or no, sir.

24 A. No, I would tend to agree to the testimony here
25 of Dr. Fekete.

1 Q. Thank you, sir. Pull that down.

2 Now, if we can pull up slide -- demonstrative
3 slide 2. And what we have done here is just to make our
4 conversation more simple, I have got portions of the patent
5 on the slide, and we have color-coded it to make it simple.

6 You recognize this from the patent; correct?

7 A. Yes, I do.

8 Q. Of course, we see here two process windows in
9 Figure 7; isn't that right?

10 A. In Figure 7, we see two areas which pertain to
11 different thickness regimes of the material.

12 Q. Okay. Right.

13 Then one is related to .7 to 1.5, and another is
14 related to above 1.5 to 3; isn't that right?

15 A. Correct.

16 Q. So then for each one of these thickness you have
17 two different process -- strike that.

18 For each one of these thickness, you have a
19 corresponding process window; correct?

20 A. Correct.

21 Q. Of course, for the one in red, the thickness .7
22 to 1.5, it says, well, the window is 930 degrees Celsius,
23 from 3 minutes to 6 minutes, and 880 Celsius, 4 minutes, 30
24 seconds up to 13 minutes.

25 Do you see that?

1 A. I see that.

2 Q. That window is sort of highlighted in the figure
3 we have here in 7; correct?

4 A. Correct.

5 Q. Similarly, the blue highlight corresponds to
6 what we have highlighted on the right from the
7 specification, 1.5 to 3, you have 940 C from 4 minutes up
8 to 8 and 900 degrees from 6 minutes 30 seconds up to 13.

9 Do you see that?

10 A. I see that, yes.

11 Q. Do you agree that if you are within the process
12 window of Figure 7, you will create the four layers
13 required by the claims; correct?

14 A. No, I do not agree.

15 Q. Let's pull up, if we can, RDX-9.3.

16 You recognize this -- you were here for
17 Dr. Fekete's testimony; isn't that right?

18 A. As I have mentioned before, I heard some of
19 Dr. Fekete's testimony.

20 Q. Let me direct your attention to the question and
21 answer at the bottom that are highlighted.

22 "Question: You believe that if the process
23 parameters are within the process window, that means the
24 claimed-for structure will be created; correct?

25 Just barely, but yes."

1 Do you see that his testimony is?

2 A. I see that, yes.

3 Q. He was specifically referring to the two stars
4 there you see on the slide, his slide, that he presented to
5 the Court.

6 Do you see that?

7 A. Yeah. I see these two stars, yes.

8 Q. You understand that he is saying and he told the
9 Court that because these two stars are within the process
10 window, as defined by the figure, then you will end up with
11 the four layers.

12 Do you understand that's what he's saying to the
13 Court?

14 A. I am just a bit careful because I'm afraid that
15 this is maybe compared to my statement, pulled a little bit
16 out of the context.

17 When I had given you the answer before, then I
18 implied by that, that you need to adhere to a set of
19 processing parameters to arrive at these four layers. For
20 this, I would maybe have to revisit the entire context when
21 Dr. Fekete gave that answer.

22 Q. Well, do you see the problem I have here,
23 Dr. Raabe? I have one expert that says one thing, and I
24 have another that is saying another thing, and I need to
25 get it straight. And I'm just trying to explore that.

1 So my question for you is: You agree, correct,
2 you agree with the statement that if the process parameters
3 of a process are within the process window, that means the
4 claimed structure will be created; correct?

5 A. I would add further processing parameters to it.

6 Q. In other words, you disagree -- you disagree
7 with Dr. Fekete the way he did the analysis in this case,
8 you disagree with the fact that if you're within the
9 process parameters in Figure 7 that you create the four
10 layers.

11 You disagree with that, is that what you're
12 saying?

13 A. I do not disagree with Jim Fekete.

14 Q. Let's get this straight because I need to know
15 this very clearly as we get to the prior art.

16 You agree if you are within the process windows
17 defined by Figure 7, you agree you will create the
18 four-layered structure required by the claims. Yes, sir,
19 yes or no.

