1 IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
2 WACO DIVISION

3 ALIGN TECHNOLOGY, INC. *
* June 24, 2026
4 VS. *
* CIVIL ACTION NO. 6:24-CV-187
5 CLEARCORRECT OPERATING, *
LLC, ET AL. *
6

BEFORE THE HONORABLE ALAN D ALBRIGHT
7 JURY TRIAL PROCEEDINGS
Volume 3 of 7
8

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ALIGN – EXHIBIT 2043
ClearCorrect Operating, LLC. v. Align Technology, Inc. IPR2025-00821

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09:07 1 (Hearing begins.)
09:07 2 THE BAILIFF: All rise.
09:07 3 THE COURT: Please remain standing for
09:07 4 the jury.
09:07 5 (Jury entered the courtroom.)
09:08 6 THE COURT: Thank you. You may be
09:08 7 seated.
09:08 8 MR. MUELLER: Good morning, Your Honor,
09:08 9 and good morning, ladies and gentlemen.
09:08 10 Your Honor, for our next witness, we call
09:08 11 Dr. Stephen Spiegelberg, and Mr. Zubler will conduct
09:08 12 the examination.
09:08 13 THE COURT: Very nice. Thank you, sir.
09:08 14 (The witness was sworn.)
09:08 15 DIRECT EXAMINATION
09:08 16 BY MR. ZUBLER:
09:09 17 Q. Good morning, Dr. Spiegelberg. Could you
09:09 18 please introduce yourself to the jury?
09:09 19 A. Good morning. My name is Stephen Spiegelberg.
09:09 20 Q. Where do you live, Dr. Spiegelberg?
09:09 21 A. I live in Winchester, Massachusetts.
09:09 22 Q. And can you describe briefly your family?
09:09 23 A. I live with my wife of many years and my two
09:09 24 small dogs.
09:09 25 Q. What do you like to do in your spare time,

09:09 1 Dr. Spiegelberg?
09:09 2 A. My wife and I are amateur musicians, and we've
09:09 3 developed a home concert series over the past couple of
09:09 4 years where we invite professional musicians in to play
09:09 5 in our living room, basically.
09:09 6 Q. What kind of music do you play?
09:09 7 A. I like to play blues and bluegrass.
09:10 8 Q. Dr. Spiegelberg, what is -- where do you work,
09:10 9 sir?
09:10 10 A. I work at a company called Cambridge Polymer
09:10 11 Group.
09:10 12 Q. And what is the Cambridge Polymer Group?
09:10 13 A. Cambridge Polymer Group is a research
09:10 14 laboratory that specializes in polymeric materials.
09:10 15 Q. Have you prepared some slides to assist your
09:10 16 testimony today, sir?
09:10 17 A. Yes. I have.
09:10 18 Q. If we could turn to the first slide.
09:10 19 Dr. Spiegelberg, what have you been asked to
09:10 20 do in this case?
09:10 21 A. I was asked to do two main things: One, to
09:10 22 assess whether or not the ClearCorrect products
09:10 23 infringe the materials patents of Align and whether or
09:10 24 not the Align patents are valid.
09:10 25 Q. Okay. Before we go into your conclusions on

09:10 1 those issues, I'd like to ask you some questions about
09:10 2 your background.
09:10 3 Sir, what educational degrees have you
09:10 4 received?
09:10 5 A. I have a bachelor's of science in chemical
09:10 6 engineering from the University of Wisconsin-Madison
09:10 7 and a Ph.D. in chemical engineering from the
09:10 8 Massachusetts Institute of Technology, or MIT.
09:10 9 Q. When did you get your Ph.D., sir?
09:10 10 A. In 1993.
09:11 11 Q. And what was the focus of your research in
09:11 12 getting your Ph.D.?
09:11 13 A. Both my Ph.D. and my undergraduate degree
09:11 14 focused on polymer science.
09:11 15 Q. And what did you do after you got your Ph.D.?
09:11 16 A. After my Ph.D., I became a research associate
09:11 17 at Harvard University, and then that job translated
09:11 18 over to MIT, when the professor I was working for took
09:11 19 a job at MIT. And there we developed materials for
09:11 20 characterizing polymer solutions in a zero-g
09:11 21 environment.
09:11 22 Q. When did you start working at your current
09:11 23 position, the Cambridge Polymer Group?
09:11 24 A. I'm one of the cofounders of Cambridge Polymer
09:11 25 Group which we started in 1996, and I currently serve

09:11 1 as the chief scientific officer.
09:11 2 Q. And what kind of work does the Cambridge
09:11 3 Polymer Group do?
09:11 4 A. We do a lot of testing for clients according
09:11 5 to standards and ones that we develop in-house. We
09:11 6 develop new materials for different products. We help
09:11 7 companies develop new products and also get them
09:12 8 through the regulatory pathway.
09:12 9 Q. Have you ever worked with polymers for
09:12 10 biological uses?
09:12 11 A. Yes. About 75 percent of our work involves
09:12 12 polymers used in medical applications.
09:12 13 Q. If we could go to the next slide.
09:12 14 Have you received any recognitions, sir, for
09:12 15 your work?
09:12 16 A. Yes. I have over 40 patents, both in the
09:12 17 United States and ex-U.S, and then I have over 75
09:12 18 published articles, book chapters, conference
09:12 19 presentations. And because of my heavy involvement
09:12 20 with ASTM, they've made me an ASTM Fellow.
09:12 21 Q. Okay. Let's pause for a second on ASTM. The
09:12 22 jury has heard about that already.
09:12 23 What is ASTM?
09:12 24 A. ASTM is what's called a consensus standards
09:12 25 organization where we develop standards to help any

09:12 1 laboratory around the world know how to properly test
09:12 2 materials.
09:12 3 Q. And what's the -- what does ASTM stand for?
09:12 4 A. It used to stand for the American Society for
09:12 5 Testing Materials. Now it just stands for ASTM.
09:13 6 Q. And where is the ASTM organization based?
09:13 7 A. Oh, it's international. So they have
09:13 8 headquarters in New Jersey, but they're everywhere.
09:13 9 Q. All right. And if I could ask you,
09:13 10 Dr. Spiegelberg, perhaps just to get a little closer to
09:13 11 the microphone just to make sure the jury and lawyers
09:13 12 can hear your voice.
09:13 13 A. Of course.
09:13 14 Q. Now, on your slide here, it refers to the ASTM
09:13 15 Committee D20 on Plastics. What is that?
09:13 16 A. That's the committee that's in charge of
09:13 17 standards associated with testing polymer materials.
09:13 18 Q. Now, the jury has heard evidence regarding an
09:13 19 ASTM standard known as D638.
09:13 20 Are you familiar with that standard, sir?
09:13 21 A. Yes. I am.
09:13 22 Q. Does the ASTM Committee D20 on Plastics, of
09:13 23 which you're a part, have anything to do with the D638
09:13 24 standard?
09:13 25 A. Yes. Committee D20 is in charge of standard

09:13 1 D638, which means we maintain it, we make sure it's up
09:14 2 to date, and we were the original drafters of it.
09:14 3 MR. ZUBLER: Your Honor, ClearCorrect
09:14 4 offers Dr. Spiegelberg as an expert in the field of
09:14 5 polymer science.
09:14 6 MR. HUNG: No objection.
09:14 7 THE COURT: I missed what instrument you
09:14 8 played.
09:14 9 THE WITNESS: I play the mandolin and
09:14 10 piano.
09:14 11 THE COURT: Okay. Sorry. Sorry.
09:14 12 I've been sitting here waiting for you to
09:14 13 finish, because I heard what you did, but I missed what
09:14 14 you played. So thank you for that.
09:14 15 THE WITNESS: Happy to do a concert later
09:14 16 on if you want.
09:14 17 THE COURT: I will accept him as an
09:14 18 expert.
09:14 19 BY MR. ZUBLER:
09:14 20 Q. If we could go to the next slide.
09:14 21 You said you've analyzed Zendura FLX's
09:14 22 infringement allegations. What did you conclude? Do
09:14 23 aligners made by ClearCorrect using Zendura FLX
09:14 24 infringe Align's patents?
09:14 25 A. No. They do not.

09:14 1 Q. At a high level, why did you conclude that,
09:14 2 sir?
09:14 3 A. They don't have all the properties required in
09:14 4 the Align patents.
09:14 5 Q. And you also said that you evaluated whether
09:15 6 the asserted claims in this case are valid.
09:15 7 What did you conclude about whether or not the
09:15 8 asserted claims of Align are valid?
09:15 9 A. If the Align claims are stretched to include a
09:15 10 hard-soft-hard configuration, then they are not valid.
09:15 11 Q. Now, before we dive into your conclusions, I
09:15 12 wanted to ask you -- if we could go to the next
09:15 13 slide -- what -- in doing your analysis, what
09:15 14 definition of a person of ordinary skill in the art did
09:15 15 you apply in analyzing the facts in this case?
09:15 16 A. I applied the definition of a person of
09:15 17 ordinary skill in the art as one who has a four-year
09:15 18 undergraduate degree in polymer science or materials
09:15 19 science or related field, about two years of experience
09:15 20 in the field of design and manufacturing of films and
09:15 21 thermoforming.
09:15 22 Q. Do you qualify as a person of ordinary skill
09:15 23 in the art today and also back in 2010?
09:16 24 A. Yes. I do.
09:16 25 Q. Now, again, before we dive into your

09:16 1 conclusions, I'd like to ask just a few brief questions
09:16 2 about the technology in this case. The jury has heard
09:16 3 a lot about two different types of polymers, TPUs and
09:16 4 copolyesters.
09:16 5 Have you heard some of that testimony so far?
09:16 6 A. Yes. I have.
09:16 7 Q. Did Align invent TPUs?
09:16 8 A. No. They did not.
09:16 9 Q. Are all TPUs the same?
09:16 10 A. No. They're quite varied.
09:16 11 Q. How many different types of TPUs are there?
09:16 12 A. There are hundreds to thousands of types of
09:16 13 TPUs.
09:16 14 Q. Now, copolyesters, did Align invent
09:16 15 copolyesters?
09:16 16 A. They did not.
09:16 17 Q. Are all copolyesters the same?
09:16 18 A. No. They are not.
09:16 19 Q. And how many copolyesters are there available
09:16 20 today?
09:16 21 A. Hundreds, hundreds.
09:16 22 Q. Now, let's talk about polymers in the context
09:16 23 of dental care. When were polymers first used for
09:16 24 dental aligners?
09:16 25 A. In the 1940s.

09:16 1 Q. Was Align the first to use polymers for dental
09:17 2 aligners?
09:17 3 A. They were not.
09:17 4 Q. When were clear aligners first developed for
09:17 5 repositioning teeth?
09:17 6 A. Around 1993.
09:17 7 Q. Was Align the first to develop a clear aligner
09:17 8 for repositioning the teeth?
09:17 9 A. No. They were not.
09:17 10 Q. Was Align the first to use a multi-layer
09:17 11 dental aligner?
09:17 12 A. No. They were not.
09:17 13 Q. If we could go to the next slide.
09:17 14 If I could ask you, Dr. Spiegelberg, what does
09:17 15 this slide show?
09:17 16 A. This is showing two multi-layer aligners that
09:17 17 were introduced in 2009 and 2010.
09:17 18 Q. And which ones are you referring to there,
09:17 19 sir?
09:17 20 A. I'm referring to NuBrace and Durasoft.
09:17 21 Q. And what were the characteristics of those two
09:17 22 aligners?
09:17 23 A. They --
09:17 24 Q. Aligner materials, I should say.
09:17 25 A. Sure. They both had a hard layer and a soft

09:17 1 layer.
09:17 2 Q. And the dates, 2009 and 2010 shown on your
09:17 3 slide here, how does -- how do those dates relate to
09:18 4 the dates of Align's claimed invention of the
09:18 5 SmartTrack material?
09:18 6 A. They are before Align's claimed date of
09:18 7 invention of SmartTrack.
09:18 8 Q. All right. Let's go to the next slide.
09:18 9 I'd like to ask you some questions about the
09:18 10 patent background in this case. We just saw that
09:18 11 multi-layer aligner materials existed back in 2009 and
09:18 12 2010. So what did Align say that it invented in its
09:18 13 application for patents that it started filing in 2012?
09:18 14 A. A multi-layer film that had a soft-hard-soft
09:18 15 configuration.
09:18 16 Q. If we could go to the next slide which shows a
09:18 17 portion of the '613 patent called the Abstract.
09:18 18 Could you describe, sir, what's being
09:18 19 described in this slide?
09:18 20 A. This is the abstract from Align's '613 patent.
09:18 21 Q. And what is the abstract discussing or saying
09:18 22 about the '613 patent?
09:19 23 A. It's describing the invention being a dental
09:19 24 appliance that includes a hard polymer layer that's
09:19 25 disposed between two soft layers.

09:19 1 Q. Now, did you review the entire '613 patent,
09:19 2 sir?
09:19 3 A. Yes. I did.
09:19 4 Q. How many times does the specification refer to
09:19 5 a soft-hard-soft configuration?
09:19 6 A. 13 times.
09:19 7 MR. HUNG: Your Honor, objection.
09:19 8 May we approach?
09:19 9 THE COURT: Sure.
09:19 10 (Bench conference.)
09:19 11 MR. HUNG: Your Honor, there's a lot of
09:19 12 characterization of the claims as "if stretched to
09:19 13 cover hard-soft-hard." There's no debate in this case
09:19 14 the claims cover hard-soft-hard. He's trying to revive
09:19 15 the written description argument and also make a claim
09:19 16 construction argument that the claims as stated don't
09:19 17 cover hard-soft-hard. He can make his enablement
09:19 18 argument. He can't say the claims are stretched to
09:19 19 cover hard-soft-hard or the like.
09:19 20 THE COURT: Overruled.
09:19 21 (Bench conference concludes.)
09:20 22 BY MR. ZUBLER:
09:20 23 Q. I believe, just to make sure I caught your
09:20 24 answer on the last question, you said that the
09:20 25 specification refers to soft-hard-soft configuration 13

09:20 1 times. Was that your answer, sir?
09:20 2 A. That's correct.
09:20 3 Q. And if the ladies and gentlemen of the jury
09:20 4 were to take a look at the patents, would they find any
09:20 5 other configurations described in the '613 patent?
09:20 6 A. They would not.
09:20 7 Q. And we're talking here about the '613 patent.
09:20 8 There's three other patents at issue in this case with
09:20 9 respect to materials.
09:20 10 Are the specifications in those patents the
09:20 11 same or different than the specification of the '613
09:20 12 patent that we're looking at right now?
09:20 13 A. They are the same.
09:20 14 MR. ZUBLER: Now, if we could pull up
09:21 15 DTX-462, which has already been entered into evidence.
16 BY MR. ZUBLER:
09:21 17 Q. What is this, sir?
09:21 18 A. This is a declaration from Dr. Li submitted to
09:21 19 the Patent Office.
09:21 20 Q. And this was -- we discussed this a little bit
09:21 21 earlier this week.
09:21 22 MR. ZUBLER: And if we could go to the
09:21 23 last page of this declaration.
24 BY MR. ZUBLER:
09:21 25 Q. When was this declaration submitted by Align

09:21 1 to the Patent Office?
09:21 2 A. In November 2016.
09:21 3 Q. Did Align submit this declaration before or
09:21 4 after Bay Materials launched Zendura FLX?
09:21 5 A. This was before.
09:21 6 MR. ZUBLER: Let's go to Page 3 of this
09:21 7 declaration from 2016.
8 BY MR. ZUBLER:
09:21 9 Q. And there's a section entitled Not
09:21 10 Predictable.
09:21 11 Do you see that, sir?
09:21 12 A. Yes. I do.
09:21 13 Q. At a high level, what is Align describing in
09:21 14 this declaration, in this paragraph or section of the
09:21 15 declaration?
09:21 16 A. Dr. Li's informing the Patent Office that the
09:21 17 development of dental aligners was not predictable.
09:21 18 Q. What evidence does Dr. Li cite to support the
09:22 19 proposition that the development of clear aligners is
09:22 20 unpredictable?
09:22 21 A. She indicates that it took them over seven
09:22 22 years and looking at over 250 different materials to
09:22 23 arrive at a solution.
09:22 24 Q. Now, if we go to Paragraph 4 where we are and
09:22 25 we go about halfway down, there's a sentence that

09:22 1 begins "We found."
09:22 2 MR. ZUBLER: If we could have that
09:22 3 highlighted, please.
09:22 4 And the sentence -- yeah. There we go.
5 BY MR. ZUBLER:
09:22 6 Q. The sentence states: We found that the
09:22 7 resulting orthodontic appliances incorporating the
09:22 8 SmartTrack material had surprisingly superior
09:22 9 properties of modulus, of elasticity, elongation, time
09:22 10 stress-relaxation, durability, and thermoform ability.
09:22 11 For a layperson, Dr. Spiegelberg, what does
09:22 12 that mean?
09:22 13 A. Dr. Li's informing the Patent Office of all
09:22 14 the different materials they looked at, only the
09:22 15 SmartTrack material had superior properties in these
09:22 16 four categories over the previous technology.
09:23 17 Q. What material is she referring to here, sir?
09:23 18 A. SmartTrack.
09:23 19 Q. What's the configuration of hard and soft
09:23 20 layers of SmartTrack, sir?
09:23 21 A. It's a soft-hard-soft configuration.
09:23 22 Q. Now, let's look at Paragraph 5 which
09:23 23 Mr. Mueller discussed yesterday with Dr. Reitman.
09:23 24 There's a sentence here that says -- it begins
09:23 25 "During." During evaluation of the over 250 materials,

09:23 1 only the materials of the instant claims met Align's
09:23 2 development criteria.
09:23 3 Do you see that sentence, sir?
09:23 4 A. Yes. I do.
09:23 5 Q. And again, for a layperson, what does that
09:23 6 mean?
09:23 7 A. Of all the materials that they examined, the
09:23 8 250, only the soft-hard-soft configuration met their
09:23 9 design criteria.
09:23 10 Q. And I want to focus on the language that says
09:23 11 "only the materials of the instant claims."
09:23 12 What is that referring to? What were the
09:23 13 instant claims?
09:23 14 A. The instant claims in this document were
09:23 15 soft-hard-soft.
09:23 16 Q. Now, have you reviewed the entire '613 patent,
09:24 17 sir?
09:24 18 A. Yes.
09:24 19 Q. And I believe you testified before that --
09:24 20 well, I'll ask you the question.
09:24 21 What types of configurations are described in
09:24 22 the '613 patent?
09:24 23 A. Soft-hard-soft.
09:24 24 Q. Is the statement here in Paragraph 5
09:24 25 consistent or inconsistent with the specification of

09:24 1 the '613 patent?
09:24 2 A. It's consistent.
09:24 3 Q. I'm sorry. Could you repeat that?
09:24 4 A. It is consistent.
09:24 5 Q. Thank you.
09:24 6 Now, when do you understand that Align first
09:24 7 learned about Zendura FLX? Was that before or after
09:24 8 this declaration?
09:24 9 A. It was after.
09:24 10 Q. And how did Align executives react to the
09:24 11 announcement of Zendura FLX?
09:24 12 A. They sounded concerned.
09:24 13 Q. All right.
09:24 14 MR. ZUBLER: Could we look at DTX-200,
09:24 15 which has already been admitted?
16 BY MR. ZUBLER:
09:24 17 Q. And what is DTX-200, sir?
09:24 18 A. This is an e-mail exchange between Joe Hogan,
09:25 19 the CEO of Align, and Srini Kaza, the VP of research at
09:25 20 Align.
09:25 21 Q. Now, if we could go to the bottom of Page 3 of
09:25 22 DTX-200, and you see there's an e-mail from Joe Hogan
09:25 23 to Srini Kaza dated January 18, 2019.
09:25 24 Do you see that, sir?
09:25 25 A. Yes. I do.

09:25 1 Q. Who is Joe Hogan?
09:25 2 A. CEO of Align.
09:25 3 Q. Who's Srini Kaza?
09:25 4 A. The VP of research at Align.
09:25 5 Q. Now, the e-mail begins: Hi Srini. Chunhua
09:25 6 sent a previous note to me on the material so I know it
09:25 7 will be better than EX30.
09:25 8 Do you see that?
09:25 9 A. Yes. I do.
09:25 10 Q. Who's Chunhua?
09:25 11 A. That's Dr. Li.
09:25 12 Q. And what is the material being discussed here?
09:25 13 A. Zendura FLX.
09:25 14 Q. Now, Mr. Hogan goes on: I am really worried
09:25 15 about marginalizing ST.
09:25 16 What is ST?
09:25 17 A. SmartTrack.
09:25 18 Q. Now, let's look at Mr. Kaza's response to this
09:25 19 e-mail. And if we could go to the sentence that begins
09:25 20 "I hope we will."
09:26 21 It says: I hope we will find -- actually,
09:26 22 let's -- I hope we will find -- there we go.
09:26 23 It's the sentence that begins: I hope we will
09:26 24 find some good points of differentiation, but my
09:26 25 concern is that this has clearly been on people's minds

09:26 1 for a few years now, and unless we can stop with IP,
09:26 2 they will keep coming.
09:26 3 Do you see that, sir?
09:26 4 A. Yes.
09:26 5 Q. What do you understand IP to mean in that
09:26 6 sentence?
09:26 7 A. IP means intellectual property; in other
09:26 8 words, patents.
09:26 9 Q. Based on the evidence you've seen, what did
09:26 10 Align do next with respect to Zendura FLX and Bay
09:26 11 Materials?
09:26 12 A. They filed some more patents.
09:26 13 Q. And when you file -- when they filed for more
09:26 14 patents, did they submit further declarations to the
09:26 15 Patent Office?
09:26 16 A. Yes. They did.
09:26 17 MR. ZUBLER: Let's look at DTX-84, which
09:26 18 has already been admitted.
19 BY MR. ZUBLER:
09:26 20 Q. This is entitled Declaration of Chunhua Li
09:27 21 under 37 CFR 1.132.
09:27 22 What is this document, sir?
09:27 23 A. This is the second declaration that Dr. Li
09:27 24 submitted to the Patent Office.
09:27 25 Q. And we looked at this previously with

09:27 1 Mr. Mueller and Dr. Li.
09:27 2 When was this declaration submitted, before or
09:27 3 after Align learned about Zendura FLX?
09:27 4 A. After.
09:27 5 Q. And approximately how long after they learned
09:27 6 it?
09:27 7 A. I think it was about eight months after.
09:27 8 Q. Now, did you prepare anything to help identify
09:27 9 the differences between the original declaration that
09:27 10 Align submitted and the revised declaration?
09:27 11 A. Yes. I did.
09:27 12 Q. If I could ask you to look at Tab 11 of your
09:27 13 binder, sir. DTX-422.
09:27 14 Do you see it, sir?
09:27 15 A. I do.
09:27 16 Q. What is this?
09:27 17 A. This is a redline comparison between the first
09:28 18 declaration and the second declaration.
09:28 19 MR. ZUBLER: Your Honor, we move the
09:28 20 admission of DTX-422.
09:28 21 MR. HUNG: No objection.
09:28 22 THE COURT: Admitted.
09:28 23 BY MR. ZUBLER:
09:28 24 Q. So now let's look at the redline. And what is
09:28 25 the purpose of a redline, sir?

09:28 1 A. It allows one to quickly see what changes were
09:28 2 made between two documents.
09:28 3 Q. Now, previously we looked at two different
09:28 4 statements, one in Paragraph 4, one in Paragraph 5 of
09:28 5 the original declaration. Let's look at each of those
09:28 6 statements now in order.
09:28 7 So let's look at your redline, starting at
09:28 8 Paragraph 4, and we'll focus in again on the sentence
09:28 9 that begins "We found."
09:28 10 And the sentence now reads: We found that the
09:28 11 materials with both hard and soft polymer layers
09:28 12 according to the current claims in orthodontic
09:28 13 appliances had surprisingly superior properties.
09:28 14 Do you see that, sir?
09:28 15 A. Yes. I do.
09:28 16 Q. Now, you testified that in the prior
09:28 17 declaration, Align was referring here to the SmartTrack
09:29 18 soft-hard-soft configuration.
09:29 19 What configuration or configurations is Align
09:29 20 discussing now?
09:29 21 A. They're indicating that not just SmartTrack
09:29 22 but a variety of hard-soft-hard configurations meet
09:29 23 their design criteria.
09:29 24 Q. Dr. Spiegelberg, have you analyzed, from a
09:29 25 scientific perspective, whether this revised statement

09:29 1 to the Patent Office was accurate?
09:29 2 A. Yes. I have.
09:29 3 Q. How did you do that?
09:29 4 A. I looked at Dr. Li's actual testing data of
09:29 5 the different multi-layer films she examined.
09:29 6 Q. Did Align submit that testing data to the
09:29 7 Patent Office?
09:29 8 A. They did not.
09:29 9 Q. Was that data published publicly so the Patent
09:29 10 Office or the public could review it?
09:29 11 A. No.
09:29 12 Q. So then how were you able to look at that
09:29 13 data?
09:29 14 A. It was produced in this litigation.
09:29 15 Q. Now, having reviewed the actual testing data
09:29 16 that wasn't submitted to the Patent Office, what, if
09:29 17 anything, did you conclude about the accuracy of the
09:29 18 statement we're looking at in the revised declaration?
09:29 19 A. It is not accurate.
09:29 20 Q. And what are the reasons it's not accurate?
09:30 21 A. The various materials do not have superior
09:30 22 properties over the previous material.
09:30 23 MR. ZUBLER: Okay. Let's look now at
09:30 24 JTX-077, which is already admitted.
09:30 25 BY MR. ZUBLER:

09:30 1 Q. All right. Can you see this document, sir?
09:30 2 A. Yes. I can.
09:30 3 Q. A lot of numbers here. What is this?
09:30 4 A. This is the testing data that was provided by
09:30 5 Align showing all the different materials they
09:30 6 considered, demonstrating that the -- the data from
09:30 7 their testing.
09:30 8 Q. Okay. So what's on each row of this
09:30 9 spreadsheet, sir?
09:30 10 A. Well, we see tensile data, durability data,
09:30 11 stress relaxation, flexural modulus, et cetera.
09:30 12 Q. Actually, let me just ask the question.
09:30 13 What's shown on each row of this spreadsheet?
09:30 14 A. Oh, each row is a different formulation that
09:30 15 they considered, different set of films, basically.
09:30 16 Q. And then what's shown on the columns?
09:30 17 A. The columns are the actual testing data.
09:30 18 Q. Now, going back to the declaration, how many
09:31 19 materials from this testing data was Align referring to
09:31 20 in its revised declaration?
09:31 21 A. 23.
09:31 22 Q. And of those 23 materials that Align was
09:31 23 referring to in the declaration, how many of those were
09:31 24 superior to EX30 based on the four characteristics that
09:31 25 Align mentioned in its revised declaration?

09:31 1 A. None of them.
09:31 2 Q. Can you describe what you mean by that?
09:31 3 A. None of the 23 multi-layer films that meet the
09:31 4 specifications in the claims had superior properties
09:31 5 over the EX30 in all four categories.
09:31 6 Q. Now, did Align's expert, Dr. Reitman, did she
09:31 7 do her own analysis of Align's testing data?
09:31 8 A. Yes. She did.
09:31 9 Q. What materials, if any, did Dr. Reitman find
09:31 10 that were better than EX30 along each of the four
09:31 11 metrics that Align listed in its declaration?
09:31 12 A. None.
09:31 13 MR. ZUBLER: So let's go back to
09:31 14 Paragraph 4 of the redline DTX-422, in the sentence
09:32 15 that begins "We found," if we could highlight that
09:32 16 again.
17 BY MR. ZUBLER:
09:32 18 Q. Was that statement in Align's revised
09:32 19 declaration true or false?
09:32 20 A. It was false.
09:32 21 Q. All right. Let's look at the second statement
09:32 22 in Paragraph 5 that we looked at before.
09:32 23 This was the sentence --
09:32 24 MR. ZUBLER: We can pull it up. And it
09:32 25 says: During evaluation of the over 250 materials. If

09:32 1 we could highlight that sentence.
2 BY MR. ZUBLER:
09:32 3 Q. Now, in this sentence, there's a change in the
09:32 4 text. So it previously said "only the materials of the
09:32 5 instant claims met Align's development criteria," and
09:32 6 now it says "only the claims according to the
09:32 7 current" -- "only the materials according to the
09:32 8 current claims met Align's development criteria."
09:32 9 Do you see that, sir?
09:32 10 A. Yes. I do.
09:32 11 Q. Now, at the time of the revised declaration,
09:32 12 what was the scope of the current claims as listed here
09:32 13 in the declaration?
09:32 14 A. The current claims are much broader, and they
09:33 15 consider materials beyond a soft-hard-soft
09:33 16 configuration.
09:33 17 MR. ZUBLER: If we could look at the next
09:33 18 slide in your presentation, DDX-7.12.
19 BY MR. ZUBLER:
09:33 20 Q. I'd ask you to focus first on the left side of
09:33 21 this demonstrative. What's shown there, sir?
09:33 22 A. Dr. Li's original declaration to the Patent
09:33 23 Office only considered a soft-hard-soft configuration
09:33 24 as a material that met their design -- or original
09:33 25 Align's development criteria.

09:33 1 Q. And what's shown on the right side of the
09:33 2 slide, sir?
09:33 3 A. This is the materials that Dr. Li is now
09:33 4 saying meets their development criteria in the revised
09:33 5 declaration.
09:33 6 Q. Let me see if I understand that. There's a
09:33 7 lot of letters on here, HSSS, HHSS, and so forth.
09:33 8 What are you talking -- what are you showing
09:33 9 there?
09:33 10 A. S refers to a soft layer. H refers to a hard
09:34 11 layer. And in the original declaration, Dr. Li only
09:34 12 considered soft-hard-soft as meeting their development
09:34 13 criteria. In the revised declaration, multiple
09:34 14 configurations now meet their development criteria.
09:34 15 Q. Now, is the statement that Dr. Li made in the
09:34 16 revised declaration, is that based on the same or
09:34 17 different data than the data she used in the original
09:34 18 declaration?
09:34 19 A. It's based on the same data.
09:34 20 Q. How do you know that?
09:34 21 A. No other data was produced.
09:34 22 Q. So if the data didn't change, how could Align
09:34 23 first state in the original declaration that only the
09:34 24 soft-hard-soft material met Align's development
09:34 25 criteria and then later state, based on the same data,

09:34 1 that a larger set of material configurations met
09:34 2 Align's development criteria?
09:34 3 A. I don't know. It doesn't make any sense.
09:34 4 Q. Can you think of any technical or scientific
09:34 5 reason that would justify that change?
09:34 6 A. No.
09:35 7 MR. ZUBLER: I'd like to now ask you --
09:35 8 or show JTX-79, which has already been admitted. We
09:35 9 could look at Sheet 2.
10 BY MR. ZUBLER:
09:35 11 Q. Dr. Spiegelberg, what's being shown here in
09:35 12 JTX-79?
09:35 13 A. This is another spreadsheet that Align
09:35 14 produced in this litigation that describes the various
09:35 15 materials they considered and the composition and the
09:35 16 reasons that they rejected them.
09:35 17 Q. Okay. What's shown on each row of this
09:35 18 spreadsheet?
09:35 19 A. Each row is a different formulation that was
09:35 20 considered.
09:35 21 Q. What's shown on each column of -- or not each
09:35 22 column, but what is shown generally on the columns in
09:35 23 the spreadsheet?
09:35 24 A. The columns indicate the materials, the
09:35 25 orientation of the materials, in other words, like a

09:35 1 soft-hard-soft configuration, and the reasons that they
09:35 2 rejected these based on testing.
09:35 3 Q. What is Column G, sir?
09:35 4 A. Column G is the reasons that Align rejected
09:35 5 these materials from further consideration.
09:35 6 Q. Now, of all the materials that are included in
09:36 7 this testing data, how many were multi-layer materials?
09:36 8 A. Around 68.
09:36 9 Q. And of the materials on this list that were
09:36 10 multi-layer materials, how many did Align reject?
09:36 11 A. All but three.
09:36 12 Q. What were the materials that Align didn't
09:36 13 reject?
09:36 14 A. The three were the precursors to SmartTrack.
09:36 15 Q. And what was the configuration of these three
09:36 16 materials that Align didn't reject?
09:36 17 A. Soft-hard-soft configuration.
09:36 18 Q. Did Align ever tell the Patent Office that it
09:36 19 had rejected all materials except soft-hard-soft
09:36 20 materials?
09:36 21 A. No.
09:36 22 Q. So going back now to the statement in
09:36 23 Paragraph 5 that we looked at in the revised
09:36 24 declaration, the statement that begins "During
09:36 25 evaluation of the over 250 materials, only the

09:36 1 materials according to the current claims met Align's
09:36 2 development criteria," is that statement in the revised
09:36 3 declaration true or false?
09:36 4 A. It is false.
09:36 5 Q. Now, based on your evaluation, sir, of the
09:37 6 records of the patent prosecution in the '613 patent at
09:37 7 the Patent Office, is there any evidence regarding
09:37 8 whether Align's false statements were material to the
09:37 9 issuance of the patent claims?
09:37 10 A. Yes.
09:37 11 Q. What's the basis for your statement?
09:37 12 A. The notice of allowance for the patent.
09:37 13 Q. All right.
09:37 14 MR. ZUBLER: Let's look at DTX-323. This
09:37 15 has not been admitted, actually. So if we could,
09:37 16 that's in your binder at Tab 14.
17 BY MR. ZUBLER:
09:37 18 Q. What is this, sir?
09:37 19 A. This is the notice of allowance the Patent
09:37 20 Office sent to Align.
09:37 21 MR. ZUBLER: Your Honor, we move the
09:37 22 admission of DTX-323.
09:38 23 MR. HUNG: No objection.
09:38 24 THE COURT: Admitted.
25 MR. ZUBLER: If we could publish that to

09:38 1 the jury.
09:38 2 BY MR. ZUBLER:
09:38 3 Q. What is a notice of allowance at the United
09:38 4 States Patent and Trademark Office, sir?
09:38 5 A. It's an official document where the Patent
09:38 6 Office informs the inventor that their patent is going
09:38 7 to be allowed.
09:38 8 Q. And if we could go to the heading "Allowable
09:38 9 Subject Matter" on Page 6 of the PDF, Page 2 of the
09:38 10 document, I believe.
09:38 11 What is this section "Allowable Subject
09:38 12 Matter" describing?
09:38 13 A. This is the narration from the patent examiner
09:38 14 explaining why they gave the allowance of the patent.
09:38 15 Q. And if we could now go to the next page, and
09:38 16 there's a sentence that begins "The applicant's
09:38 17 affidavit."
09:38 18 Do you see that, sir?
09:38 19 A. Yes.
09:38 20 Q. And it states: The applicant's affidavit was
09:38 21 also found persuasive, in particular attention to the
09:38 22 statement of the appliances recited in the claims of
09:38 23 the '665 application exhibit unexpectedly positive
09:38 24 results over previously known applications (sic).
09:39 25 Do you see that?

09:39 1 A. Yes, sir.
09:39 2 Q. What is the affidavit described in that
09:39 3 sentence?
09:39 4 A. This is Dr. Li's declaration.
09:39 5 Q. And what is the examiner saying about Dr. Li's
09:39 6 declaration?
09:39 7 A. She is saying that she found it persuasive.
09:39 8 Q. When the examiner made this statement and
09:39 9 allowed the claims, did she have access to Align's
09:39 10 testing data or not?
09:39 11 A. She did not.
09:39 12 Q. What actual material testing data about
09:39 13 Align's materials did Align submit to the Patent
09:39 14 Office?
09:39 15 A. No data was submitted.
09:39 16 Q. What, if anything, could the Patent Office
09:39 17 have done if it had received that data?
09:39 18 A. They could have done the same thing that I
09:39 19 did.
09:39 20 Q. Now, yesterday in court were you here when
09:39 21 Mr. Hung showed -- and actually, it might have -- I'm
09:39 22 not sure which day it was. But Mr. Hung showed Dr. Li
09:39 23 Figures 5 through 8 of the '613 patent.
09:39 24 Do you recall that, sir?
09:39 25 A. Yes. I do.

09:39 1 Q. And Mr. Hung suggested this was evidence that
09:39 2 Align had submitted data to the Patent Office in the --
09:39 3 in the patent.
09:39 4 Do you recall that?
09:40 5 A. Yes.
09:40 6 MR. ZUBLER: And let's pull up Figure 7
09:40 7 of the '613 patent, JTX-002.
8 BY MR. ZUBLER:
09:40 9 Q. This is one of the figures that Mr. Hung
09:40 10 showed Dr. Li.
09:40 11 Does this figure, sir, provide any data to the
09:40 12 Patent Office regarding Align's alleged invention?
09:40 13 A. It does not.
09:40 14 Q. Why do you say that?
09:40 15 A. There's no description of what Material 1 or
09:40 16 Material 2 is anywhere in the patent. So there's no
09:40 17 information about that other than Material 2 is a
09:40 18 multi-layer film but a generic one.
09:40 19 The force plot here shows no data. There's no
09:40 20 numbers on it, so a person of ordinary skill has no
09:40 21 idea what kind of forces are being applied. And
09:40 22 there's no information on what this X-axis is.
09:40 23 So this is just a drawing. It's not data.
09:40 24 Q. Does the patent provide any numerical data
25 about the nature or performance of what are called

09:40 1 Materials 1 and Material 2?
09:40 2 A. They do not.
09:40 3 Q. This is one of the four figures that Mr. Hung
09:40 4 showed Dr. Li. I'm not going to go through them all.
09:41 5 Do the other figures that Mr. Hung showed
09:41 6 Dr. Li provide any data regarding Align's alleged
09:41 7 invention?
09:41 8 A. No. There's no useful data there.
09:41 9 Q. Now, we've talked a lot about the '613 patent
09:41 10 and the prosecution at the Patent Office of the '613
09:41 11 patent. But there are three other materials patents in
09:41 12 this case, the '384 patent, the '090, and the '091
09:41 13 patent. How do those patents relate to the '613
09:41 14 patent?
09:41 15 A. Those are all continuations of the '613
09:41 16 patent.
09:41 17 Q. What's a continuation of the '613 patent?
09:41 18 A. It has the same specifications, just some
09:41 19 modifications to the claims.
09:41 20 Q. Are the claims of those other three patents
09:41 21 similar or dissimilar to the claims of the '613 patent?
09:41 22 A. They're similar.
09:41 23 Q. Now, when Align was applying for these other
09:41 24 three patents after the '613, did it ever modify or
09:41 25 correct the representations that it made to the Patent

09:41 1 Office in its declarations that we looked at
09:41 2 previously?
09:42 3 A. No. They did not.
09:42 4 Q. And if we could go to Slide 7.11, DDX-7.11.
09:42 5 So to conclude, sir, what did you conclude
09:42 6 based on your analysis of the revised Align declaration
09:42 7 in 2019?
09:42 8 A. That it contained at least two false
09:42 9 statements.
09:42 10 Q. Were you here yesterday for the testimony of
09:42 11 Mr. John Lahlouh?
09:42 12 A. I was.
09:42 13 Q. And are you aware that Align has accused
09:42 14 Mr. Lahlouh of copying Align's SmartTrack material and
09:42 15 patents?
09:42 16 A. I am.
09:42 17 Q. Now, based on your analysis in this case,
09:42 18 including the examination that you witnessed yesterday
09:42 19 of Mr. Lahlouh, are you aware of any evidence that
09:42 20 Mr. Lahlouh or ClearCorrect copied Align's SmartTrack
09:42 21 material or patents?
09:42 22 A. No. I'm not.
09:42 23 Q. Is Zendura FLX a copy of SmartTrack?
09:42 24 A. It is not.
09:43 25 MR. ZUBLER: Your Honor, we'd like to use

09:43 1 a demonstrative slide now that contains some
09:43 2 confidential information. I don't think we need to
09:43 3 seal the courtroom because I'm not planning to elicit
09:43 4 that orally, but I would ask if we could turn any
09:43 5 public gallery video monitor off so the information
09:43 6 remains confidential.
09:43 7 THE COURT: Sure.
09:43 8 BY MR. ZUBLER:
09:43 9 Q. Dr. Spiegelberg, with respect to this slide
09:43 10 that you prepared, what are you generally at a high
09:43 11 level trying to show with this slide?
09:43 12 A. This is showing the differences between
09:43 13 ClearCorrect's Zendura FLX material and Invisalign's
09:43 14 SmartTrack material.
09:43 15 Q. Okay. Let's look at the middle column
09:43 16 entitled Patient Experience Differences.
09:43 17 How, if at all, is Zendura FLX different from
09:43 18 SmartTrack with respect to the patient experiences?
09:43 19 A. Because of the configurations, Zendura FLX
09:43 20 will be more stain resistant and have a greater ability
09:43 21 to move teeth, whereas SmartTrack will initially be
09:44 22 more comfortable with the soft layer on the outside and
09:44 23 has easier removal and insertion forces.
09:44 24 Q. Now, let's look on the far column on the
09:44 25 right, physical differences. And you've listed some

09:44 1 various items there, some of which again I will not
09:44 2 state and I'll ask you not to state in public in court
09:44 3 for confidentiality reasons.
09:44 4 Let's start with the first line,
09:44 5 configuration. How are the configurations of
09:44 6 ClearCorrect Zendura FLX and Invisalign SmartTrack the
09:44 7 same or different?
09:44 8 A. Zendura FLX has a hard-soft-hard
09:44 9 configuration. SmartTrack has a soft-hard-soft
09:44 10 configuration. So the opposite.
09:44 11 Q. And with respect to the next item, layer
09:44 12 thickness, how do the layer thicknesses in Zendura FLX
09:44 13 compare to SmartTrack?
09:44 14 A. Zendura FLX has the same thickness for all
09:44 15 three layers, whereas SmartTrack has a much thicker
09:45 16 inner layer and thinner outer layers.
09:45 17 Q. Now, I want to ask you about the next two
09:45 18 items, which are the TPUs and the copolyesters that are
09:45 19 in both products. And here is the place, sir, where I
09:45 20 don't want you to mention any of the specific item
09:45 21 names or numbers there, sir.
09:45 22 How do the TPUs and copolyesters in Zendura
09:45 23 FLX and SmartTrack compare to each other? Are they the
09:45 24 same or are they different?
09:45 25 A. They are using different TPUs and

09:45 1 copolyesters.
09:45 2 Q. Last item, the manufacturing method. How do
09:45 3 the manufacturing methods for Zendura FLX and
09:45 4 SmartTrack compare to each other? Are they similar or
09:45 5 dissimilar?
09:45 6 A. They are different manufacturing processes.
09:45 7 Q. One last question, sir, about the Patent
09:45 8 Office examination that we were discussing earlier in
09:45 9 the prosecution of these patents.
09:45 10 Were you here for Align's opening statement,
09:46 11 sir?
09:46 12 A. Yes. I was.
09:46 13 Q. And do you recall that Ms. Durie stated in her
09:46 14 opening statement, and I quote: And if you see that
09:46 15 someone else is using your invention, you're allowed
09:46 16 under the rules to go back to the Patent Office and say
09:46 17 that's actually using our invention.
09:46 18 Do you recall that statement, sir?
09:46 19 A. Yes. I do.
09:46 20 Q. Based on all of your analysis in this case,
09:46 21 including your examination of the prosecution records
09:46 22 at the Patent Office, have you seen any evidence that
09:46 23 Align ever went to the Patent Office and told the
09:46 24 Patent Office that Zendura FLX was using Align's
09:46 25 invention?