20 A. You refer to this statement now?

21 Q. I'm referring to you, Dr. Raabe.

22 You agree that if the process parameters are
23 within the windows, the process windows defined by
24 Figure 7, that you will get the claimed structure with the
25 four layers; correct?

1 A. You will get the layered structure when you
2 adhere to several process parameters as described in the
3 patent.

4 Q. And --

5 A. And this is one of them.

6 Q. Well, let's be very specific here.

7 Claim 7 requires a thickness, a temperature, in
8 a range, and a time. Isn't that right? That's Figure 7 of
9 the patent; isn't that right?

10 A. That is pertaining to Figure 7.

11 Q. According to the other expert that we heard from
12 Arcelor this week, according to the other expert we heard
13 from, if you get those three things right, according to
14 Figure 7, you get the four layers. You disagree with that
15 or you agree with that?

16 A. As an expert in the field, I would follow this
17 Figure 7, yes, but adhere also to the other process
18 parameters as described properly in the patent.

19 Q. You're adding things to my question, sir, and
20 I've got to get a very specific answer from you because
21 this is really important in this case.

22 So I need a very specific answer because you
23 said a lot about the prior art. You went through all of
24 the prior art, and I want a very specific answer.

25 Yes or no. You agree that if the process

1 parameters are within the windows of Figure 7, then you
2 will get the claimed structure with the four layers;
3 correct?

4 A. I find that hard to answer with yes or no for
5 the reasons that I have stated before.

6 Q. So what you're saying is no, you have to do more
7 than that. You need other things you have to have, because
8 if you get these three things right, thickness, time in the
9 oven, and temperature, you may not get the four layers.

10 That's what you believe; isn't that right?

11 A. What I believe is when you want to arrive at
12 these four layers, then you must follow the processing
13 protocols as described in the patent, where you Figure 7
14 sets only a subset of these processing parameters.

15 That's what I'm trying to convey here as an
16 expert in the field.

17 Q. So let me see if I can just put a fine point on
18 it.

19 Figure 7 gives you some of the process
20 parameters, but according to you in order to get the four
21 layers you've got to do more than that. There's other
22 things in the patent that you have to follow. Is that what
23 you're telling the Court?

24 A. That's correct. You have to follow also other
25 processing parameters.

1 Q. Thank you, sir.

2 Pull that down.

3 Now, let's go to Cornette. That's RX-19, and
4 you provided testimony about this in your direct, do you
5 recall that?

6 A. Yes, I do.

7 Q. All right.

8 Let me get the Respondent 3 here. It's RX-19.
9 You're familiar with the Cornette reference here, aren't
10 you?

11 A. I am.

12 Q. This is of course, a 2001 paper from Usinor;
13 isn't that right?

14 A. Correct.

15 Q. Of course, you understand that Usinor is
16 actually a predecessor company to what we got here in the
17 courtroom, ArcelorMittal?

18 A. Correct.

19 Q. In fact, J.P. Laurent is also -- well, strike
20 that.

21 J.P. Laurent is the author of this paper, one of
22 the authors of this papers; isn't that right?

23 A. Laurent is one of the authors of this paper.

24 Q. We have heard of him previously in this trial,
25 J.P. Laurent is actually the inventor on that original

1 Usibor patent; do you know that?

2 A. I know.

3 Q. The Cornette paper was presented at SAE 2001
4 World Congress in Detroit between March 5th and 8th of
5 2001; isn't that right?

6 A. That is correct.

7 Q. And SEA -- SAE, rather, stands for; isn't that
8 right?

9 A. That is correct.

10 Q. You agree that SAE is a big deal; right?

11 A. For whom?

12 Q. Well, it was founded in 1905; right?

13 A. A big deal for whom?

14 Q. Well, it's an association and has 128,000
15 engineers and technical experts; do you know that?

16 A. I did not know the exact numbers, no.

17 Q. Does that surprise you to know that 128,000
18 engineers and technical experts are part of SAE?

19 A. No, it does not surprise me, but as I said, I
20 did not know the specific number.

21 Q. But you understand that it's a very important --
22 in the automotive industry, it's a very important
23 organization.