09:46 1 A. No. I did not.
09:46 2 MR. ZUBLER: Now, if we could go to
09:46 3 DDX-7.13.
4 BY MR. ZUBLER:
09:46 5 Q. Let's move from the patent background to the
09:46 6 infringement analysis. What has Align alleged with
09:46 7 respect to infringement in this case?
09:46 8 A. They are alleging that Zendura FLX infringes
09:46 9 their patents.
09:46 10 Q. All right. If we could go to Slide -- the
09:47 11 next slide, DDX-7.14.
09:47 12 This shows '613 patent, Claim 1. There's some
09:47 13 highlighting on here in yellow. What are you
09:47 14 highlighting, sir?
09:47 15 A. One of the elements of the claim requires a
09:47 16 soft polymer layer having an elongation at break
09:47 17 greater than 200 percent.
09:47 18 Q. Which asserted claims across all of the
09:47 19 asserted patents have this elongation at break
09:47 20 requirement?
09:47 21 A. All of them.
09:47 22 Q. And what is your conclusion that we'll come to
09:47 23 as to whether the elongation at break requirement is
09:47 24 met by Zendura FLX?
09:47 25 A. It is not met by Zendura FLX.

09:47 1 Q. And what do you understand Align has to show
09:47 2 in order to prove infringement against my client
09:47 3 ClearCorrect?
09:47 4 A. Align has to show that every element of the
09:47 5 claim is met by Zendura FLX.
09:47 6 Q. What if Align fails to prove even one element
09:47 7 of a claim such as the elongation at break element?
09:47 8 A. Then Zendura FLX does not infringe.
09:47 9 Q. Now, at a high level, what did you conclude
09:48 10 about whether there's infringement of the elongation at
09:48 11 break limitation here, sir?
09:48 12 A. I concluded that Zendura FLX does not
09:48 13 infringe.
09:48 14 Q. All right. Now, what is elongation at break?
09:48 15 A. Elongation at break is basically how far you
09:48 16 can stretch a material before it breaks.
09:48 17 Q. Now, were you in here in court yesterday when
09:48 18 Dr. Reitman said that the proper way to analyze and
09:48 19 apply these claims for infringement in this case is to
09:48 20 look at the individual polymers before they are
09:48 21 incorporated into the multi-layer Zendura FLX material?
09:48 22 Do you recall that testimony?
09:48 23 A. Yes. I do.
09:48 24 Q. Do you agree with her testimony?
09:48 25 A. No. I disagree.

09:48 1 Q. Why not?
09:48 2 A. Because the important property is the material
09:48 3 in its final configuration, in other words, in a
09:48 4 multi-layer film, not before it's made into the film.
09:48 5 Q. Okay. Let's look at the '613 patent, Claim 1,
09:48 6 and particularly DDX-7.17.
09:49 7 Sir, in '613 patent, Claim 1, begins "A method
09:49 8 of making."
09:49 9 Do you see that language?
09:49 10 A. Yes. I do.
09:49 11 Q. This claim describes a method for making what?
09:49 12 A. A dental appliance.
09:49 13 Q. And what kind -- a dental appliance for what
09:49 14 purpose?
09:49 15 A. For positioning teeth.
09:49 16 Q. And what is the dental appliance comprised of?
09:49 17 A. It's comprised of providing a sheet that has
09:49 18 three or more polymer layers.
09:49 19 Q. Okay. The word "sheet," I'm not sure that's
09:49 20 been discussed in this trial very much.
09:49 21 What's a sheet? Is that a piece of paper?
09:49 22 A. No. It's like a polymer film, basically.
09:49 23 Q. And as described in the '613 patent, Claim 1,
09:49 24 what is the sheet comprised of?
09:49 25 A. It is comprised of a hard polymer layer with

09:49 1 multiple -- or with certain properties and a soft
09:49 2 polymer layer with certain properties.
09:49 3 Q. Does this claim describe making a sheet?
09:49 4 A. No. The sheet's already made at this point.
09:50 5 Q. Where does the sheet come from for this claim?
09:50 6 A. From a manufacturer.
09:50 7 Q. Now, sir, as a person of ordinary skill in the
09:50 8 art, do you understand this claim language should be
09:50 9 applied to the characteristics of the individual
09:50 10 polymers before they are included in a multi-layer
09:50 11 sheet or after they are included in a multi-layer
09:50 12 sheet?
09:50 13 A. After.
09:50 14 Q. And what claim language informs that opinion
09:50 15 of yours, sir?
09:50 16 A. The fact that the sheet is already in
09:50 17 existence. So the hard polymer layer and the soft
09:50 18 polymer layer already have these properties at this
09:50 19 point.
09:50 20 Q. Let's look again at the claim language at the
09:50 21 beginning of this claim: A method for making a dental
09:50 22 appliance for positioning a patient's teeth.
09:50 23 For a dental appliance for positioning a
09:50 24 patient's teeth, what is relevant, the characteristics
09:50 25 of individual polymers before they're included in a

09:50 1 multi-layer sheet or after they're included in a
09:51 2 multi-layer sheet?
09:51 3 A. Since the properties influence how the dental
09:51 4 appliance is effective at moving teeth, it has to be
09:51 5 after it's incorporated into the multi-layer films, the
09:51 6 properties after it's been manufactured.
09:51 7 Q. Let's now talk about how you measure the
09:51 8 characteristics of the layers within a multi-layer
09:51 9 material.
09:51 10 Can you measure the elongation at break of
09:51 11 each layer in a multi-layer material?
09:51 12 A. Yes.
09:51 13 Q. How?
09:51 14 A. By doing tensile testing.
09:51 15 Q. And what is tensile testing at a high level,
09:51 16 sir?
09:51 17 A. Tensile testing is taking a sample and pulling
09:51 18 it apart and see how far it can stretch before it
09:51 19 breaks.
09:51 20 Q. Now, did you hear Dr. Reitman say that you
09:51 21 can't measure the elongation at break of individual
09:51 22 layers within a multi-layer material?
09:51 23 A. Yes. I did.
09:51 24 Q. And do you agree with her or not?
09:51 25 A. I do not.

09:51 1 Q. Why not?
09:51 2 A. Because by testing a multi-layer -- tensile
09:52 3 testing a multi-layer film, you are testing each layer.
09:52 4 Q. Did you perform testing of Zendura FLX in this
09:52 5 case, sir?
09:52 6 A. Yes.
09:52 7 Q. Okay. We're going to come back to that
09:52 8 testing in more detail later, but in this case, were
09:52 9 you able to measure the elongation at break of
09:52 10 individual layers within the Zendura FLX multi-layer
09:52 11 material?
09:52 12 A. Yes.
09:52 13 Q. Now, when you're testing, when did the
09:52 14 individual layers break relative to each other?
09:52 15 A. For four of the specimens, they tested -- they
09:52 16 broke almost at the same time. One of the specimens,
09:52 17 the TPU layer broke about three seconds later, after
09:52 18 the copolyester layer is broken.
09:52 19 Q. Now, if all we know -- if you're doing this
09:52 20 testing or pulling of the Zendura FLX material, if all
09:52 21 we know is that the entire material breaks at a certain
09:52 22 elongation at break, what does that tell you about the
09:52 23 elongation of break of one of the layers, such as the
09:52 24 middle soft layer?
09:52 25 A. It shows that's the highest elongation of

09:53 1 break it could have. It may be a bit lower than that,
09:53 2 but that's the highest value it could have.
09:53 3 Q. Now, in this case did either Align or Bay
09:53 4 Materials conduct any testing of the elongation at
09:53 5 break of Zendura FLX before this litigation?
09:53 6 A. Yes. Both companies did.
09:53 7 MR. ZUBLER: If we could pull up DTX-417,
09:53 8 which has already been admitted into evidence.
9 BY MR. ZUBLER:
09:53 10 Q. What is this document, sir?
09:53 11 A. This is a testing report from Align materials
09:53 12 on Zendura FLX.
09:53 13 Q. And when did Align perform this testing?
09:53 14 A. This was before the litigation.
09:53 15 Q. And what protocol did Align use to do this
09:53 16 testing?
09:53 17 A. They used ASTM D638.
09:53 18 Q. All right.
09:53 19 MR. ZUBLER: If we could go to DDX-7.18
09:53 20 which excerpts some of that document.
21 BY MR. ZUBLER:
09:53 22 Q. What were the results of Align's testing as
09:53 23 shown here?
09:53 24 A. The results from Zendura FLX, which are shown
09:54 25 by the orange bars on this plot, indicate that Zendura

09:54 1 FLX had a elongation of a break between 123.7 percent
09:54 2 up to 139.6 percent.
09:54 3 Q. And what does this testing indicate about the
09:54 4 elongation at break of the TPU layer within Zendura
09:54 5 FLX?
09:54 6 A. That it has a elongation of break well below
09:54 7 200 percent.
09:54 8 Q. Now, let me make sure I understand. You said
09:54 9 this testing occurred -- well, I'll ask you this
09:54 10 question: When did this testing occur, before or after
09:54 11 Align sued ClearCorrect?
09:54 12 A. This was before.
09:54 13 Q. And Align, I believe you said, testified --
09:54 14 strike that.
09:54 15 Align -- you testified that Align found that
09:54 16 the elongation at break of Zendura FLX was greater than
09:54 17 or less than 200 percent?
09:54 18 A. Much less than 200 percent.
09:54 19 Q. But if Align's own testing showed that the
09:54 20 elongation at break was less than 200 percent, how can
09:55 21 Align accuse ClearCorrect of infringing Align's patents
09:55 22 which require an elongation at break greater than
09:55 23 200 percent?
09:55 24 A. I don't know. Doesn't make any sense.
09:55 25 Q. Now let's turn to Bay Materials' testing.

09:55 1 MR. ZUBLER: If we could pull up
09:55 2 DDX-7.19.
3 BY MR. ZUBLER:
09:55 4 Q. What is this showing, sir?
09:55 5 A. This shows the test configuration that Bay
09:55 6 Materials used to test the Zendura FLX.
09:55 7 Q. And what protocol did Bay Materials use for
09:55 8 this testing?
09:55 9 A. They also did D638.
09:55 10 Q. And when did this testing occur?
09:55 11 A. This was before litigation.
09:55 12 MR. ZUBLER: And if we could go to
09:55 13 DDX-7.20.
14 BY MR. ZUBLER:
09:55 15 Q. What were the results of this testing?
09:55 16 A. Bay Materials found that Zendura FLX had an
09:55 17 elongation of break around 102 percent.
09:55 18 Q. And what does this testing indicate was the
09:55 19 elongation at break of the TPU soft layer within
09:56 20 Zendura FLX?
09:56 21 A. The TPU layer would have an elongation of
09:56 22 break around 102 percent, much less than 200 percent.
09:56 23 Q. Was this testing by Bay Materials done before
09:56 24 or after Align sued ClearCorrect?
09:56 25 A. This was done before.

09:56 1 Q. Now, Dr. Spiegelberg, have you done testing on
09:56 2 Zendura FLX?
09:56 3 A. I have.
09:56 4 Q. And what protocol did you apply, sir?
09:56 5 A. I also did D638.
09:56 6 MR. ZUBLER: If we could go to DDX-7.21.
7 BY MR. ZUBLER:
09:56 8 Q. I want to ask you, how did you perform your
09:56 9 testing? What is shown in this figure?
09:56 10 A. This is a photo from my laboratory. This
09:56 11 shows a load frame which is used to do tensile testing
09:56 12 on polymers. And the sample, which is cut into what's
09:56 13 called a dog bone, is placed between two grips, a
09:56 14 stationary grip on the bottom and then a moving grip on
09:56 15 top. The moving grip separates the sample at a known
09:56 16 rate. And then you measure how long it takes for it to
09:57 17 break.
09:57 18 Q. If we could turn now to Tab 18 of your binder,
09:57 19 Dr. Spiegelberg.
09:57 20 And we're going to look at -- behind Tab 18 of
09:57 21 your binder is DTX-2190.
09:57 22 Do you see that, sir?
09:57 23 A. Yes. I do.
09:57 24 Q. What is DTX-2190?
09:57 25 A. These are the testing results from my testing

09:57 1 of Zendura FLX.
09:57 2 MR. ZUBLER: Your Honor, we move
09:57 3 admission of DTX-2190.
09:57 4 MR. HUNG: Your Honor, we're fine with
09:57 5 displaying to the jury, but it's a demonstrative. It's
09:57 6 not a -- it's an expert-created piece of evidence.
09:57 7 THE COURT: I agree that it should be a
09:57 8 demonstrative.
09:57 9 MR. ZUBLER: Okay. May we publish it to
09:57 10 the jury, Your Honor?
09:57 11 THE COURT: Yes. Yes.
09:57 12 You're okay with it being a
09:57 13 demonstrative?
09:57 14 MR. HUNG: I am, Your Honor.
09:57 15 THE COURT: Okay. Yes.
09:57 16 BY MR. ZUBLER:
09:57 17 Q. Looking at DTX-2190, sir --
09:58 18 MR. ZUBLER: And if we could zoom in a
09:58 19 little bit more on the screen to make the data bigger.
09:58 20 Thank you.
21 BY MR. ZUBLER:
09:58 22 Q. Will you please walk the jury through what's
09:58 23 shown on this slide?
09:58 24 A. Yes. This is the test configuration and
09:58 25 testing results from our tensile testing of Zendura

09:58 1 FLX. I show the testing speed conducted at 2 inches
09:58 2 per minute or 50 millimeters per minute.
09:58 3 We looked at five different specimens per ASTM
09:58 4 D638, and then the testing results indicated as
09:58 5 elongation of break at the TPU layer is shown for the
09:58 6 five specimens. And you can see we had a range between
09:58 7 145 percent up to 151 percent.
09:58 8 Q. And just to do some basic math, is an average
09:58 9 of 148 greater than or less than 200 percent?
09:58 10 A. It is less than 200 percent.
09:58 11 Q. What did you conclude based on your testing?
09:58 12 A. That the TPU layer in the Zendura FLX has an
09:58 13 elongation of break much less than 200 percent.
09:58 14 Q. And what is your opinion, based on this data,
09:59 15 regarding whether or not ClearCorrect aligners made
09:59 16 with Zendura FLX infringe the four asserted materials
09:59 17 patents?
09:59 18 A. It does not infringe.
09:59 19 Q. Now, were you here for Dr. Reitman's testimony
09:59 20 yesterday?
09:59 21 A. I was.
09:59 22 Q. And did you hear her testify that she ran
09:59 23 tests on Zendura FLX?
09:59 24 A. Yes.
09:59 25 Q. Did Dr. Reitman's test results that you heard

09:59 1 yesterday cause you to reconsider your conclusion that
09:59 2 you drew from your testing?
09:59 3 A. No.
09:59 4 Q. Why not?
09:59 5 A. Dr. Reitman used a testing configuration that
09:59 6 was not in compliance with ASTM D638.
09:59 7 Q. Why was it not in compliance?
09:59 8 A. She used the wrong testing speed.
09:59 9 Q. Testing speed. What do you mean by "testing
09:59 10 speed"?
09:59 11 A. Basically, how quickly are you pulling the
09:59 12 sample apart.
09:59 13 Q. What pulling speed did she use?
09:59 14 A. She used 10 millimeters per minute or about a
09:59 15 factor of 5 less than what the standard requires.
09:59 16 Q. Which standard are you comparing that to?
10:00 17 A. ASTM D638.
10:00 18 Q. So just to be clear, was Dr. Reitman's pulling
10:00 19 speed slower or faster than what the standard requires?
10:00 20 A. Slower.
10:00 21 Q. And how does a slower pulling speed affect the
10:00 22 results you get when you're doing a measurement of
10:00 23 elongation at break?
10:00 24 A. It can result in a higher elongation at break.
10:00 25 Q. Is there a way to demonstrate this to the

10:00 1 jury, Dr. Spiegelberg?
10:00 2 A. Yes. There is.
10:00 3 Q. I believe you have with you DPX-38, which is
10:00 4 an exhibit we made available for an inspection to the
10:00 5 other side. Could you pull it out and show it to the
10:00 6 jury, please?
10:00 7 What is it, sir?
10:00 8 A. This is Silly Putty. You can tell there's a
10:00 9 polymer scientist in the crowd when they're carrying
10:00 10 around Silly Putty because it's a great way of
10:00 11 demonstrating the response of materials to deformation
10:00 12 rate.
10:00 13 Q. Is Silly Putty a polymer, sir?
10:00 14 A. Yes. It is.
10:00 15 Q. Please go ahead.
10:00 16 A. Okay. So when you're doing a stretching
10:00 17 experiment with Silly Putty, you can do it at different
10:01 18 rates and you get different responses. If I do a
10:01 19 faster rate, you can see that the material breaks at a
10:01 20 fairly low strain.
10:01 21 I take the same material now and I do a much
10:01 22 slower stretching rate, you can see I can take it to a
10:01 23 much longer stretch before it even breaks, if it even
10:01 24 breaks at all.
10:01 25 So what's happening is the polymer chains are

10:01 1 having a lot more time to respond and flow so that they
10:01 2 don't break.
10:01 3 Q. Now, to obtain her results, for how long of a
10:01 4 period of time did Dr. Reitman pull her samples?
10:01 5 A. She had some experiments that went over ten
10:01 6 minutes.
10:01 7 Q. And when you say her experiments ran for more
10:01 8 than ten minutes, what do you mean?
10:01 9 A. That the sample didn't break within ten
10:01 10 minutes. It went longer than that.
10:01 11 Q. And does that comply or not comply with the
10:01 12 ASTM standard?
10:01 13 A. It does not comply with it.
10:01 14 Q. How so?
10:01 15 A. The ASTM standard is fairly prescriptive in
10:01 16 that you should have a break between half a minute to
10:01 17 five minutes. And if you go longer than five minutes,
10:02 18 then you're at the wrong speed.
10:02 19 Q. Now, you said you were here for Dr. Reitman's
10:02 20 testimony yesterday. And do you recall she testified
10:02 21 about the manufacturer's technical data sheets?
10:02 22 A. Yes.
10:02 23 Q. And Dr. Reitman concluded that the data sheet
10:02 24 for a raw polymer such as the TPU used in Zendura FLX
10:02 25 was evidence of infringement, the data on this data

1 sheet.