24 You agree with that; right?

25 A. Of course.

1 Q. In fact, SAE sets standards for the business;
2 isn't that right?

3 A. That is correct.

4 Q. And of course, the 2001 World Congress had
5 people from all over the world attending it; right?

6 A. I don't know. I have not attended this
7 conference.

8 Q. Well, they call it the World Conference for a
9 reason; right? It's the world is there; isn't that right?

10 A. Yeah, but these two statements have nothing to
11 do with each other.

12 I don't know who attended the conference. How
13 would I know that?

14 Q. I don't expect you to know who's there, but you
15 wouldn't be surprised if folks from all around the world,
16 including from our friends over here, Usinor, and folks
17 that were doing the research in this area were attending in
18 Detroit.

19 You wouldn't be surprised by that, would you?

20 A. I would find it very likely that many automotive
21 engineers would attend such a conference, yes.

22 Q. In fact, since this is in Detroit, you
23 understand that's where Ford is headquartered and General
24 Motors. They call it Motor City for a reason; do you
25 understand that?

1 A. I do.

2 Q. Of course, we all know that 2001 is when the
3 Usibor first went on sale; isn't that right?

4 A. Yes, that's correct.

5 Q. This paper is kind of the coming out, if you
6 will, of Usibor.

7 Is that how you view it?

8 A. No, I would not view it like this is the coming
9 out.

10 Again, that connection, I wasn't sure how to
11 underpin it, but I see the coincidence of these two years,
12 yes.

13 Q. Okay.

14 The Cornette paper certainly was a
15 presentation -- there was a presentation given with this
16 paper, and it involved, of course, hot-stamping process
17 window for pre-coated Usibor 1500; isn't that right?

18 A. Yeah.

19 This paper was, as we discussed before, about
20 presentation of opportunities in conjunction with
21 high-strength steels for potential automotive customers,
22 and reporting about potential developments in that field,
23 yes.

24 Q. Okay.

25 Let's just go to page 9, if we can of the

1 presentation, RX-19.9. This is a figure we have seen here.
2 Why don't we blow it up so we can get a better view of it.

3 You discussed this figure on your direct; isn't
4 that right, sir?

5 A. That is correct.

6 Q. Of course, no doubt in this -- at all in this
7 paper that we're talking about the Usibor 1500; right?

8 A. Correct.

9 Q. Usibor 1500, of course, is at issue in this
10 courtroom because you know all week we have heard about it;
11 isn't that right?

12 A. Yes.

13 But more specific there are only a few columns
14 of that paper talking about Usibor.

15 If you read that paper, most of the text is
16 about three or four other steel grades.

17 But there is Usibor contained in that paper also
18 with a very small fraction.

19 That is correct.

20 Q. Okay.

21 But at least we know in this figure what they're
22 talking about is taking this Usibor 1500, which is that
23 aluminum silicon coating we've all been talking about
24 throughout the trial, and heating it. And according to
25 this disclosure, you heat it for 5 to 10 minutes at 880 to

1 950 degrees C; isn't that right?

2 A. So you said that figure is showing aluminum
3 silicon-coated, but that's not what the figure said. The
4 figure says it's a pre-coated.

5 Q. Well, it's pre-coated, but the Usibor 1500, we
6 know it had -- we know what coating it is. There's no
7 mystery about that in this case; is there?

8 A. No, what you say is incorrect.

9 We have on this figure before that you can also
10 equip it with other coatings.

11 Q. Okay. Well, we'll get to that.

12 But focus on the heating treatment here, you
13 have the 5 to 10 minutes, 880, to 90.

14 Do you see that?

15 A. I see it.

16 Q. Of course, this is the processing times, and for
17 temperature and time, that in this presentation, they're
18 telling the whole world there in Detroit, use this for the
19 pre-coated Usibor 1500, use this particular process
20 parameter, is what they're saying to the world; isn't that
21 right?