10:02 2 Do you recall that, sir?

10:02 3 A. Yes.

10:02 4 Q. Do you agree with her?

10:02 5 A. I do not.

10:02 6 Q. Why not?

10:02 7 A. Because manufacturing changes polymers'

10:02 8 behavior.

10:02 9 Q. And do you recall, sir, that Dr. Reitman also

10:02 10 testified about her testing of the individual polymers

10:02 11 used within Zendura FLX?

10:02 12 Do you recall that testimony?

10:02 13 A. Yes.

10:02 14 Q. And she testified that her testing of the

10:02 15 individual polymers by themselves was evidence of

10:02 16 infringement. Do you agree with that?

10:02 17 A. I do not.

10:02 18 Q. Why not?

10:02 19 A. The materials that she manufactured used a

10:03 20 different manufacturing process than what's used in

10:03 21 Zendura FLX. So it's not replicative of what's

10:03 22 happening in Zendura FLX manufacturing, so therefore

10:03 23 are different properties.

10:03 24 Q. Let's talk about the manner in which Zendura

10:03 25 FLX manufactured. What is the process for

10:03 1 manufacturing Zendura FLX?
10:03 2 A. It's a process called extrusion lamination.
10:03 3 Q. Okay. Let's break that down, extrusion
10:03 4 lamination. What's extrusion?
10:03 5 A. Extrusion is the process by which you can take
10:03 6 polymer pellets and get them into a melt or molten
10:03 7 state so then you can process them into other
10:03 8 conditions. It's kind of like taking a stick of
10:03 9 chewing gum and chewing it up so it's much more pliable
10:03 10 and flexible.
10:03 11 Q. Okay. That's extrusion. What's lamination?
10:03 12 A. Lamination is taking preexisting sheets and
10:03 13 bonding them together in some way.
10:03 14 Q. Have you prepared an animation, sir, to
10:03 15 explain this process?
10:03 16 A. I have.
10:03 17 Q. If we could start the animation and you could
10:04 18 explain what the first step is here in the extrusion
10:04 19 lamination process.
10:04 20 A. This is a cartoon of an extruder. And you can
10:04 21 see a hopper that contains the copolyester pellets
10:04 22 shown in blue.
10:04 23 The pellets are introduced into the extruder,
10:04 24 and then it begins to be heated and then conveyed by
10:04 25 the screw, which acts as a shearing action to help make

10:04 1 the polymer pellets all molten.
10:04 2 They're conveyed to the end, and it goes
10:04 3 through a die and is formed into a sheet.
10:04 4 Q. If we could pause right there for a second.
10:04 5 What temperature is being applied during this
10:04 6 process, sir?
10:04 7 A. There's a high elevated temperature in the
10:04 8 hundreds of degrees and then also shearing forces which
10:04 9 create a great amount of temperature too.
10:04 10 Q. What do you mean by "shearing forces"?
10:04 11 A. It's a -- basically a screw that's kind of
10:04 12 grinding up the material, kind of like your teeth
10:04 13 chewing up gum and, you know, grinding it back and
10:04 14 forth.
10:04 15 Q. Let's go to the next step in the animation,
10:04 16 please.
10:04 17 And please describe it, Dr. Spiegelberg.
10:04 18 A. So we do the same process now with the TPU
10:05 19 layer. Now we have the pink pellets representing the
10:05 20 TPU pellets.
10:05 21 Those go into the extruder and are heated up
10:05 22 and -- at 385 to 425 degrees Fahrenheit. And then the
10:05 23 screw conveys them along a shearing action as well, and
10:05 24 they're extruded out the die. But this time they're
10:05 25 going to go between two preexisting rolls of the

10:05 1 copolyester layer. So now you're creating a
10:05 2 three-layer film.
10:05 3 Q. And then what's shown at the right with the
10:05 4 blue, pink, blue on the right there, sir, what is that
10:05 5 end product?
10:05 6 A. This is the -- a hard-soft-hard configuration
10:05 7 like Zendura FLX.
10:05 8 Q. Now, how, if at all, does this process that we
10:05 9 just saw in the animation, extrusion lamination, how
10:05 10 does that affect the properties of the soft middle
10:05 11 layer, the TPU layer within Zendura FLX?
10:05 12 A. When polymers are subjected to high
10:06 13 temperatures and that shearing action, the polymer
10:06 14 chains, these long floppy chains, can be snipped into
10:06 15 smaller bits which change their mechanical properties.
10:06 16 Q. Now, can you give the jury an analogy to
10:06 17 understand why the characteristics of the original
10:06 18 polymer as described in the technical data sheets do
10:06 19 not reflect the ultimate properties of the polymer when
10:06 20 it -- after extrusion lamination?
10:06 21 A. Sure. If there are any bakers in the room and
10:06 22 if you've made pie crusts, when you first make the pie
10:06 23 crust before baking, it's very flexible. You can mold
10:06 24 it into the pie tin, you can stretch it to some degree,
10:06 25 you can roll it out. It's very, very pliable.

10:06 1 Once you bake it, it goes through a chemical
10:06 2 reaction and the material is -- the pie crust is now
10:06 3 much more brittle, hopefully a bit flaky. But if you
10:06 4 try to break it or pull it, it will break at a much
10:07 5 lower strain.
10:07 6 Q. Does a baked pie crust have an elongation of
10:07 7 break greater than or less than 200 percent?
10:07 8 A. I haven't tested it, but it seems like it
10:07 9 would.
10:07 10 Q. Greater than or less than?
10:07 11 A. Less than.
10:07 12 Q. All right.
10:07 13 MR. ZUBLER: Your Honor, if I could
10:07 14 approach the witness. We have a placard we'd like him
10:07 15 to use.
10:08 16 And, Your Honor, if I could ask
10:08 17 permission for the witness to step down from the
10:08 18 witness stand.
10:08 19 THE COURT: As long as he has a mic.
10:08 20 MR. ZUBLER: Yes.
10:08 21 BY MR. ZUBLER:
10:08 22 Q. Dr. Spiegelberg, and if you could maybe stand
10:08 23 a little bit to your left, to the right, just to make
10:08 24 sure the jury and the attorneys from Align can see
10:08 25 your -- your demonstrative there.

10:08 1 Sir, what is shown here at a high level?
10:08 2 A. This is showing the elongation of break from
10:08 3 the tensile testing that was conducted at various
10:08 4 facilities.
10:08 5 Q. All right.
10:08 6 A. Zendura FLX.
10:08 7 Q. All right. And let's start with the testing
10:08 8 results in the left, the lower left, the bars that are
10:08 9 above "Align prelitigation." What are those numbers,
10:08 10 sir?
10:08 11 A. These results here are the testing on Zendura
10:08 12 FLX conducted by Align before the litigation where they
10:08 13 found results between 124 and 140 percent.
10:09 14 Q. And are those above or below 200 percent, sir?
10:09 15 A. I show 200 percent with the dashed line here.
10:09 16 So these are below.
10:09 17 Q. Let's look at the next set of data, the data
10:09 18 that's above the words "Bay Materials prelitigation."
10:09 19 What does that show?
10:09 20 A. This is the testing on Zendura FLX conducted
10:09 21 by Bay Materials. They found values between 94 percent
10:09 22 up to 110 percent. So on average all below
10:09 23 200 percent.
10:09 24 Q. Now, if I could ask you to use your marker,
10:09 25 sir. If you could draw a line on the demonstrative

10:09 1 separating the data that was created before this
10:09 2 litigation ever began from the data that was then
10:09 3 created as part of this litigation.
10:09 4 A. (Witness draws.)
10:09 5 Q. All right. Now, let's look at the data that
10:09 6 was created as part of the litigation in this case.
10:09 7 Let's -- what are the green bars above the
10:10 8 text "Dr. Spiegelberg testing"?
10:10 9 A. These are the results from my testing
10:10 10 laboratory on Zendura FLX, and we found an elongation
10:10 11 of break that range between 145 percent up to
10:10 12 151 percent.
10:10 13 Q. And now finally let's look at the last set of
10:10 14 data, the orange and brown bars above the text
10:10 15 "Dr. Reitman testing."
10:10 16 What do those show, sir?
10:10 17 A. These results show two sets of data basically.
10:10 18 Dr. Reitman found three specimens that had elongation
10:10 19 of breaks below 200 percent and then two that were
10:10 20 above.
10:10 21 Q. Is this the same data that Dr. Reitman
10:10 22 referred to in her testimony yesterday?
10:10 23 A. It was.
10:10 24 Q. Dr. Reitman found that three of the samples
10:10 25 were below 200 percent, you testified, and then there's

10:10 1 two with much larger values.
10:10 2 What do you conclude, based on your expert
10:10 3 experience and knowledge, about the variability of
10:10 4 those results?
10:10 5 A. Well, you can see all these other tests that
10:10 6 were conducted at the right rate had a very tight
10:11 7 grouping of the data. Dr. Reitman, because she used
10:11 8 the wrong testing speed, had a lot of variability in
10:11 9 her results.
10:11 10 Q. Does that make her results more reliable or
10:11 11 less reliable, sir?
10:11 12 A. They are less reliable.
10:11 13 Q. All right. Thank you, Dr. Spiegelberg. And
10:11 14 you can return to the witness stand.
10:11 15 Dr. Spiegelberg, we talked about the extrusion
10:11 16 lamination process and how it affects elongation at
10:11 17 break.
10:11 18 Are there any other impacts from the
10:11 19 manufacturing process that you observed in a
10:11 20 multi-layer material?
10:11 21 A. Yes.
10:11 22 Q. And what kind of effects are those?
10:11 23 A. There can be inner diffusion between the
10:11 24 layers during the manufacturing process.
10:11 25 Q. Okay. Inner diffusion between the layers.

10:12 1 Let's talk a little bit about that.
10:12 2 Have you prepared a demonstrative to explain
10:12 3 that concept?
10:12 4 A. Yes.
10:12 5 MR. ZUBLER: All right. If we could go
10:12 6 to DDX-7.28.
7 BY MR. ZUBLER:
10:12 8 Q. What does this show, sir?
10:12 9 A. This was showing the three layers in Zendura
10:12 10 FLX. The blue layer is representing the copolyester
10:12 11 layers, the red/pink layer representing TPU layer. And
10:12 12 at the interface, between the two -- the three layers
10:12 13 there's mixing of the polymers which occurs when the
10:12 14 polymers are still in a slightly molten state.
10:12 15 Q. And are there benefits or drawbacks from this
10:12 16 mixing that occurs?
10:12 17 A. There's a bit of both. The mixing helps
10:12 18 ensure good bonding between the two layers, the three
10:12 19 layers in this case. So it's harder to delaminate them
10:12 20 or pull them apart.
10:12 21 But you can also see a reduction in some of
10:12 22 the properties because of, for instance, the mixing of
10:12 23 the copolyester into the TPU layer, that will probably
10:12 24 drop the elongation at break a bit.
10:13 25 Q. Have you done any testing relating to this

10:13 1 phenomenon and whether or not it occurs with Zendura
10:13 2 FLX?
10:13 3 A. I have.
10:13 4 Q. What kind of testing did you do?
10:13 5 A. I did a technique called infrared
10:13 6 spectroscopy.
10:13 7 Q. What is infrared spectroscopy?
10:13 8 A. It's a really useful technique for looking at
10:13 9 the presence of different materials, such as different
10:13 10 polymers, in a specific area of a sample.
10:13 11 Q. If you could go back to your binder for a
10:13 12 moment, please, sir, and look at Tab 20, which is
10:13 13 DTX-2187. Tab 20.
10:13 14 What is Tab 20, DTX-2187?
10:13 15 A. This is the raw data from my infrared
10:13 16 spectroscopy testing of Zendura FLX.
10:13 17 MR. ZUBLER: Any objection to publishing
10:13 18 this as a demonstrative?
10:13 19 MR. HUNG: No objection.
10:13 20 MR. ZUBLER: If we could publish
10:14 21 DTX-2187.
22 BY MR. ZUBLER:
10:14 23 Q. There's a lot of graphs on here,
10:14 24 Dr. Spiegelberg. What does this show?
10:14 25 A. This shows the infrared spectroscopy signature

10:14 1 of the elements in Zendura FLX, the copolyester layers
10:14 2 and the TPU layers.
10:14 3 Q. And what does this show with respect to
10:14 4 whether there is or isn't the diffusion you talked
10:14 5 about previously?
10:14 6 A. I found mixing between the layers as a result
10:14 7 of this testing.
10:14 8 Q. Has Align or its experts performed any testing
10:14 9 to determine whether there's this diffusion of layers
10:14 10 in Zendura FLX?
10:14 11 A. Although Dr. Reitman did do infrared
10:14 12 spectroscopy as well on Zendura FLX, she did not do the
10:14 13 same type of infrared that I did, where we're stepping
10:14 14 across the sample in very small steps. So you see the
10:14 15 change in the mixing as you move across the sample.
10:14 16 Q. What effect, if any, does this testing, the
10:14 17 infrared spectroscopy testing, have on your analysis of
10:15 18 the infringement issue?
10:15 19 A. It demonstrates that the film layers are not
10:15 20 made of individual polymers but are mixes.
10:15 21 Q. Okay. Let's look -- strike that.
10:15 22 And how is that relevant to infringement or
10:15 23 noninfringement of the patents in this case?
10:15 24 A. It demonstrates noninfringement.
10:15 25 Q. With respect to which patents, sir?

10:15 1 A. The '090 and the '091 patents.
10:15 2 Q. Let's look briefly, if we could, at the '090
10:15 3 patent, Claim 1. This is the text of the '090 patent.
10:15 4 What does this refer to, or what have you
10:15 5 highlighted on the screen, sir?
10:15 6 A. This shows in green that the first layer
10:15 7 consists of a single material copolyester and that the
10:15 8 second layer consists of a single material, a
10:15 9 thermoplastic polyurethane elastomer.
10:15 10 Q. And which patents have this type of
10:15 11 requirement, sir?
10:15 12 A. The '090 and '091 patents.
10:15 13 Q. And with these requirements about the
10:15 14 composition of a first layer and second layer, what is
10:16 15 your conclusion about whether clear aligner --
10:16 16 ClearCorrect aligners using Zendura FLX infringe the
10:16 17 '090 and '091 patents?
10:16 18 A. They do not.
10:16 19 Q. All right. Let's turn now to the last issue,
10:16 20 if we could, in DDX-7.35.
10:16 21 There's a point here on your slide that says:
10:16 22 If the claims are stretched, they are invalid for lack
10:16 23 of enablement.
10:16 24 Sir, what is your conclusion with respect to
10:16 25 validity or invalidity?

10:16 1 A. If the claims are stretched to include a
10:16 2 hard-soft-hard configuration, then they are invalid for
10:16 3 lack of enablement.
10:16 4 Q. Lack of enablement. We haven't heard much
10:16 5 about that in this trial yet. What is lack of
10:16 6 enablement?
10:16 7 A. Enablement is basically is there enough
10:16 8 information in the patent for a person of ordinary
10:16 9 skill in the art to be able to practice the patent and
10:16 10 know that they're going to get a reasonable result at
10:17 11 the end.
10:17 12 MR. ZUBLER: Okay. If we could pull up
10:17 13 PDX-1.39, which was from the opening statement of Align
10:17 14 in this case.
15 BY MR. ZUBLER:
10:17 16 Q. Do you remember that Ms. Durie used this slide
10:17 17 during her opening statement?
10:17 18 A. Yes.
10:17 19 Q. And she explained that when you have a new
10:17 20 idea, you have two options. You can keep it secret, or
10:17 21 in her words, you have the option -- and I quote: You
10:17 22 have the option to go to the United States Patent
10:17 23 Office and make your invention public, add to the sum
10:17 24 of human knowledge, and in exchange for that
10:17 25 disclosure, you are awarded a patent that gives you the

10:17 1 exclusive right to that invention for a period of time.
10:17 2 Do you recall her saying that?
10:17 3 A. Yes. I do.
10:17 4 Q. Does that have any relationship to the
10:17 5 enablement requirement?
10:17 6 A. Yes.
10:17 7 Q. How so?
10:17 8 A. The deal is that the Patent Office will give
10:17 9 you exclusivity on your patent for a period of time if
10:17 10 you provide sufficient information in the patent to
10:18 11 understand, for a person of ordinary skill, what is the
10:18 12 patent and how do I practice it.
10:18 13 Q. So that was the enablement requirement, but
10:18 14 you also mentioned something that you said: If the
10:18 15 patents are stretched to cover HSH, then they would not
10:18 16 be enabled.
10:18 17 What do you mean by that, sir?
10:18 18 A. That there's insufficient information in the
10:18 19 patent to enable someone, a person of ordinary skill,
10:18 20 to practice the art if they include a hard-soft-hard
10:18 21 configuration.
10:18 22 MR. ZUBLER: All right. If we could go
10:18 23 to PDX-1.40. This is another slide from Align's
10:18 24 opening statement.
25 BY MR. ZUBLER:

10:18 1 Q. And do you recall this from the opening
10:18 2 statement, sir?
10:18 3 A. Yes.
10:18 4 Q. And Ms. Durie, if I recall correctly, used
10:18 5 this slide. And she analogized Align's patent claims
10:18 6 to a fence around a house.
10:18 7 Is that what your recollection is, sir?
10:18 8 A. Yes.
10:18 9 MR. ZUBLER: Your Honor, if I could use a
10:18 10 microphone to do a brief illustration.
10:19 11 BY MR. ZUBLER:
10:19 12 Q. So I want to give you a hypothetical,
10:19 13 Dr. Spiegelberg. Let's suppose that Align's patent
10:19 14 claims have a scope, a proper scope, as properly
10:19 15 applied, of a fence, approximately in this area in
10:19 16 front of me here, if you can kind of see -- if you can
10:19 17 see my hands.
10:19 18 And if that is the scope of Align's patent
10:19 19 claims, a fence of this approximate area, what is your
10:19 20 conclusion about whether Zendura FLX would fall within
10:19 21 this scope of Align's claims?
10:19 22 A. With the proper scope, it would not fall
10:19 23 within those.
10:19 24 Q. And what's the basis for your conclusion
10:19 25 there?

10:19 1 A. Because the properties in the Zendura FLX do
10:19 2 not meet the scope, and it's only describing a
10:19 3 soft-hard-soft configuration.
10:19 4 Q. All right. In this hypothetical, where would
10:19 5 Zendura FLX be if it's not in this box?
10:19 6 A. Somewhere over there.
10:20 7 Q. All right. So let's suppose, as part of this
10:20 8 hypothetical, that Align's fence, Align's patents are
10:20 9 applied more broadly to cover not just this box here
10:20 10 but all of this area over here.
10:20 11 Do you follow me, sir?
10:20 12 A. Yes.
10:20 13 Q. If Align's patent fence is drawn all the way
10:20 14 around here, what is the consequence for validity or
10:20 15 invalidity of these claims?
10:20 16 A. It's invalid.
10:20 17 Q. Why would it be invalid if these claims are
10:20 18 broader?
10:20 19 A. Because it doesn't enable a person of ordinary
10:20 20 skill to practice the patent.
10:20 21 Q. All right. So if the claims are broad, the
10:20 22 fence goes all the way over here, you've testified the
10:20 23 claims are not valid; is that right?
10:20 24 A. That's correct.
10:20 25 Q. But if we go back over here and the claims are

10:20 1 given the proper application as you understand it, the
10:20 2 claims, are they infringed or not infringed?
10:20 3 A. Not infringed.
10:20 4 Q. Is there any place along this continuum, from
10:20 5 here or all the way over there, where Align's claims
10:21 6 are both infringed and valid?
10:21 7 A. No.
10:21 8 Q. Let's talk about enablement and the legal test
10:21 9 for enablement.
10:21 10 MR. ZUBLER: If we could go to DDX-7.36.
11 BY MR. ZUBLER:
10:21 12 Q. What is shown here, sir?
10:21 13 A. These are some of the factors I considered
10:21 14 when assessing whether or not Align's patents had
10:21 15 adequate enablement.
10:21 16 Q. And where do these factors come from?
10:21 17 A. These are standard ones. Wands factors,
10:21 18 they're called.
10:21 19 Q. What did you conclude in analyzing these
10:21 20 factors?
10:21 21 A. That they did not meet the criteria.
10:21 22 Q. Okay. We're going to go through each one of
10:21 23 these four factors. We'll move through them as
10:21 24 promptly as we can. Let's start with breadth of
10:22 25 claims.