22 A. Yeah.

23 They give these two parameters and say it on a
24 conference. I totally agree.

25 Q. They do more than that.

1 Let's go to, if I can, to 19.10.

2 They actually give much more detail here, but
3 they talk about the thickness of the material at
4 1.5 millimeters.

5 Do you see that?

6 A. Yes. I see that, after they say that the
7 mechanical properties are not guaranteed.

8 Q. Well, you know what, I survive my stuff -- it
9 happens all the time. I read the fine print, it says, not
10 guaranteed, because lawyers -- I have lawyers all around
11 that sue people. A lot of people don't guarantee things,
12 sir, but I'm talking about the technology in this case.

13 The technology in this case is 1.5 millimeters,
14 people are reading this and saying that's the thickness of
15 the steel that I'm going to process here; isn't that right?

16 A. Yes. They refer to a thickness of
17 1.5 millimeters, that's correct.

18 Q. So in this disclosure to the world in Detroit, I
19 got the thickness, I got the temperature window, and I got
20 the time window; isn't that right, sir?

21 A. Yes, they have a temperature, they have a time,
22 and they have a thickness. I agree.

23 Q. Let's go to RDX-10.4, if we can.

24 And this is a -- to make it easier for us, we
25 have prepared this demonstrative, and that's sort of a

1 spot-on right in that window; isn't that right?

2 This is right in the range that they're talking
3 about in the patent, the 1.5 millimeters.

4 You got the window here of 880 to 950, right,
5 and that falls within the processing windows of Figure 7;
6 isn't that right?

7 A. It does not fall within, it overlaps. Falling
8 within is mathematically something different. That means
9 it would be totally surrounded by the other space. It has
10 an overlap.

11 Q. It's an overlap. That means if you follow these
12 parameters you're going to get the four layers; isn't that
13 right?

14 A. No, but that's not what the paper said.

15 Q. Well, I know the paper didn't say, if you follow
16 the parameters, you can get the four layers. We all know
17 that.

18 What I'm trying to get at is the paper gives you
19 very specific guidance about the temperature, the time in
20 the oven, and the steel thickness. These are the big three
21 for Figure 7; isn't that right?

22 A. No, that's not correct.

23 Q. What's not correct?

24 A. The figure does not give you a time in the oven.
25 It gives you a time of the heating.

1 Q. Well, sir, heating -- are they heating this
2 thing with BIC lighters? They're putting it in a massive
3 furnace. Everybody in the business knows this. We learned
4 that in the last three days; haven't we?

5 A. I don't know about using lighters in the
6 industry. Maybe you know more than I do. But the point is
7 in the industry, with which I've worked more than three
8 decades, you can have different processing steps of
9 whatever they did not reveal in that paper. How you have
10 preheated the material before an oven, of course, you can
11 do that.

12 Q. You think the people in this room would look at
13 that and it says, heating for that long, that time frame,
14 at that high temperature, you think that people wouldn't
15 say, oh, that's -- that's got to be done in an oven. You
16 don't think that's the conclusion that one of ordinary
17 skill in the art would make?

18 A. That's not what I said.

19 Q. It would be in an oven; isn't that right, sir?
20 The Cornette, this paper is very clear, when you do those
21 heatings, you can do it in an oven; correct?

22 A. I just say there's a difference for somebody in
23 this field between the term "heating" and the term "oven."

24 You can do a heating of a sequence of different
25 processes, and even the forming is heating up the material.

1 So I'm just trying to be clean on the
2 terminology here.

3 Q. All right.

4 Well, let's look at another one.

5 You had provided some opinion testimony on
6 Vaissiere, I think is what we have decided to call it. So
7 if I can get RX-81.

8 Do you recognize the Vaissiere paper?

9 A. I do.

10 Q. Okay.

11 Again, this is another paper where J.P. Laurent
12 is also an author; isn't that right?

13 A. That is correct.

14 Q. Of course, this is a -- another SAE paper about
15 hot-stamping Usibor in the Peugeot Citroen; correct?

16 A. Yes, that's correct.

17 Q. Of course, it was at another international
18 conference, this presentation; isn't that right?

19 A. Yeah, that's correct.

20 Q. This was a three-day conference in Paris,
21 France, in July of 2002; isn't that right?

22 A. I don't see Paris written on here, but I see the
23 year and -- okay. Yeah, there it is. I agree, of course.

24 Q. Okay.

25 Then we see -- thank you, Mr. Sayres. I think

1 we got that.