10:22 1 MR. ZUBLER: And if we could go to the
10:22 2 next slide.
3 BY MR. ZUBLER:
10:22 4 Q. Sir, what is shown on this slide regarding
10:22 5 breadth?
10:22 6 A. This demonstrates the various features of the
10:22 7 claims that are very broad under Align's theory.
10:22 8 Q. Okay. The first item here refers to the
10:22 9 number of layers or configuration. Under Align's
10:22 10 application, its proposed application of its claims
10:22 11 under its theory, do Align's patents contain any
10:22 12 limitation on the number of layers or configuration of
10:22 13 those layers?
10:22 14 A. No. They do not.
10:22 15 MR. ZUBLER: Let's go to the next slide.
16 BY MR. ZUBLER:
10:22 17 Q. You have a slide here that has two circles, a
10:22 18 big one and a small one.
10:22 19 Do you see that, sir?
10:22 20 A. Yes.
10:22 21 Q. What's the small one?
10:22 22 A. The small one represents the soft-hard --
10:22 23 soft-hard-soft configuration, which was the original
10:22 24 patent that Align has.
10:22 25 Q. And what is the larger circle?

10:22 1 A. The larger circle represents all the -- some
10:22 2 of the possible combinations that are anticipated in
10:23 3 Align's interpretation of the claims where again
10:23 4 hard -- or H indicates the hard layer, S indicates a
10:23 5 soft layer. So you could have various combinations of
10:23 6 hard-hard-soft-soft, hard-hard-hard-soft.
10:23 7 Q. So under Align's theory, what, with respect to
10:23 8 this figure, is the scope of the claims, again, under
10:23 9 Align's theory?
10:23 10 A. There's no limit on the number of possible
10:23 11 combinations.
10:23 12 Q. And let's go back to your list. We're talking
10:23 13 about thickness of layers now. Under Align's theory,
10:23 14 are there any limits on the thickness of layers of the
10:23 15 multi-layer material?
10:23 16 A. No. There are not.
10:23 17 Q. The next two items out of your list are the
10:23 18 TPUs and copolyesters. Under Align's theory, are there
10:23 19 any limits on the TPUs or copolyesters that could be
10:23 20 used?
10:23 21 A. No. There are not.
10:23 22 Q. Next on your list is manufacturing methods.
10:23 23 Under Align's theory, are there any limits on the
10:24 24 manufacturing methods that can be used to make the
10:24 25 multi-layer material?

10:24 1 A. No. There are not.
10:24 2 Q. Are there different types of manufacturing
10:24 3 methods that could be used?
10:24 4 A. Yes. There's co-extrusion. There's extrusion
10:24 5 lamination. There's simple adhesive lamination,
10:24 6 compression molding. Many options.
10:24 7 Q. Last item on your list, thermoforming method.
10:24 8 Under Align's theory, are there any limits on the
10:24 9 thermoforming method that would be used to make a
10:24 10 dental appliance that's the result of the claims in
10:24 11 this case?
10:24 12 A. No. There are no limits.
10:24 13 Q. Are there different methods of thermoforming?
10:24 14 A. There's different conditions, different
10:24 15 temperatures, pressures, times.
10:24 16 Q. Now, are there any limits in Align's claims
10:24 17 regarding the breadth of their scope?
10:24 18 A. There are some.
10:24 19 MR. ZUBLER: All right. If we could go
10:24 20 to the next slide, DDX, I believe it's 7.43.
10:24 21 45. Strike that.
22 BY MR. ZUBLER:
10:24 23 Q. With respect to this Exhibit DDX-7.45, what
10:25 24 are you showing with the highlighting here?
10:25 25 A. I'm showing some of the limits that are

10:25 1 established within the claim.
10:25 2 The first one indicates the requirement that
10:25 3 you make a dental aligner that's effective in
10:25 4 repositioning a patient's teeth.
10:25 5 Q. And what is -- that's in yellow, sir?
10:25 6 A. That's in yellow.
10:25 7 Q. What's in the purplish color?
10:25 8 A. Purple then indicates the properties of the
10:25 9 formed layers in the first layer, the hard layer and
10:25 10 the soft layer.
10:25 11 Q. And what's shown in green?
10:25 12 A. The green is a requirement that the
10:25 13 multi-layer sheet be thermoformable.
10:25 14 Q. So these are all limitations, you said, on the
10:25 15 claims. How would one determine whether a multi-layer
10:25 16 material satisfies these requirements?
10:25 17 A. You have to test them.
10:25 18 Q. And how does that -- well, strike that.
10:25 19 What would be the quantity of testing required
10:25 20 to determine that?
10:25 21 A. It would be a lot of testing.
10:25 22 Q. And how does that impact your analysis of
10:25 23 enablement in this case?
10:25 24 A. It demonstrates no enablement.
10:26 25 Q. We're going to come back to the testing issue

10:26 1 in a moment.
10:26 2 Now, let's go back to the four key enablement
10:26 3 factors that we looked at earlier.
10:26 4 The next factor is existence of working
10:26 5 examples and amount of direction provided.
10:26 6 What does this factor refer to, sir?
10:26 7 A. How much information is in the patent that
10:26 8 shows actual examples of the claim -- or the inventor
10:26 9 has done.
10:26 10 Q. Why is that relevant to enablement?
10:26 11 A. It demonstrates to a person of ordinary skill
10:26 12 in the art what types of materials the inventor tried
10:26 13 and found successful.
10:26 14 Q. Okay. Now, do Align's patents provide working
10:26 15 examples or guidance for how to make the materials that
10:26 16 Align says are covered by the patent?
10:26 17 A. No.
10:26 18 Q. Do Align's patents identify by commercial name
10:26 19 any specific polymers?
10:26 20 A. They do not.
10:26 21 Q. Do Align's patents describe the specific
10:26 22 thickness of any layer in a multi-layer material?
10:26 23 A. No specific thickness.
10:26 24 Q. Do Align's patents describe the manufacturing
10:27 25 parameters that should be used to make the material,

10:27 1 such as temperatures or pressures or speeds?
10:27 2 A. No.
10:27 3 Q. Now, yesterday -- we talked earlier about
10:27 4 Mr. Hung walking through Figures 5 through 8 of the
10:27 5 '613 patent, those various figures of Material 1 and
10:27 6 Material 2 that we looked at today a little bit.
10:27 7 Do any of those figures provide a working
10:27 8 example or guidance as to how to make the claimed
10:27 9 materials under Align's theory of the scope of the
10:27 10 claims?
10:27 11 A. No. They do not.
10:27 12 Q. The next item on your list is the level of
10:27 13 predicability in the art.
10:27 14 Do you see that, sir?
10:27 15 A. Yes. I do.
10:27 16 Q. What does that refer to as a factor relevant
10:27 17 to enablement?
10:27 18 A. Whether or not a person of ordinary skill in
10:27 19 the art would know what kind of outcome they can expect
10:27 20 from practicing the invention.
10:27 21 Q. Does this factor, the level of predicability
10:27 22 in the art, have any relationship to the concept of
10:27 23 trial and error?
10:27 24 A. It does.
10:27 25 Q. How so?

10:27 1 A. The same thing.
10:27 2 Q. And if you -- if you need a lot of trial and
10:28 3 error, does that make a -- an art -- a field
10:28 4 predictable or unpredictable?
10:28 5 A. No. A lot of trial and error means it's
10:28 6 unpredictable.
10:28 7 Q. Now, is making a multi-layer material for use
10:28 8 in a dental aligner, is that predictable or
10:28 9 unpredictable?
10:28 10 A. It is unpredictable.
10:28 11 Q. Is there any dispute in this case about that,
10:28 12 sir?
10:28 13 A. No. There doesn't appear to be.
10:28 14 MR. ZUBLER: All right. And if we could
10:28 15 just go back to DDX-7.43.
16 BY MR. ZUBLER:
10:28 17 Q. What do we see here, sir?
10:28 18 A. This is an excerpt from the declaration that
10:28 19 Dr. Li provided to the Patent Office.
10:28 20 Q. And what did she conclude?
10:28 21 A. She concluded that dental aligners and making
10:28 22 thereof is -- lacks predicability.
10:28 23 Q. And what was the basis for her opinion or her
10:28 24 statement that there's a lack of predicability in this
10:28 25 area?

10:28 1 A. She had to do a lot of testing.
10:28 2 Q. And finally let's go to the final factor for
10:28 3 enablement. Quantity of experimentation needed to
10:28 4 practice the full scope of the claims.
10:29 5 What does this factor relate to?
10:29 6 A. It relates to how much experimental work a
10:29 7 person of ordinary skill would have to employ in order
10:29 8 to practice the scope of the claims.
10:29 9 Q. And how does this factor affect your
10:29 10 conclusions about enablement in this case?
10:29 11 A. It demonstrates that it -- it's not enabled.
10:29 12 MR. ZUBLER: All right. If we could go
10:29 13 to the next slide, DDX-7.44.
14 BY MR. ZUBLER:
10:29 15 Q. What's shown here with respect to quantity of
10:29 16 experimentation?
10:29 17 A. It shows Align's development pathway for
10:29 18 SmartTrack which took eight years. They evaluated over
10:29 19 260 materials. They had 19 companies involved in the
10:29 20 development, and that was all to get to one material,
10:29 21 SmartTrack, which is a soft-hard-soft configuration.
10:29 22 Bay Materials had a different path. It took
10:29 23 15 years. They looked at over 850 different
10:29 24 formulations with fewer engineers, and they arrived at
10:29 25 Zendura FLX, a hard-soft-hard configuration.

10:29 1 So those are just one material for each
10:30 2 company with all this development time.
10:30 3 Q. Now, let me ask you a question. If claims are
10:30 4 as broad as Align's theory would suggest, how much
10:30 5 experimentation would be required to practice that full
10:30 6 scope of Align's claimed invention?
10:30 7 A. I can't even estimate it because of the great
10:30 8 number of possibilities.
10:30 9 Q. So we've been through all of those four
10:30 10 factors of enablement, what you called the Wands
10:30 11 factors. Dr. Spiegelberg, based on your analysis, if
10:30 12 Align's patent claims are as broad under Align's theory
10:30 13 as they say, what is your conclusion about whether or
10:30 14 not the patents enable a person of skill in the art to
10:30 15 practice the full scope of the claims?
10:30 16 A. They do not enable them.
10:30 17 Q. All right. Thank you, Dr. Spiegelberg. Let's
10:30 18 conclude it.
10:30 19 Let's go back to my hypothetical about the
10:30 20 fence.
10:30 21 Do you recall that, sir?
10:30 22 A. Yes.
10:30 23 Q. If the fence of Align's patents is given a
10:30 24 proper scope and the claims are applied properly, do
10:31 25 ClearCorrect aligners that use Zendura FLX infringe

10:31 1 Align's claims?
10:31 2 A. They do not.
10:31 3 Q. If Align's fence is broadened, it's stretched
10:31 4 to cover a hard-soft-hard material like Zendura FLX,
10:31 5 are the claims valid?
10:31 6 A. They are not valid.
10:31 7 Q. Is there any circumstance in which Align's
10:31 8 patent claims are both infringed and valid?
10:31 9 A. No.
10:31 10 MR. ZUBLER: Thank you. Thank you very
11 much.
10:31 12 I pass witness.
10:31 13 THE COURT: Ladies and gentlemen of the
10:31 14 jury, we're going to take our morning recess. If you
10:31 15 would please remember my instructions not to discuss
10:31 16 the case. We'll be back in about 10 or 15 minutes.
10:31 17 (Jury exited the courtroom.)
10:32 18 THE COURT: You may be seated.
10:32 19 You may step down, sir.
10:32 20 Is there anything we need to take up?
10:32 21 MS. DURIE: Good morning, Your Honor. I
10:32 22 would like to lodge an objection to the continuing
10:32 23 reference to the claims being stretched to cover --
10:32 24 THE COURT: I've already done that.
10:32 25 MS. DURIE: Sorry?

10:32 1 THE COURT: It was raised and I've dealt
10:32 2 with that. Your co-counsel raised that at the bench,
10:32 3 that specific objection. And I -- and I overruled it.
10:32 4 MS. DURIE: Thank you, Your Honor.
10:33 5 THE COURT: Anything else?
10:33 6 MR. MUELLER: Your Honor, just a brief
10:33 7 scheduling note. So after Dr. Spiegelberg testifies,
10:33 8 we're going to call Mr. Julien Marbach. He's the fact
10:33 9 witness that we mentioned yesterday, the remaining
10:33 10 piece of the scan patent evidence. After he concludes,
10:33 11 we will move for JMOL on the scan patent, the '936.
10:33 12 THE COURT: Okay.
10:33 13 MR. MUELLER: It might be a good time to
10:33 14 do it right before lunch.
10:33 15 THE COURT: You just let me know.
10:33 16 MR. MUELLER: Okay. Understood. Thank
10:33 17 you, Your Honor.
10:33 18 That's all we have.
10:33 19 THE COURT: Anything else?
10:33 20 MS. DURIE: No, Your Honor.
10:33 21 THE BAILIFF: All rise.
10:33 22 (Recess taken.)
10:50 23 THE BAILIFF: All rise.
10:50 24 THE COURT: Please remain standing for
10:50 25 the jury.

10:50 1 (Jury entered the courtroom.)
10:50 2 THE COURT: Thank you. You may be
10:50 3 seated.
10:50 4 I'm sorry. If we can get the witness
10:51 5 back up here.
10:51 6 CROSS-EXAMINATION
10:51 7 BY MR. HUNG:
10:51 8 Q. Dr. Spiegelberg, good to see you again.
10:51 9 A. You too.
10:51 10 Q. Okay. I want to table set to kick us off.
10:51 11 Before this case, you had never heard of Bay Materials,
10:51 12 fair?
10:51 13 A. That's correct.
10:51 14 Q. But you had heard of Align?
10:51 15 A. I had.
10:51 16 Q. And you knew that Align is very well known for
10:51 17 its products?
10:51 18 A. I've heard of their products.
10:51 19 Q. And you agree that Align has a good
10:52 20 reputation?
10:52 21 A. I've heard good things.
10:52 22 Q. You've also heard and worked with Maureen
10:52 23 Reitman before, correct?
10:52 24 A. I have.
10:52 25 Q. And you believe and know she is a good and

10:52 1 competent polymer scientist?
10:52 2 A. She is.
10:52 3 Q. Now, let's talk about the first SmartTrack
10:52 4 patent.
10:52 5 MR. HUNG: And let's pull up PTX-1876 at
10:52 6 Page 19, already admitted.
10:52 7 BY MR. HUNG:
10:52 8 Q. And if you look at this, sir, this is the
10:52 9 first SmartTrack that issued in 2017, correct, sir?
10:52 10 A. Yes.
10:52 11 Q. You are not disputing that this patent covers
10:52 12 SmartTrack, are you?
10:52 13 A. I am not.
10:52 14 Q. And, sir, if you look at this, you are not
10:52 15 disputing that these claims cover hard-soft-hard,
10:52 16 correct? You see the words hard-soft -- sorry.
10:52 17 You're not disputing that these claims cover
10:52 18 soft-hard-soft?
10:52 19 A. I'm not.
10:53 20 Q. And, sir, you know this patent -- this first
10:53 21 SmartTrack patent is not asserted in this case. You
10:53 22 know that, right?
10:53 23 A. Yes. I do.
10:53 24 Q. So this patent is not relevant to the
10:53 25 infringement analysis, fair?

10:53 1 A. I did not look at this in my infringement
10:53 2 analysis.
10:53 3 Q. Okay. Now, let's look at -- let's look at
10:53 4 something else. You heard Mr. Lahlouh who testified.
10:53 5 He mentioned that he has his own patents, right?
10:53 6 A. Yes.
10:53 7 Q. In fact, sir, you read some of those patents,
10:53 8 right?
10:53 9 A. I skimmed over them.
10:53 10 Q. You skimmed over them.
10:53 11 And in fact, you are offering -- or you
10:53 12 offered opinions on litigation settlement involving Bay
10:53 13 Materials to support Mr. Perryman's opinions who have
10:53 14 appeared, correct?
10:53 15 A. Yes.
10:53 16 Q. And, sir, but you know that whether
10:53 17 Mr. Lahlouh has patents is completely irrelevant to the
10:53 18 infringement inquiry, fair?
10:53 19 A. I think that's fair.
10:53 20 Q. You understand -- you've heard of an
10:53 21 improvement patent, right? You know what that is?
10:53 22 A. I've heard of that.
10:53 23 Q. So if I have a patent on a chair with four
10:54 24 legs and you obtained a patent with a chair with four
10:54 25 legs that's red, you still infringe my patent, right?

10:54 1 A. It depends.
10:54 2 Q. Now, sir, let's go to the only patents that
10:54 3 are at issue in this case. Those are the four asserted
10:54 4 materials patents, for the materials case, fair?
10:54 5 Right?
10:54 6 A. Yes.
10:54 7 Q. You're not disputing that the Patent Office
10:54 8 issued those patents after doing a full examination,
10:54 9 correct?
10:54 10 A. Those patents were issued.
10:54 11 Q. And you agree --
10:54 12 MR. HUNG: And let's put this up. Let's
10:54 13 just put up the '613, JTX-2 at Page 20, already
10:54 14 admitted.
15 BY MR. HUNG:
10:54 16 Q. You agree that these claims do not require
10:54 17 soft-hard-soft, correct?
10:54 18 A. Correct.
10:54 19 Q. And you agree that these claims cover
10:54 20 hard-soft-hard, correct?
10:54 21 A. Debatable.
10:55 22 Q. Sir, there's nothing in these claims that
10:55 23 require that that third layer be soft?
10:55 24 A. Not quite.
10:55 25 Q. And, sir, again, you're not disputing that

10:55 1 SmartTrack practices these patents, are you, sir?
10:55 2 A. No.
10:55 3 Q. And, sir, you're not challenging the adequacy
10:55 4 of something called the written description in this
10:55 5 case, correct?
10:55 6 A. Correct.
10:55 7 Q. You're offering no opinions that the written
10:55 8 description in this case doesn't support the claims as
10:55 9 issued, fair?
10:55 10 A. I'm not opining on written description.
10:55 11 Q. And to be crystal clear, there is no claim in
10:55 12 this case that the claims of the materials patents that
10:55 13 we are asserting do not cover hard-soft-hard?
10:55 14 A. Not quite.
10:55 15 Q. Sir, but to be crystal clear, you aren't
10:55 16 challenging written description, that is, whether the
10:56 17 inventors as of the filing date, the priority date
10:56 18 here, were in possession of the inventions as claimed.
10:56 19 You aren't offering that opinion, are you?
10:56 20 A. I'm not challenging written description.
10:56 21 Q. All right, sir.
10:56 22 MR. HUNG: Let's turn to JTX at 2 --
10:56 23 let's pull it up at Page 26, the claims.
24 BY MR. HUNG:
10:56 25 Q. Actually, we have it. We have it right here.

10:56 1 Sir, if you look at this, you will see that it
10:56 2 refers to a soft polymer layer comprising a TPU
10:56 3 elastomer.
10:56 4 MR. HUNG: Back up.
5 BY MR. HUNG:
10:56 6 Q. And that there -- it has to have an elongation
10:56 7 at break greater than 200 percent.
10:56 8 You see that, sir?
10:56 9 A. Yes.
10:56 10 Q. And that is of the layer. The layer must have
10:56 11 an elongation at break of greater than 200 percent,
10:56 12 correct?
10:56 13 A. Yes.
10:56 14 Q. It's not of the whole sheet. This claim does
10:56 15 not say: Providing a sheet where the sheet has an
10:56 16 elongation at break of over 200 percent. Right?
10:56 17 A. Correct.
10:57 18 Q. And, sir, to be crystal clear, you never
10:57 19 tested elongation at break for just the TPU soft layer,
10:57 20 the sheet itself, right, sir?
10:57 21 A. I did.
10:57 22 Q. You never just took a sheet of Texin and
10:57 23 performed your tensile testing, did you, sir?
10:57 24 A. No.
10:57 25 Q. And you're not disputing -- if I look at that

10:57 1 Texin TPU sheet, if I look at the sheet that defendants
10:57 2 used, I will see in the data sheet that it reports an
10:57 3 elongation at break of [redacted] percent for the Texin
10:57 4 material itself, correct?
10:57 5 A. Premanufacturing, yes.
10:57 6 Q. And you're not disputing that if I look in Bay
10:57 7 Materials' documents, it will report an elongation at
10:57 8 break for that material of 500 percent or so, fair?
10:57 9 A. Premanufacturing, yes.
10:57 10 Q. What you disagree with, Dr. Spiegelberg, is
10:57 11 whether it's appropriate to rely upon data sheets,
10:58 12 right?
10:58 13 A. Correct.
10:58 14 Q. Now, sir, we covered this to start. You've
10:58 15 opined to support Mr. Perryman on a litigation
10:58 16 settlement between Bay Materials on the one hand and 3M
10:58 17 on the other hand, right, sir?
10:58 18 A. Yes.
10:58 19 Q. And that litigation settlement that you
10:58 20 offered opinions on involved Bay Materials asserting
10:58 21 its own patents against 3M, right?
10:58 22 A. That's what I recall.
10:58 23 (Bench conference.)
10:58 24 MR. ZUBLER: Your Honor, he's
10:58 25 venturing -- Dr. Spiegelberg did opine regarding a 3M

10:58 1 agreement but not -- he's getting into the litigation
10:58 2 itself and not the nature of the actual patents in the
10:59 3 comparability analysis that is in his opinion, which
10:59 4 goes against the MILs in your case.
5 MR. MUELLER: He also didn't offer the
6 opinion.
10:59 7 THE COURT: Yeah.
10:59 8 MR. HUNG: Your Honor, No. 1,
10:59 9 Mr. Perryman's relying upon it.
10:59 10 No. 2, he relies upon the litigation
10:59 11 settlement between Bay Materials and 3M.
10:59 12 No. 3, he read those patents. He took --
10:59 13 Mr. Lahlouh talked about the patents.
10:59 14 And No. 4, if you read those patents, it
10:59 15 says "a layer with properties," and that expert in that
10:59 16 case that he's relying upon, the litigation settlement
10:59 17 in that patent, says you look at the data sheet. I
10:59 18 should be able to impeach him on that.
10:59 19 THE COURT: You want to impeach him on
10:59 20 patents in another case?
10:59 21 MR. HUNG: On a patent that he testified
10:59 22 on that Mr. Lahlouh presented as his own patent to show
10:59 23 independent of element and says that that patent is
10:59 24 comparable to our patent. And when you look at that
10:59 25 patent, it uses the same language as ours --

10:59 1 THE COURT: So how are you trying to
10:59 2 impeach him here? I just don't see how you're going to
11:00 3 do this.
11:00 4 MR. HUNG: He knows Mr. Perryman. Sorry.
11:00 5 He knows -- he knows the expert. He's familiar with
11:00 6 the litigation. He selectively read materials from
11:00 7 that case. He's offering the settlement.
11:00 8 Mr. Perryman's going to discuss the
11:00 9 settlement. That's not fair. He's going to discuss
11:00 10 the patents. He's ready to discuss the patents, and I
11:00 11 can't --
11:00 12 THE COURT: What is it you want to cross
11:00 13 him about?
11:00 14 MR. HUNG: I want to show him the
11:00 15 declaration that the -- Bay Materials' own expert
11:00 16 submitted in the case directly contradicting his
11:00 17 position that you shouldn't look at a data sheet.
11:00 18 THE COURT: You want to use an expert
11:00 19 opinion from a different case to impeach him and -- to
11:00 20 impeach -- that is not impeachment.
11:00 21 MR. HUNG: No. But, Your Honor, it's Bay
11:00 22 Materials and Bay Materials. It's a patent that he
11:00 23 offered, he's read, he's talked about. And this patent
11:00 24 is -- it's relating to the interpretation of the patent
11:00 25 that he says is comparable to our patent.

11:00 1 THE COURT: I understand. But you want
11:00 2 an expert from a different -- I don't -- I understand
11:01 3 what you're saying. I don't understand how it's
11:01 4 admissible, and I'm not going to allow it.
11:01 5 MR. HUNG: Okay.
11:01 6 (Bench conference concludes.)
11:01 7 BY MR. HUNG:
11:01 8 Q. Sir, you think it's wrong to look at the data
11:01 9 sheets, right? I think you just said that, right?
11:01 10 And you think that one should be looking at
11:01 11 the property of the sheet, of the layer once it's in
11:01 12 the sheet, right, sir?
11:01 13 A. Yes.
11:01 14 Q. Now, you've read the '613 patent multiple
11:01 15 times at this point probably, right?
11:01 16 A. That's correct.
11:01 17 MR. HUNG: All right. Can we pull up
11:01 18 JTX-2, the patent itself at Column 6?
11:01 19 BY MR. HUNG:
11:02 20 Q. And, sir, read along with me. Now, you read
11:02 21 the written description of the patent, correct?
11:02 22 A. Yes.
11:02 23 Q. And you've read the discussions in this patent
11:02 24 describing the properties of the materials in the
11:02 25 layers, right, sir?

11:02 1 A. The properties of the layers.
11:02 2 Q. Okay. Read along with me.
11:02 3 In some embodiments, the soft polymer layers
11:02 4 of the appliances -- are you following me?
11:02 5 A. Yes.
11:02 6 Q. Can independently, independently have a
11:02 7 physical property.
11:02 8 Do you see that, sir?
11:02 9 A. Yes.
11:02 10 Q. Of at least one of.
11:02 11 Do you see that?
11:02 12 A. Yes.
11:02 13 Q. And then it continues: An elongation at break
11:02 14 of greater than about 200 percent.
11:02 15 Do you see that language, sir?
11:02 16 A. Yes.
11:02 17 Q. And what this is discussing is that one is not
11:02 18 looking at the property of the multi-sheet. One is
11:02 19 looking at the prop -- multi-layer sheet. One is
11:03 20 looking at the prop -- the independent property of the
11:03 21 layer and its elongation at break, fair?
11:03 22 A. I don't think so.
11:03 23 Q. You don't think so?
11:03 24 A. No.
11:03 25 Q. One more time, sir.

11:03 1 In some embodiments, this states, the soft
11:03 2 polymer layers of the appliances can independently have
11:03 3 an elongation at break of greater than about
11:03 4 200 percent.
11:03 5 Did I read that correctly?
11:03 6 A. Paraphrasing, yes.
11:03 7 Q. Yeah. This sentence is not referring to the
11:03 8 multi-layer sheet itself having an elongation at break
11:03 9 of greater than 200 percent, true?
11:03 10 A. I'm sorry. Say that again, please.
11:03 11 Q. This sentence from the specification of the
11:03 12 patent that you've read multiple times is not saying
11:03 13 that it -- the property of the multi-layer sheet that
11:03 14 has an elongation at break greater than 200 percent.
11:03 15 This sentence, just this sentence, sir.
11:04 16 A. This sentence doesn't mention the multi-layer.
11:04 17 Q. At all.
11:04 18 A. Actually, it does.
11:04 19 Q. Now, sir, you showed testing results that you
11:04 20 ran, right, on the multi -- on the multi-layer sheet.
11:04 21 If we were to run that test, you showed the jury the
11:04 22 testing results that you ran, right, sir?
11:04 23 A. Yes.
11:04 24 Q. And you showed one chart, one chart from your
11:04 25 report, right?

11:04 1 A. Yes.
11:04 2 Q. Do you believe that it's important to show the
11:04 3 jury the full -- to give the jury a full understanding
11:04 4 of the tests that you ran?
11:04 5 A. Yes. All the valid results.
11:04 6 Q. Of course, right, sir.
11:04 7 Let's -- let's pull up Slide 29 and see if you
11:04 8 recognize this. This is a table from your report.
11:04 9 You didn't show the jury this table, did you,
11:05 10 sir?
11:05 11 A. No. I did not.
11:05 12 Q. Now, help me understand this, sir. This is a
11:05 13 test that you ran on the multi-layer sheet, correct?
11:05 14 A. Yes. Using Dr. Reitman's rate.
11:05 15 Q. You ran this test yourself, right, sir?
11:05 16 A. Yes.
11:05 17 Q. Help me understand this for a second.
11:05 18 Actually, can you read the jury the results for
11:05 19 elongation at break at the inner TPU layer as run on
11:05 20 the multi-layer sheet? Just read the results including
11:05 21 4.4.7.
11:05 22 A. The average was 338 percent.
11:05 23 Q. Now, sir, I think --
11:05 24 MR. HUNG: We can take this down. Thank
11:05 25 you.

11:05 1 BY MR. HUNG:
11:05 2 Q. I think we've established in your view that
11:05 3 Align practices its own SmartTrack patents, the '691,
11:05 4 the first one, and all the others, correct, sir?
11:05 5 You're not disputing that?
11:05 6 A. Say that again, please.
11:05 7 Q. You aren't disputing that Align practices the
11:05 8 first SmartTrack patent, the soft-hard-soft, and all of
11:05 9 the asserted materials patents in this case?
11:06 10 A. I'm not opining on that.
11:06 11 Q. Well, sir, let's look at Slide 11. I think
11:06 12 this is the one you showed on the whiteboard.
11:06 13 Do you recall discussing this whiteboard with
11:06 14 the jury, sir?
11:06 15 A. Yes. I do.
11:06 16 Q. Okay. Let's look at the elongation at break.
11:06 17 If you take the whole SmartTrack sheet, the whole sheet
11:06 18 and you stretch it, what's the elongation at break
11:06 19 value, sir? Pick the middle one.
11:06 20 A. It is 135.6.
11:06 21 Q. And so, sir, under your theory, under your
11:06 22 theory that you have to test the whole sheet, it's the
11:06 23 case that SmartTrack itself wouldn't practice its own
11:06 24 patents, fair?
11:06 25 A. I don't know.

11:06 1 Q. You don't know? You don't know?
11:06 2 A. I didn't test it.
11:06 3 Q. Sir, you're offering testimony about copying,
11:07 4 anticopying. You say that Mr. Lahlouh didn't copy, did
11:07 5 all this work independently, correct?
11:07 6 A. Correct.
11:07 7 Q. But you know that the man who created the
11:07 8 Zendura A, which was the clone of EX30 that they made
11:07 9 for Align or sold to Align for a period, you know that
11:07 10 aligners -- he was supplying other companies with that
11:07 11 material.
11:07 12 You know that, right, Zendura A?
11:07 13 A. I think I learned that.
11:07 14 Q. You knew that. He certainly was doing so in
11:07 15 2014, right? Companies like ClearCorrect, Ormco,
11:07 16 et cetera, were buying Zendura A in 2014, right, sir?
11:07 17 A. I believe so.
11:07 18 Q. But you know that Mr. Lahlouh's own daughter,
11:07 19 when she needed aligners, got a SmartTrack aligner.
11:07 20 You know that, right, sir?
11:07 21 A. I heard him say that.
11:07 22 Q. And you know that he obtained the data sheet,
11:07 23 he testified, to make sure that it was safe for his
11:07 24 daughter. That's why he pulled the technical data
11:07 25 sheet off the website indicating the materials that

11:08 1 were in that aligner. You know that, right?
11:08 2 A. I heard him testify about the data sheets.
11:08 3 Q. And you know he created simulates, right, sir?
11:08 4 A. Yes.
11:08 5 Q. And you know he made those simulates in one
11:08 6 week. It took him just one week to make those
11:08 7 simulates. You know that, right?
11:08 8 A. I don't remember that.
11:08 9 Q. You don't remember that?
11:08 10 You read his deposition in this case, right,
11:08 11 sir?
11:08 12 A. Possibly.
11:08 13 Q. Let me see if I can help you with this.
11:08 14 I'll come back to it when we discuss
11:08 15 enablement.
11:08 16 Now, sir, independent development, I want to
11:08 17 be crystal clear, you're telling the jury your opinion
11:08 18 as an expert is that Bay Materials independently
11:08 19 developed this, okay? That's what you think, right?
11:08 20 A. Yes.
11:08 21 Q. Okay. Were you here when Dr. Li put up that
11:08 22 presentation where she talked about LE30?
11:08 23 Do you recall that, sir?
11:08 24 A. Vaguely. Yes.
11:09 25 Q. You do vaguely remember that.

11:09 And do you remember that that was an internal secret code name for SmartTrack at Align? Did you hear that?

A. Yes.

Q. And you also know, sir, don't you, that in January 1st of 2013, Align released SmartTrack? You know that, right?

A. Yes.

Q. Okay. You have before you -- when you saw 21 notebooks, you discussed those with Mr. Lahlouh, right?

A. Yes.

Q. Full opportunity to ask him what was in those notebooks, right?

A. Yes.

Q. If we can turn to DTX-811 in your binder.

Do you recognize that notebook, sir, as one of his notebooks?

A. Yes.

MR. HUNG: We'd offer this.

MR. ZUBLER: No objection.

THE COURT: Admitted.

BY MR. HUNG:

Q. Please turn to Page 105.

MR. HUNG: And let's publish it, and let's highlight it.

11:10 1 Next slide.
2 BY MR. HUNG:
11:10 3 Q. Now, sir, did you see -- if you look at this,
11:10 4 this is a slide --
11:10 5 MR. HUNG: Can we go back a slide? Can
11:10 6 you publish my Slide 12?
7 BY MR. HUNG:
11:10 8 Q. While you're looking, sir, you see that that
11:10 9 is a notebook page that Mr. Lahlouh -- from his own
11:10 10 notebook in January of 2013. You see that, right, sir?
11:10 11 A. I'm sorry. I'm on Page 105, but I don't see
11:10 12 that.
11:10 13 Q. You look at the bottom, sir, do you see that?
11:10 14 Right here. It's on the screen, sir. Look at the
11:10 15 screen.
11:10 16 That page is January 2nd, 2013, one day after
11:11 17 SmartTrack was available to the world and
11:11 18 orthodontists.
11:11 19 Do you see that?
11:11 20 A. Oh, so Page 98?
11:11 21 Q. Sure. You see that, sir? And you see his
11:11 22 name on that page? He signed it?
11:11 23 A. Yes.
11:11 24 Q. And do you see competitive analysis?
11:11 25 A. Yes. I do.

11:11 1 MR. HUNG: Okay. Let's blow this up.
11:11 2 Let's go to the next slide, same page.
3 BY MR. HUNG:
11:11 4 Q. Now, read along with me, sir: Competitive
11:11 5 analysis. Six Invisalign aligners made with LE30
11:11 6 material, three upper and three lower, were chopped and
11:11 7 dried in a vac.
11:11 8 Do you see that, sir?
11:11 9 A. Yes. I do.
11:11 10 Q. Do you see the following language: Two dried
11:11 11 chopped aligners LE30 were placed in the 2-by-2 frame
11:11 12 and pressed into a sheet at 420 degrees Fahrenheit in a
11:11 13 Carver press.
11:11 14 Do you see that, sir?
11:11 15 A. Yes. I do.
11:11 16 Q. This is one day after SmartTrack comes out,
11:11 17 sir, correct?
11:11 18 A. Looks like it.
11:11 19 Q. Do you stand by your opinion that he
11:12 20 independently developed Zendura FLX?
11:12 21 A. Yes. I do.
11:12 22 Q. All right. Sir, let's just touch upon the
11:12 23 consisting of limitation very briefly. Let's go to my
11:12 24 Slide 30, which was your DDX-7.27.
11:12 25 This is a cartoon that you showed the jury,

11:12 1 right? This is a cartoon image, fair?
11:12 2 A. Correct.
11:12 3 MR. HUNG: Now, let's go to the next
11:12 4 slide, which was PTX-1666 admitted.
5 BY MR. HUNG:
11:12 6 Q. Now, sir, if you look at this -- now, you may
11:12 7 disagree -- but her microscope, Dr. Reitman's
11:12 8 microscope picture shows three layers, right?
11:12 9 You see that, right?
11:12 10 A. Yes.
11:12 11 Q. And now let's add some lines.
11:12 12 And your theory is that there's blending
11:12 13 between these layers, the hard and the soft, right,
11:12 14 sir?
11:12 15 A. That's correct.
11:12 16 Q. Okay. Let's add the lines.
11:12 17 MR. HUNG: Next slide.
18 BY MR. HUNG:
11:12 19 Q. But your own analysis showed that the blending
11:12 20 doesn't go all the way through. In the middle, there's
11:13 21 this pure layer of TPU elastomer that isn't blended in,
11:13 22 fair?
11:13 23 A. That's correct.
11:13 24 Q. Also, sir --
11:13 25 MR. HUNG: Let's go to my Slides 3.43

11:13 1 which is the '613 patent. My Slide 3.
2 BY MR. HUNG:
11:13 3 Q. This argument that you made doesn't even apply
11:13 4 to all the patents, does it, sir?
11:13 5 A. No.
11:13 6 Q. It doesn't apply to the '613, right?
11:13 7 A. No.
11:13 8 Q. Next slide, Slide 4. Doesn't apply to the
11:13 9 '384, does it, sir?
11:13 10 A. No.
11:13 11 Q. Next slide. It doesn't apply to the '090,
11:13 12 Claim 1, does it, sir?
11:13 13 You see the word "containing," sir? That's
11:13 14 not "consisting of," right?
11:13 15 A. "Consisting" is not in that phrase.
11:13 16 Q. And, sir, so it's true that your argument that
11:13 17 you made about this blending doesn't even apply to all
11:14 18 the claims, right?
11:14 19 A. It only applies to some of them.
11:14 20 Q. Let's talk about Dr. Li for a second, who's in
11:14 21 the gallery today.
11:14 22 It's your opinion that she misrepresented
11:14 23 herself, that's what you think, to the Patent Office,
11:14 24 right?
11:14 25 A. That's correct.

11:14 1 Q. But, sir, you are not offering an opinion --
11:14 2 you are not offering an opinion that Dr. Chunhua Li
11:14 3 intended to defraud the Patent Office, are you, sir?
11:14 4 A. I'm not offering an opinion.
11:14 5 Q. And, sir, let's pull up their DTX --
11:14 6 MR. HUNG: Actually, I have it. If we
11:14 7 can switch to the ELMO.
8 BY MR. HUNG:
11:14 9 Q. This was -- this was your DTX-2189.
11:14 10 You recall seeing this before, correct, sir?
11:14 11 A. Yes.
11:14 12 Q. And I can slide it through. It's a little
11:14 13 hard to see here, but I'll slide it through to help
11:14 14 you.
11:14 15 If you look at this, we talked a lot in this
11:14 16 case about stress relaxation, right?
11:14 17 A. I talked a little bit about stress relaxation.
11:15 18 Q. You've heard other witnesses talk about stress
11:15 19 relaxation, correct?
11:15 20 A. Correct.
11:15 21 Q. And that is a big benefit of the multi-layer
11:15 22 materials, a combination of the TPU elastomer, and the
11:15 23 hard copolyester, true?
11:15 24 A. True.
11:15 25 Q. And, sir, if you look at this exhibit that you

11:15 1 created, DTX-2189, do you see that for every material
11:15 2 listed for which they ran this test, stress relaxation
11:15 3 is better, sometimes 5, 9, 10 times better, fair?
11:15 4 A. Than?
11:15 5 Q. Fair?
11:15 6 A. Than what?
11:15 7 Q. Than EX30.
11:15 8 A. Yes.
11:15 9 Q. And, sir, also --
11:15 10 MR. HUNG: Let's pull up JTX-79.
11 BY MR. HUNG:
11:15 12 Q. Now, you want to be fair to Dr. Li, right?
11:15 13 A. Of course.
11:15 14 Q. Okay.
11:15 15 MR. HUNG: Let's pull up JTX-79 as an
11:15 16 exhibit. And let's go to the top of this.
17 BY MR. HUNG:
11:16 18 Q. And you told the jury that the reason why she
11:16 19 rejected this was because those were bad materials.
11:16 20 Do you recall discussing that?
11:16 21 A. I didn't say "bad materials."
11:16 22 Q. Sir, did you read Dr. Li's deposition in this
11:16 23 case?
11:16 24 A. I believe so.
11:16 25 Q. And were you here when she testified?