2 So why don't we go to page 8, and we see here
3 that this is the figure -- a similar figure to what we saw
4 in the other presentation in Detroit; isn't that right?

5 A. That's correct.

6 Q. It has the same -- it's disclosing the same
7 Usibor 1500 pre-coated, and the same time windows,
8 temperature windows; isn't that right?

9 A. That's correct.

10 Q. If we go to Vaissiere, but this time, this paper
11 here, as we know from the cover, this is a 2002 paper;
12 isn't that right?

13 A. Yeah. 2002, yes.

14 Q. So that's the year it makes very specific
15 recommendation for temperature and time for a particular
16 thickness; isn't that right?

17 A. Yeah. They give a heating time, 5 to 10
18 minutes, and a temperature range. I would not call that
19 very specific, but they give a few parameters, yes.

20 Q. Okay. Well, let's take a look at that.

21 Go to page 5, please. If I can get highlighted
22 the 4.4-3-1. And please -- give the whole clip, if I can,
23 Mr. Sayres. You missed something there. Down below.
24 There you go.

25 Do you see it here, this is in the paper at this

1 presentation; isn't that right?

2 A. Yes, that's correct.

3 Q. They're very specific, "Recommendations"; in
4 other words, hey, people in this business, they're
5 listening to us. This is very, very exciting. We have
6 very specific recommendations for you.

7 That's what they're saying here; isn't that
8 right?

9 A. I find your statement was longer than the
10 heading of this paper, so I don't know what your question
11 is behind it.

12 It says, "Recommendations," but your sentence
13 was much, much longer.

14 Q. Well, it's a recommendation, right, in other
15 words, they're recommending this, they do this?

16 A. Yeah. That's what this heading is saying.

17 Q. Okay.

18 A. They call it recommendation, yes.

19 Q. You agree, though, that the recommendation that
20 they disclose here is 1.2-millimeter thickness in the
21 blanks; correct?

22 A. Correct.

23 Q. And they have the times, and the temperatures;
24 isn't that right?

25 So for temperature 880, they say 5 minutes; and

1 900, they go 4 minutes.

2 Do you see that?

3 A. I see that.

4 Q. Okay.

5 Of course, you agree that these process windows
6 that are disclosed in the paper, in Paris, France, where
7 the who's who in the industry are there, these would fall
8 within the Figure 7 process windows; isn't that right?

9 A. Yes, I agree.

10 Q. Okay. Well, let's just take a look at for
11 effect.

12 9.6, please, RDX.

13 We pre-prepared this, sir, but if you do the
14 analysis on the two disclosures in the reference, you
15 agree, Vaissiere, you would get -- you would land right
16 where we show here in the window here; isn't that right?

17 A. Correct.

18 Q. Again, then because of that, if you follow this
19 and do what's disclosed in this reference, you get the four
20 layers of the patent; correct?

21 A. No. I don't agree.

22 Q. Again, disagree with Dr. Fekete on that; is that
23 right?

24 A. I disagree with what you said.

25 Q. All right. Let's look at the Kefferstein

1 reference.

2 If I can go to RX-49.

3 You, of course, are familiar with the
4 Kefferstein reference, sir?

5 A. I am.

6 Q. This is 2004 now; isn't that right?

7 A. Correct.

8 Q. People in this business, they know what Usibor
9 1500 is about, and they are -- they know how to process it;
10 isn't that right?

11 A. They know Usibor 1500P, and they have
12 information how to hot-stamp it, yes.

13 Q. Mr. Kefferstein, of course, is one of the
14 inventors on the patents at issue in this very case; right?

15 A. Correct.

16 Q. He's an author on this paper; isn't that right?

17 A. Correct.

18 Q. If you go to 49.1, we see another very specific
19 reference to temperatures and thickness in this paper;
20 isn't that right? 900 to 950 C, 4 to 10 minutes, and then
21 we have a thickness that's very clear at 1.5 millimeters;
22 isn't that right?

23 A. Point me at the thickness in this specific
24 paragraph. I see the temperature and the time. Where do
25 you see the thickness in this?