11:16 1 A. I was.
11:16 2 Q. Did you hear her testify that "reasons to
11:16 3 reject" means that this is a summary of her comparisons
11:16 4 against SmartTrack? Do you understand that, that this
11:16 5 sheet is a comparison against SmartTrack? Do you
11:16 6 understand that?
11:16 7 A. I heard her say that.
11:16 8 Q. And "reason to reject" means she's explaining
11:16 9 after the fact why she thought these were not as good
11:16 10 as SmartTrack.
11:16 11 Do you recall that testimony?
11:16 12 A. I heard her say that.
11:16 13 MR. HUNG: Let's pull up the declaration,
11:16 14 which is the last exhibit.
11:16 15 BY MR. HUNG:
11:16 16 Q. Now, sir, you've read this declaration
11:17 17 probably many times now, right?
11:17 18 A. Yes.
11:17 19 Q. And do you know that this declaration -- I
11:17 20 just counted -- has 90 -- I think about 90 sentences,
11:17 21 correct, sir?
11:17 22 A. I haven't counted.
11:17 23 Q. You don't know. 12 pages?
11:17 24 A. Sounds right.
11:17 25 Q. And you aren't disputing that the vast

11:17 1 majority of this declaration, Dr. Li told the truth?
11:17 2 All of those statements are true. You're not disputing
11:17 3 that, are you, sir?
11:17 4 A. I've only focused on those certain parts.
11:17 5 Q. You've only focused on two sentences out of a
11:17 6 90-sentence, 12-page declaration, fair, sir?
11:17 7 A. I focused on those.
11:17 8 Q. And, sir, when you told the jury that the
11:17 9 Patent Office found this declaration persuasive, you
11:17 10 know that even after Dr. Li submitted this, the Patent
11:17 11 Office rejected her application twice after that.
11:17 12 You know that, right?
11:17 13 A. I recall that.
11:17 14 Q. And she had to amend her claims, right, sir?
11:17 15 A. Yes.
11:17 16 MR. HUNG: And if we pull up the notice
11:17 17 of allowance, let's pull that up, Mr. Smith.
11:18 18 And let's go to the reasons for
11:18 19 allowance.
11:18 20 Keep on going.
11:18 21 Keep on going.
11:18 22 Right there.
11:18 23 Let's blow up the second sentence
11:18 24 involving DeSimone. "DeSimone fails to teach."
25 BY MR. HUNG:

11:18 1 Q. Now, you were here when Ms. Li explained that
11:18 2 what was occurring here is people were telling -- the
11:18 3 Patent Office was telling her, hey. DeSimone, your
11:18 4 colleague, and Yan Chen, your co-inventor, it's obvious
11:18 5 to make in the light of this, right?
11:18 6 You understood that, right, sir?
11:18 7 A. I heard that.
11:18 8 Q. And you see in this next sentence right after
11:18 9 this that the Patent Office was persuaded that DeSimone
11:18 10 fails to teach, suggest, or disclose a sheet comprising
11:18 11 three or more polymer layers with all of these
11:18 12 limitations that we see in the SmartTrack patents.
11:18 13 Correct?
11:18 14 A. I see those words.
11:18 15 MR. HUNG: Actually, while we're at it,
11:18 16 can we pull up JTX-2? And let's go to the cover. You
11:18 17 can use Slide 2.
18 BY MR. HUNG:
11:19 19 Q. And I think there's some confusion here, sir.
11:19 20 MR. HUNG: If we can blow up the left
21 side, "filed."
22 BY MR. HUNG:
11:19 23 Q. It's really small. You can kind of see it.
11:19 24 This is the '613 patent, correct, sir?
11:19 25 A. Yes.

11:19 1 Q. This claims priority to the original
11:19 2 application filed in 2012, right?
11:19 3 A. Yes.
11:19 4 Q. And if you look under -- this specific
11:19 5 application, sir, was filed on March 31st, 2017.
11:19 6 Do you see that right there, sir?
11:19 7 A. Yes.
11:19 8 Q. For the jury's benefit, was that before or
11:19 9 after Zendura FLX was released?
11:19 10 A. That was after.
11:19 11 Q. May 31st --
11:19 12 A. I'm sorry. Zendura FLX. It says before.
11:19 13 Q. This application, the '613 application, was
11:19 14 filed before Zendura came on the market, true or false,
11:20 15 sir?
11:20 16 A. That's true.
11:20 17 Q. Basic question, sir, back to stress
11:20 18 relaxation. You agree that the material properties
11:20 19 improve stress relaxation for Zendura FLX, right?
11:20 20 A. I'm sorry. Say that again, please.
11:20 21 Q. You agree that the properties and the
11:20 22 materials in Zendura FLX improve stress relaxation,
11:20 23 right?
11:20 24 A. Yes.
11:20 25 Q. And you agree that that allows aligners to

11:20 1 treat complex cases more effectively, correct?
11:20 2 A. I imagine so.
11:20 3 Q. You don't know?
11:20 4 A. I'm not a dentist.
11:20 5 Q. You're not a dentist. You never made an
11:20 6 aligner material for an aligner, have you, sir?
11:20 7 A. That's correct.
11:20 8 Q. You never thermoformed an aligner?
11:20 9 A. I have.
11:20 10 Q. All right. All right, sir. Enablement. It's
11:20 11 your testimony that one of skill in the art such as
11:20 12 yourself could not make this material, right?
11:20 13 A. Which material?
11:20 14 Q. Could not make a material, according to the
11:20 15 claims, the four SmartTrack patents without undue
11:21 16 experimentation. That's what you're saying, right,
11:21 17 sir?
11:21 18 A. That's correct.
11:21 19 Q. But again, I want to be crystal clear. We
11:21 20 just established that Mr. Lahlouh, one or two days
11:21 21 after SmartTrack comes out, buys the material and chops
11:21 22 it up.
11:21 23 We saw that, right, sir?
11:21 24 A. I saw that.
11:21 25 Q. We know that rather than get his daughter his

11:21 1 own material, he gets his daughter Invisalign
11:21 2 SmartTrack.
11:21 3 We know that, right?
11:21 4 A. I heard that.
11:21 5 Q. We know that he gets the material data sheet
11:21 6 and looks at the polymers on that sheet.
11:21 7 We know that, right, sir?
11:21 8 A. I heard him say that.
11:21 9 Q. And finally, we know that he makes simulates
11:21 10 of the material, right, sir?
11:21 11 A. Yes.
11:21 12 Q. And what you'd forgotten is how hard that was,
11:21 13 whether it took him a week or a year or four years,
11:21 14 right?
11:21 15 A. Correct.
11:21 16 Q. Let me show you some deposition testimony.
11:21 17 You read Mr. Lahlouh's deposition testimony,
11:21 18 right?
11:21 19 A. I think so.
11:21 20 Q. Let me show it to you and see if this helps
11:22 21 you remember.
11:22 22 MR. HUNG: Let's go to Slide 35.
23 BY MR. HUNG:
11:22 24 Q. This is Lahlouh's transcript at Line 202.
11:22 25 And I'm going to show it to you.

11:22 1 MR. HUNG: Slide 35. Thank you,
11:22 2 Mr. Smith.
3 BY MR. HUNG:
11:22 4 Q. Now, read along with me.
11:22 5 How much time did you spend preparing the
11:22 6 simulates, sir?
11:22 7 Did I read that correctly?
11:22 8 A. Yes.
11:22 9 Q. To prepare the simulates, it takes standard
11:22 10 time, at least a week of work.
11:22 11 Do you see that, sir?
11:22 12 A. Yes.
11:22 13 Q. Do you stand by your testimony that it
11:22 14 requires undue experimentation to make the materials
11:22 15 according to the claims?
11:22 16 A. Yes.
11:22 17 Q. All right, sir. Let's talk about ASTM D638.
11:22 18 In your binder it's PTX-394.
11:22 19 MR. HUNG: I raised it yesterday, but I
11:22 20 just forgot to introduce it. PTX-394.
11:23 21 Mr. Zubler, I'm going to offer it also.
11:23 22 MR. ZUBLER: No objection.
11:23 23 THE COURT: Admitted.
11:23 24 BY MR. HUNG:
11:23 25 Q. And let's --

11:23 1 MR. HUNG: Let's put that up. Sir, let's
11:23 2 put up Slide 26.
3 BY MR. HUNG:
11:23 4 Q. This is the ASTM D638 standard, correct, sir?
11:23 5 A. That's correct.
11:23 6 Q. Now, let's take a step back. Dr. Reitman
11:23 7 applied Type 5 specimens, right?
11:23 8 A. That's correct.
11:23 9 Q. For the multi-layer sheet?
11:23 10 A. Yes.
11:23 11 Q. She didn't think she should run that test, but
11:23 12 she did, right?
11:23 13 A. I'm sorry. Say that again.
11:23 14 Q. Dr. Reitman did not think running the test on
11:23 15 the whole sheet was appropriate. You heard her say
11:23 16 that, right?
11:23 17 A. Yes.
11:23 18 Q. But when she ran the test, she applied an ASTM
11:23 19 D638 standard, right?
11:23 20 A. She -- yes. She used this procedure.
11:23 21 Q. And she did a Type 5 specimen, right, V, 5?
11:23 22 A. Yes.
11:23 23 Q. And you did a Type 4 specimen, right?
11:23 24 A. Correct.
11:23 25 Q. And you did it because in your view, a sheet

11:24 1 of Zendura FLX is nonrigid, right, sir?
11:24 2 A. That's one of the reasons.
11:24 3 Q. That's one of the reasons, right, sir?
11:24 4 And but you know, as a man who sits on the
11:24 5 standards committee for the ASTM, that D638 refers to
6 D883.
11:24 7 You know that, right?
11:24 8 A. Yes. It does.
11:24 9 Q. And let's go to the D883 standard at Slide 27.
11:24 10 Read along with me, sir. This is from
11:24 11 PTX-412: A nonrigid plastic is one that has a flexural
11:24 12 modulus of not over 70,000 megapascals or 10,000 PSI.
11:24 13 And then you see a reference to the D638
11:24 14 standard, correct, sir?
11:24 15 A. Yes.
11:24 16 Q. And now, sir, you know, right, that the -- you
11:24 17 know that the flexural modulus of Zendura FLX
11:24 18 altogether as a sheet is 213,000 PSI, right?
11:25 19 A. That sounds right.
11:25 20 Q. The flexural modulus with Zendura FLX is 20
11:25 21 times more -- it's 20 times this value right here,
11:25 22 right, sir, for a nonrigid plastic?
11:25 23 A. That sounds about right.
11:25 24 Q. That's right, sir?
11:25 25 Actually, let's -- let's show the jury. Let's

11:25 1 go to -- in your binder it's PTX-292.
11:25 2 Do you recognize this, sir, the tests that
11:25 3 were done by Bay Materials?
11:25 4 A. Yes.
11:25 5 MR. HUNG: I'd like to offer this.
11:25 6 MR. ZUBLER: No objection.
11:25 7 THE COURT: Admitted.
11:25 8 BY MR. HUNG:
11:25 9 Q. And, sir, if you look at Page 6 of this, you
11:25 10 will see a table. And in that table we will see that
11:25 11 Zendura FLX, the entire sheet has a tested value of
11:25 12 208,000 PSI.
11:25 13 Do you see that, sir? It's also on your
11:26 14 screen, sir.
11:26 15 A. Yes. I see that.
11:26 16 Q. And that is 20 times 10,000 PSI, correct?
11:26 17 A. That's correct.
11:26 18 Q. And nonrigid in D883, the definition, refers
11:26 19 to 10,000, correct?
11:26 20 A. Yes. As a general.
11:26 21 Q. Now, sir, the reason why you thought that
11:26 22 Zendura FLX is nonrigid, why you ran a Type 4 specimen,
11:26 23 and you say she was wrong, is because you bent it in
11:26 24 your hands, right, sir?
11:26 25 A. That's one evaluation.

11:26 1 Q. Can you tell the jury what the ASTM standard
11:26 2 is for assessing materials based on hand bending?
11:26 3 A. There isn't one. It's years of practice.
11:26 4 Q. Well, sir, are you aware of any peer-reviewed
11:26 5 publication that endorses manual bending as a method of
11:26 6 classifying rigidity?
11:26 7 A. No. It's best practices.
11:26 8 Q. You're not aware of one, though, right, sir?
11:26 9 A. No. It's best practices.
11:26 10 Q. In fact, sir, you've never looked to see if
11:26 11 there's an ASTM standard, of which you sit on the
11:27 12 committee, to see whether there is a manual bending
11:27 13 standard, correct?
11:27 14 A. That's correct.
11:27 15 Q. I want to close with one thing, sir.
11:27 16 MR. HUNG: Let's go to my Slide 6 listing
11:27 17 the four patents.
18 BY MR. HUNG:
11:27 19 Q. Now, sir, you agree that three different
11:27 20 examiners -- and I had to look into this, Ms. Beha
11:27 21 presumably changed her surname. But three different
11:27 22 examiners reviewed the materials patents, correct, sir?
11:27 23 A. I see that.
11:27 24 Q. And you agree that all three of them
11:27 25 determined that the patents should issue and in fact

11:27 1 issued them, the ones before you, correct, sir?
11:27 2 A. That's correct.
11:27 3 Q. And as part of their examination, sir, they
11:27 4 had to assess whether the claims of this patent are
11:27 5 enabled, correct, sir?
11:27 6 A. I believe so.
11:27 7 Q. They have to do that under the Manual of
11:28 8 Patents Examining Procedure, right, sir? The MPEP,
11:28 9 right?
11:28 10 A. I believe so.
11:28 11 Q. And they did, right, sir? You're not denying
11:28 12 they did?
11:28 13 A. I'm not denying that.
11:28 14 Q. And they allowed all four patents to issue,
11:28 15 right?
11:28 16 A. They did.
11:28 17 Q. And, sir, it's your view that they were wrong,
11:28 18 right, sir?
11:28 19 A. Yes.
11:28 20 Q. And that they made a mistake, right, sir?
11:28 21 A. They didn't have full information.
11:28 22 Q. Three different examiners, right? Right?
11:28 23 A. Yes.
11:28 24 MR. HUNG: I pass the witness.
11:28 25 REDIRECT EXAMINATION

11:28 1 BY MR. ZUBLER:
11:28 2 Q. Dr. Spiegelberg, let's start where Mr. Hung
11:28 3 just finished.
11:28 4 He was asking about other patents that were
11:28 5 granted, and you stated that the examiners for those
11:28 6 other patents didn't have full information. What did
11:28 7 you mean?
11:28 8 A. They didn't have the data that Dr. Li assessed
11:29 9 on all the various materials she considered.
11:29 10 Q. And did Dr. Li or Align submit any of that
11:29 11 data in any of their applications?
11:29 12 A. No.
11:29 13 Q. Let me ask you a few more questions as well
11:29 14 about some issues that Mr. Hung raised.
11:29 15 Let me start, if I could, to look at some data
11:29 16 from your report that Mr. Hung showed you with some
11:29 17 testing data.
11:29 18 MR. ZUBLER: If we could pull up
11:29 19 Spiegelberg rebuttal report, Paragraph 361, in the data
11:29 20 that Mr. Hung showed.
21 BY MR. ZUBLER:
11:29 22 Q. Do you recall looking at this data with
11:29 23 Mr. Hung?
11:29 24 A. Yes.
11:29 25 Q. And Mr. Hung pointed in particular to the

11:29 1 number 1096.
11:29 2 Do you recall that?
11:29 3 A. Yes. I do.
11:29 4 Q. For this testing that you're putting in this
11:29 5 chart in your report, what were the circumstances or
11:30 6 testing procedures you used to come up with this data?
11:30 7 A. This test was done not in compliance with D638
11:30 8 but was rather following what Dr. Reitman had conducted
11:30 9 in her test at the lower rate to see what the effects
11:30 10 of the lower rate out of compliance with D638 would be.
11:30 11 Q. I'm sorry. We're having a little trouble
11:30 12 hearing you. Could you just state that again, maybe
11:30 13 get a little closer to the microphone, Dr. Spiegelberg?
11:30 14 A. I'll try to get even closer.
11:30 15 Yes. This testing was done to replicate what
11:30 16 Dr. Reitman had done in her laboratory using the slower
11:30 17 rate of stretching and to understand why she was
11:30 18 getting the results that she got.
11:30 19 Q. Do you believe this is the proper testing
11:30 20 protocol, sir?
11:30 21 A. No. It's out of compliance with ASTM D638.
11:30 22 Q. Now, I notice here on this data there are five
11:30 23 reported sample numbers, four of which are under 200,
11:30 24 one of which is much larger.
11:30 25 How does that compare? Is that similar or

11:30 1 dissimilar to the bar chart you previously showed us
11:31 2 where you showed Dr. Reitman's data?
11:31 3 A. It's similar to what Dr. Reitman found where
11:31 4 there was a large variation in test results.
11:31 5 Q. And is it your opinion that Dr. Reitman's
11:31 6 protocol affected her test results?
11:31 7 A. It did.
11:31 8 Q. Mr. Hung also asked you a number of questions
11:31 9 about whether you applied for your testing that we
11:31 10 looked at earlier, whether you applied the proper
11:31 11 testing protocol.
11:31 12 Did anything that Mr. Hung asked you about or
11:31 13 showed you cause you to have any questions or doubts
11:31 14 about whether you applied the proper testing protocol?
11:31 15 A. No. I applied the proper testing protocol.
11:31 16 Q. Sir, how many years have you been on the ASTM
11:31 17 Committee D20 on Plastics that maintains the D638
11:31 18 standard?
11:31 19 A. I think about 20 years.
11:31 20 Q. Mr. Hung also asked you some questions and
11:32 21 he -- about Align patents. And he showed you some
11:32 22 testing data that show that the SmartTrack material, in
11:32 23 at least some testing data that I think you hadn't
11:32 24 seen, had an elongation at break below 200 percent.
11:32 25 Do you recall seeing that?

11:32 1 A. Yes. I do.
11:32 2 Q. And Mr. Hung was suggesting that SmartTrack
11:32 3 wouldn't be covered by Align's own patents. Was
11:32 4 that -- was that your understanding, sir?
11:32 5 A. I believe so. Yes.
11:32 6 MR. ZUBLER: If we could pull up the '691
11:32 7 patent, particularly Claim 1, and -- of -- this is
11:32 8 Align's original SmartTrack patent.
9 BY MR. ZUBLER:
11:32 10 Q. We looked at this claim with Mr. Hung. This
11:32 11 is the original claim for SmartTrack. Does this claim
11:33 12 require any particular elongation at break?
11:33 13 A. It does not.
11:33 14 Q. Would this claim cover Align's SmartTrack
11:33 15 patent?
11:33 16 A. Yes.
11:33 17 Q. Let me strike that question.
11:33 18 Would this claim cover Align's SmartTrack
11:33 19 material?
11:33 20 A. Yes.
11:33 21 Q. Now, Mr. Hung also asked you questions about
11:33 22 the declaration of Dr. Chunhua Li, and in particular we
11:33 23 talked about -- he talked about the accuracy of her
11:33 24 statement regarding the surprisingly superior
11:33 25 performance of certain materials.

11:33 1 Do you recall that, sir?
11:33 2 A. Yes. I do.
11:33 3 Q. And Mr. Hung suggested that Dr. Li's data did
11:34 4 show and was consistent with her statement.
11:34 5 What was Dr. Li's statement and how did it
11:34 6 compare to the data regarding the properties that were
11:34 7 surprisingly -- allegedly surprisingly superior?
11:34 8 A. Dr. Li told the Patent Office that the
11:34 9 properties were surprisingly superior on four metrics,
11:34 10 not just stress relaxation, but four other -- or three
11:34 11 other properties.
11:34 12 Q. And did Dr. Li's data show any materials that
11:34 13 were surprisingly superior on those four properties?
11:34 14 A. They did not.
11:34 15 Q. From a scientific -- from a scientific
11:34 16 perspective, were the statements in the 2019
11:34 17 declaration true or false?
11:34 18 A. They are false.
11:34 19 Q. Mr. Hung also asked you some questions about
11:34 20 the patents that were -- or strike that.
11:34 21 Mr. Hung asked you questions about the fact
11:35 22 that after the original declaration of -- I'm sorry,
11:35 23 after the original declaration that Dr. Li submitted,
11:35 24 actually the revised declaration that Dr. Li submitted,
11:35 25 Mr. Hung said that the claims were then rejected on

11:35 1 a -- provisionally by the patent examiner and only then
11:35 2 later allowed.
11:35 3 Do you recall that?
11:35 4 A. Yes. I do.
11:35 5 Q. But let's focus, if we could, on the notice of
11:35 6 allowance, the final reason why the claims were allowed
11:35 7 in this same patent prosecution.
11:35 8 What did that notice of allowance say with
11:35 9 respect to the revised declaration that Dr. Li
11:35 10 submitted?
11:35 11 A. The patent examiner stated that she was
11:35 12 persuaded by Dr. Li's declaration.
11:35 13 Q. Now, Mr. Hung also asked you some questions
11:36 14 about Mr. Lahlouh's notebooks.
11:36 15 Do you recall those -- that testimony?
11:36 16 A. I do.
11:36 17 Q. And he showed you some pages from one of the
11:36 18 notebooks dating to 2012, I believe.
11:36 19 A. Yes.
11:36 20 Q. Did Mr. Hung or anyone from Align ask
11:36 21 Mr. Lahlouh about those pages from Mr. Lahlouh's own
11:36 22 notebooks yesterday?
11:36 23 A. Not that I heard.
11:36 24 Q. Do you know why he asked you about those pages
11:36 25 and didn't ask Mr. Lahlouh?