1 Q. Give me a moment here, sir. We'll find that.
2 Small print. Having trouble finding it.

3 Let's go on to something else, sir, and we'll
4 come back to that. Okay?

5 Now, you've previously given testimony in this
6 proceeding that one SEM image, in your opinion, is not
7 enough to draw a conclusion as to whether the layered
8 structure of the asserted claims is satisfied; is that
9 right?

10 A. Yes. When I had the choice, I would always go
11 for more data.

12 Q. All right.

13 All right. Well, I guess let's quickly revisit.
14 We're now back to Kefferstein, and you see here the
15 thickness of 1.5 millimeters is disclosed in Kefferstein?

16 A. I see the thickness written up, but that's --
17 this shows only an insufficient portion of this text
18 paragraph, because I remember when I was reading this paper
19 several times before, that this paragraph, if you read it
20 correctly, refers to the impact energy relevance. That is
21 something totally different.

22 Q. Okay.

23 Let's not -- I don't want to spend much more
24 time on it, but you agree with me, you agree with me, if
25 you have a temperature -- if you have a thickness of 1.5,

1 if you had that thickness of 1.5, and you also have a
2 temperature range of 900 to 950, 4 to 10 minute, you agree
3 with me, that's in the Figure 7 window; you agree with
4 that?

5 A. I agree that you would end up at this Figure 7
6 window, yes. That's correct.

7 Q. All right. I'm going to pull that down.

8 Now, you have quite an aggressive view --

9 MR. MCKEON: So, Your Honor, I notice I'm at --
10 we're at the time here.

11 JUDGE BHATTACHARYYA: Yes.

12 MR. MCKEON: So I was really hoping to finish
13 up, but I'm not going to be able to do that, I don't think,
14 unless -- maybe another 25, 30 minutes.

15 JUDGE BHATTACHARYYA: Well, I -- then we need to
16 leave time for redirect.

17 MR. MCKEON: Yeah.

18 JUDGE BHATTACHARYYA: And to deal with the
19 exhibits.

20 So I think, unfortunately, we should stop now.

21 MR. MCKEON: That's great, Your Honor. Thank
22 you.

23 JUDGE BHATTACHARYYA: Okay.

24 Thank you, we'll resume tomorrow.

25 One other thing I'd like to discuss tomorrow is

1 the page limits or word limits for post-hearing briefs. So
2 hopefully, the parties can meet and confer before tomorrow
3 morning on that.

4 MR. MCKEON: Thank you, Your Honor.

5 JUDGE BHATTACHARYYA: Thank you, everybody.
6 Have a good night.

7 (Whereupon, recess was taken at 5:03 p.m., to
8 resume the following day at 9:30 a.m.)

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1	C O N T E N T S				
2	WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
3	Stuart Brown PhD	876	931	1007	1016
4	Dierk Raabe PhD	1022	1074		

5

6 AFTERNOON SESSION: 988

7 CONFIDENTIAL SESSIONS: 904-910; 927-930; 981-986;

8 998-1006

9

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11 E X H I B I T S

12 EXHIBIT NO: RECEIVED

13 (There were no exhibits admitted.)

14

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1 CERTIFICATE OF REPORTER

2 TITLE: CERTAIN HIGH-STRENGTH ALUMINUM OR ALUMINUM-ALLOY
3 COATED STEEL, AND AUTOMOTIVE PRODUCTS AND
4 AUTOMOBILES CONTAINING SAME

5 INVESTIGATION NO: 337-TA-1402

6 HEARING DATE: Thursday, March 6, 2025

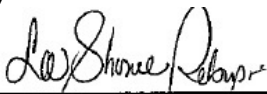
7 LOCATION: Courtroom A

8 NATURE OF HEARING: Evidentiary Hearing

9 I hereby certify that the foregoing/attached
10 transcript is a true, correct and complete record of the
11 above-referenced proceedings of the U.S. International
12 Trade Commission.

13 Date: March 6, 2025

14 SIGNED:



15 Signature of the Contractor of the
16 Authorized Contractor's Representative
17 1150 Connecticut Avenue, N.W., Suite 305
18 Washington, D.C. 20036

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