11:36 1 A. I don't know.
11:36 2 Q. Now, those pages talked about competitive
11:36 3 analysis, I believe was the word.
11:36 4 Do you recall seeing that as the heading on
11:36 5 that page?
11:36 6 A. I do.
11:36 7 Q. Did you hear Mr. Lahlouh yesterday talk about
11:36 8 benchmarking?
11:36 9 A. Yes. I did.
11:36 10 Q. Are you familiar with the concept of
11:36 11 benchmarking?
11:36 12 A. Yeah. We do it in our lab.
11:37 13 Q. Is benchmarking a common or uncommon practice
11:37 14 in the industry?
11:37 15 A. It's very common.
11:37 16 Q. Looking at the pages that you did see from
11:37 17 Mr. Lahlouh's notebooks today, the pages they didn't
11:37 18 show Mr. Lahlouh, what is your understanding of whether
11:37 19 or not Mr. Lahlouh was doing benchmarking on those
11:37 20 pages?
11:37 21 A. It looked like he was doing benchmarking.
11:37 22 Q. Mr. Hung also asked you a few questions about
11:37 23 the original patent that was filed for the SmartTrack
11:37 24 material in this case.
11:37 25 Do you recall those questions?

11:37 1 A. Yes.
11:37 2 Q. When the statements that we focused on in the
11:37 3 revised declaration were made by Dr. Li and Align, were
11:37 4 the claims at issue then the same or different than the
11:38 5 claims that were made in the original patent?
11:38 6 A. They were different.
11:38 7 Q. And did those changes in the claims, the
11:38 8 amendments to the claims, did those occur before or
11:38 9 after the e-mails we looked at from 2018, when Align
11:38 10 executives were concerned about Zendura FLX?
11:38 11 A. They came after the e-mails.
11:38 12 Q. Mr. Hung also asked you some questions about
11:38 13 whether you should test the raw ingredient for a
11:38 14 multi-layer product or the final multi-layer product.
11:38 15 Do you remember those questions?
11:38 16 A. Yes.
11:38 17 Q. Why did you test the multi-layer product?
11:38 18 A. Because it's important to assess the
11:38 19 properties in the final finished device because that's
11:38 20 what's going to impact the patient.
11:39 21 Q. And from the perspective of the claim language
11:39 22 that you looked at, how should the claim language --
11:39 23 and speaking as a person of skill in the art, how
11:39 24 should the claim language be applied regarding that
11:39 25 testing?

11:39 1 A. The claim language is clear that they're
11:39 2 talking about the properties of the films in the
11:39 3 multi-layer film -- of the layers in the multi-layer
11:39 4 film.
11:39 5 Q. What did Align test before the case began?
11:39 6 Did they test the raw ingredient, or did they test the
11:39 7 multi-layer product?
11:39 8 A. They tested the multi-layer product.
11:39 9 Q. What about Bay Materials? Before this
11:39 10 litigation began, what did they test, the raw material
11:39 11 or the multi-layer product?
11:39 12 A. The multi-layer product.
11:39 13 Q. If the jury focuses on and applies the claim
11:39 14 language as you suggest based on your position as a
11:39 15 person of skill in the art and analyzes the claim
11:40 16 language so that the multi-layer product is the
11:40 17 relevant point of analysis, is there any basis for a
11:40 18 finding of infringement?
11:40 19 A. No.
11:40 20 Q. Let's go back, if we could, one final time,
11:40 21 Dr. Spiegelberg, to the analogy of the fence. If the
11:40 22 fence is properly drawn of Align's patents to cover the
11:40 23 proper scope of Align's claims, does the hard-soft-hard
11:40 24 configuration of Zendura FLX fall within that fence?
11:40 25 A. It does not.

11:40 1 Q. If the patent claims are stretched, if the
11:41 2 fence is stretched, as we did earlier over here, to
11:41 3 cover the hard-soft-hard configuration of Zendura FLX,
11:41 4 is -- are the Align patents enabled?
11:41 5 A. They are not.
11:41 6 Q. And if they're not enabled, are they valid or
11:41 7 invalid?
11:41 8 A. They're invalid.
11:41 9 Q. Is there any location in this entire space
11:41 10 where the Align patents are both infringed and valid?
11:41 11 A. No.
11:41 12 MR. ZUBLER: No further questions.
11:41 13 RECROSS-EXAMINATION
11:41 14 BY MR. HUNG:
11:41 15 Q. Dr. Spiegelberg, you spoke with Mr. Lahlouh,
11:41 16 correct?
11:41 17 A. Briefly.
11:41 18 Q. Briefly?
11:41 19 To prepare your opinions on this case that the
11:41 20 man didn't copy, you spoke with him briefly; is that
11:41 21 right?
11:41 22 A. About half an hour.
11:41 23 Q. Half an hour in total?
11:41 24 A. I think that's right.
11:41 25 Q. Now, you saw his 21 notebooks, right, sir?

11:41 1 A. Yes.
11:42 2 Q. Did you discuss those with him?
11:42 3 A. Yes.
11:42 4 MR. HUNG: And actually, since it was
11:42 5 raised on redirect, let's put that notebook back up, if
11:42 6 we could. That's my Slide 12. It's DTX-811, now
11:42 7 admitted.
11:42 8 And let's go to the next slide.
9 BY MR. HUNG:
11:42 10 Q. Now, sir, it's actually 2013. I was wrong.
11:42 11 It's one day after orthodontists start getting
11:42 12 SmartTrack.
11:42 13 Do you see that?
11:42 14 A. Yes.
11:42 15 Q. Now, sir, you're not disputing, based on what
11:42 16 Ms. Li said, Dr. Li, that LE30 is a confidential
11:42 17 internal code name for SmartTrack? No dispute about
11:42 18 that, right, sir?
11:42 19 A. I don't know.
11:42 20 Q. You don't know? Did you attend her testimony,
11:42 21 sir?
11:42 22 A. Yes.
11:42 23 Q. Did you have occasion to ask Mr. Lahlouh how
11:42 24 he obtained the code name LE30 and obtained aligners
11:42 25 one day after the commercial launch to test them? Did

11:43 1 you ask him that, sir?
11:43 2 A. I did not.
11:43 3 Q. Now, sir, you did -- I think you said you did
11:43 4 look at Mr. Lahlouh's patents, correct, sir?
11:43 5 A. I briefly looked at them.
11:43 6 Q. Did you look to see whether he submitted all
11:43 7 of those notebooks to the Patent Office to support his
11:43 8 patents and obtaining them?
11:43 9 A. I don't know.
11:43 10 Q. But yet you stand by your opinion, don't you,
11:43 11 that Dr. Li, who's obtained all these patents, 100 from
11:43 12 the U.S. Patent Office during her time at Align, should
11:43 13 have submitted two summary charts? Is that your
11:43 14 opinion?
11:43 15 A. Yes.
11:43 16 MR. HUNG: Your Honor, can I approach and
11:43 17 put the pedestal back up, the board back up?
11:43 18 THE COURT: Yes.
11:43 19 MR. HUNG: Thank you.
11:44 20 BY MR. HUNG:
11:44 21 Q. Now, Dr. Spiegelberg, you were asked about
11:44 22 this -- this exhibit, DDX-20.
11:44 23 And you created this, right?
11:44 24 A. Yes.
11:44 25 Q. And if you'll -- sorry. Too close.

11:44 1 And if you look at this, you will see you
11:44 2 pointed out all the prelitigation Align testing and all
11:44 3 the prelitigation Bay Materials testing, right?
11:44 4 A. Correct.
11:44 5 Q. Were those tests performed on the whole sheet,
11:44 6 or were those performed on an individual layer?
11:44 7 A. They were done on the whole sheets.
11:44 8 Q. Now, Dr. Reitman's testing, afterwards, also
11:44 9 done on the whole sheet, right, sir?
11:44 10 A. That's correct.
11:44 11 Q. And you can see that she's getting values that
11:44 12 are well in excess of 200 percent, sir, right?
11:44 13 A. For two of the specimens.
11:44 14 Q. You see that, right?
11:44 15 And that's because after that outer layer
11:44 16 broke, the rubber, the elastomer kept on stretching,
11:44 17 right?
11:44 18 A. At the wrong rate.
11:45 19 Q. But to be crystal clear for the jury so
11:45 20 there's no confusion, those are all tests on the
11:45 21 elongation at break of the whole sheet before
11:45 22 litigation. That's what you're saying, right, sir?
11:45 23 Right?
11:45 24 A. Some testing was after litigation.
11:45 25 Q. And, sir, we know the properties of Desmopan

11:45 1 or of Texin because we can read those on the data
11:45 2 sheet, right?
11:45 3 A. Before manufacturing.
11:45 4 Q. A person of skill in the art like you refers
11:45 5 to those data sheets all the time, sir, right?
11:45 6 A. As a general rule.
11:45 7 Q. So if I want to know how stretchy Texin or
11:45 8 Desmopan are, I don't got to run a test on the whole
11:45 9 sheet; I can just look at the data sheet, fair?
11:45 10 A. That's wrong.
11:45 11 Q. Sir, you mentioned that you have been a person
11:45 12 who's involved with ASTM, I think you said, for
11:46 13 20 years, right, sir?
14 A. Yes.
11:46 15 Q. And we talked about rigidity, correct, sir?
11:46 16 A. Yes.
11:46 17 Q. And you understand the importance of the
11:46 18 scientific method, correct, sir?
11:46 19 A. Yes.
11:46 20 Q. You learned about those in undergrad, high
11:46 21 school, at Wisconsin, right, sir?
11:46 22 A. That's correct.
11:46 23 Q. And part of the reason why you did your tests
11:46 24 that you said is better than Dr. Reitman's test is
11:46 25 because you think that Zendura FLX, the whole sheet is

11:46 1 nonrigid. That's part of the reason, right, sir?
11:46 2 A. The TPU layer is definitely nonrigid.
11:46 3 Q. And, sir, you still can't point me to a single
11:46 4 ASTM standard on the American Society of -- I think
11:46 5 it's Testing Methods, a single ASTM standard that
11:46 6 refers to manual bending to define that test, can you,
11:46 7 sir?
11:46 8 A. That's correct.
11:46 9 Q. Thank you.
11:47 10 Oh, I'm sorry. I forgot something.
11:47 11 MR. HUNG: Thank you, Ms. Durie.
11:47 12 Can we put up the '691 patent, which is
11:47 13 DTX-72?
14 BY MR. HUNG:
11:47 15 Q. I think there was an implication, sir, that
11:47 16 this patent doesn't cover elongation at break of a
11:47 17 layer more than -- less than 200 percent -- more than
11:47 18 200 percent.
11:47 19 Do you recall discussing that?
11:47 20 A. I do.
11:47 21 Q. Okay. Help me here. Read along with me.
11:47 22 MR. HUNG: Let's go to Claim 12 on
11:47 23 Page 19.
11:47 24 And, Your Honor, I'd also like to admit
11:47 25 this. I forgot to admit it.

11:47 1 MR. ZUBLER: No objection.
11:47 2 BY MR. HUNG:
11:47 3 Q. Okay. You see Claim 12, sir?
11:47 4 A. Yes. I do.
11:47 5 Q. Now, sir, we are looking at the first
11:47 6 SmartTrack patent, correct?
11:47 7 A. I believe so.
11:47 8 Q. And you were shown this first SmartTrack
11:47 9 patent and shown that it had a soft-hard-soft
11:47 10 configuration, correct?
11:47 11 A. That's correct.
11:47 12 Q. And it was implied that this patent doesn't
11:47 13 require, have claims that require an elongation at
11:48 14 break of greater -- of greater than about 200 percent,
11:48 15 right?
11:48 16 A. That's correct.
11:48 17 Q. And you see that Claim 12 refers to an
11:48 18 appliance, an aligner, right, sir?
11:48 19 A. Yes.
11:48 20 Q. Now, read along with me. It says that "the
11:48 21 second soft outer polymer layer," and then it
11:48 22 continues, "each independently comprise," and it
11:48 23 continues, "an elongation at break of greater than
11:48 24 about 200 percent."
11:48 25 Do you see that, sir?

11:48 1 A. Yes. I do.
11:48 2 MR. HUNG: Thank you.
11:48 3 MR. ZUBLER: Your Honor, very briefly.
11:48 4 THE COURT: Of course.
11:48 5 MR. ZUBLER: If we could just go back to
11:48 6 the '691 patent, the patent that Mr. Hung just had up,
11:48 7 and Claim 1.
11:48 8 FURTHER REDIRECT EXAMINATION
11:48 9 BY MR. ZUBLER:
11:48 10 Q. This is the claim we looked at previously,
11:48 11 Dr. Spiegelberg. And does this claim have an
11:48 12 elongation at break requirement, sir?
11:48 13 A. It does not.
11:48 14 Q. Can you practice a patent without practicing
11:49 15 every single claim in the patent?
11:49 16 A. Of course.
11:49 17 Q. Does Align's SmartTrack material practice
11:49 18 Claim 1 without any elongation at break requirement?
11:49 19 A. It does.
11:49 20 Q. Let me ask you just a handful more questions
11:49 21 about the copying allegations in this case which
11:49 22 Mr. Hung brought up again.
11:49 23 You were here for Dr. Reitman's testimony,
11:49 24 weren't you, sir?
11:49 25 A. Yes. I was.

11:49 1 Q. She didn't testify that Mr. Lahlouh copied,
11:49 2 did she?
11:49 3 A. I didn't hear her say that.
11:49 4 Q. What do you think? Do you think, based on
11:49 5 your analysis of the evidence, that Mr. Lahlouh copied
11:49 6 the SmartTrack patent or the SmartTrack material?
11:49 7 A. I do not.
11:49 8 Q. And what did Mr. Lahlouh say in court and
11:49 9 under oath regarding whether he copied the SmartTrack
11:49 10 patent or material?
11:49 11 A. He said he did not.
11:49 12 MR. ZUBLER: No further questions.
11:49 13 MR. HUNG: No questions.
11:49 14 Thank you, Your Honor.
11:49 15 THE COURT: Thank you, sir. You may step
11:50 16 down.
11:50 17 MR. MUELLER: Is Dr. Balakrishnan in the
11:50 18 courtroom?
11:50 19 I'm sorry, Your Honor?
11:50 20 THE COURT: Is the next witness -- is the
11:50 21 next witness --
11:50 22 MR. MUELLER: He's a fact witness,
11:50 23 Your Honor. Mr. Marbach.
11:50 24 THE COURT: Why don't we go ahead and get
11:50 25 that done, and then we'll go to lunch.

11:50 1 MR. MUELLER: That would be great,
11:50 2 Your Honor. Thank you.
11:50 3 At this point, Your Honor --
11:50 4 THE COURT: I'm sorry. Is that okay with
11:50 5 y'all?
11:50 6 MR. MUELLER: May I proceed, Your Honor?
11:50 7 At this point, we call Julien Marbach,
11:50 8 and Ms. Ferrera will conduct the examination.
11:50 9 (The witness was sworn.)
11:50 10 DIRECT EXAMINATION
11:50 11 BY MS. FERRERA:
11:51 12 Q. Good morning, sir. Could you please introduce
11:51 13 yourself?
11:51 14 A. I'm Julien Marbach.
11:51 15 Q. And where did you grow up, Mr. Marbach?
11:51 16 A. I grew up in France.
11:51 17 Q. Where do you currently work?
11:52 18 A. I currently work at Dental Wings in Montreal,
11:52 19 Canada.
11:52 20 Q. What is Dental Wings?
11:52 21 A. Dental Wings is a company that develops and
11:52 22 sells scanners, dental scanners and software, yeah, for
11:52 23 the dental field.
11:52 24 Q. And what is the relationship between Dental
11:52 25 Wings and Straumann?

11:52 1 A. Dental Wings is a company that is in support
11:52 2 of the Straumann Group.
11:52 3 Q. What's your current job title?
11:52 4 A. My current job title is principal software
11:52 5 developer.
11:52 6 Q. I'd like to just ask you a few questions about
11:52 7 your background.
11:52 8 First, can you tell us about your education
11:52 9 and your work history?
11:52 10 A. Sure. I attended a French engineering school,
11:52 11 where I obtained a master's degree in computer science.
11:52 12 And then I moved to Canada, where I've worked at a few
11:52 13 companies as a software developer before joining Dental
11:52 14 Wings.
11:52 15 Q. And when did you join Dental Wings?
11:52 16 A. I joined Dental Wings in 2007.
11:52 17 Q. What have your responsibilities been at Dental
11:53 18 Wings?
11:53 19 A. I've been a software developer, a technical
11:53 20 lead, then a manager, and now I'm more helping on the
11:53 21 strategy.
11:53 22 Q. So all told, Mr. Marbach, how long have you
11:53 23 now worked in the field of dental scanning technology?
11:53 24 A. About 20 years.
11:53 25 Q. So fair to say that dental scanning has been

11:53 1 around for several decades; is that correct?
11:53 2 A. That's correct.
11:53 3 Q. Now, Mr. Marbach, were you here earlier in the
11:53 4 week on Monday for the parties' opening statements?
11:53 5 A. Yes. I was.
11:53 6 MS. FERRERA: I'd like to pull up
11:53 7 DDX-1.62.
8 BY MS. FERRERA:
11:53 9 Q. And you should be able to see it on the screen
11:53 10 there.
11:53 11 Do you recall seeing this slide on Monday?
11:53 12 A. Yes. I do.
11:53 13 Q. And you see there's a reference on this slide
11:53 14 to DWOS?
11:53 15 A. I see that.
11:53 16 Q. Have you heard that term?
11:53 17 A. Yes. It stands for Dental Wings Open System,
11:53 18 which is an ecosystem of software and scanners that our
11:53 19 user can use and pull scans from and share those scans
11:54 20 with anybody they may want to.
11:54 21 Q. So that's the software that's used on the
11:54 22 scanners; is that right?
11:54 23 A. Exactly. DWOS is the software.
11:54 24 Q. And why is it called the Dental Wings Open
11:54 25 System?

11:54 1 A. Open system because the users have the choice
11:54 2 to export the data they capture with the scanner to any
11:54 3 third party.
11:54 4 Q. How long has Dental Wings had an open system?
11:54 5 A. Since the very beginning. It was like really
11:54 6 the mission of the company to offer such a system on
11:54 7 the market.
11:54 8 Q. And have all the dental scanners that Dental
11:54 9 Wings has developed been open systems?
11:54 10 A. Yes. All of them.
11:54 11 Q. Now, you mentioned a moment ago that Dental
11:54 12 Wings is now part of the Straumann family; is that
11:54 13 right?
11:54 14 A. That's right.
11:54 15 Q. And has that open system philosophy continued
11:54 16 under Straumann?
11:54 17 A. Yes. It does.
11:54 18 Q. So do Dental Wings scanners show any kind of a
11:54 19 preference for sending scans to ClearCorrect as opposed
11:55 20 to other clear aligner manufacturers?
11:55 21 A. No. It doesn't.
11:55 22 Q. And do Dental Wings scanners limit users'
11:55 23 ability to export files to other -- to other
11:55 24 manufacturers besides ClearCorrect?
11:55 25 A. No. It doesn't.

11:55 1 Q. Why has Dental Wings continued to maintain or
11:55 2 to use this open system philosophy?
11:55 3 A. Because we believe our users should have the
11:55 4 choice to work with whoever they want.
11:55 5 Q. I just have one last question, Mr. Marbach.
11:55 6 Are you proud of the work that you've done at
11:55 7 Dental Wings?
11:55 8 A. Yes. I am. Because we were the pioneers at
11:55 9 introducing open system in the dental field, and we've
11:55 10 always been a small company, a small engineering team,
11:55 11 facing competition from bigger corporation. And
11:55 12 despite that, we've had great success with our product.
11:55 13 So yeah, I'm proud of it.
11:55 14 MS. FERRERA: Thank you, Mr. Marbach.
11:56 15 Pass the witness.
11:56 16 CROSS-EXAMINATION
11:56 17 BY MR. NASH:
11:56 18 Q. Hello, Mr. Marbach.
11:56 19 A. Hello.
11:56 20 Q. We haven't met yet. My name's Brian Nash.
11:56 21 A. Nice to meet you.
11:56 22 Q. Nice to meet you too.
11:56 23 Before we start, you're aware of the iTero?
11:56 24 A. Yes. I am.
11:56 25 Q. Intraoral scanner, right?

11:56 1 A. An intraoral scanner. Yeah.
11:56 2 Q. By my client Align?
11:56 3 A. Yes.
11:56 4 Q. You're familiar with that device. You've seen
11:56 5 it before?
11:56 6 A. I've seen it before.
11:56 7 Q. Do you know whether iTero allows you to export
11:56 8 an STL file to order any competitive product?
11:57 9 A. I'm not sure about that.
11:57 10 Q. You're not sure about that?
11:57 11 A. That's right.
11:57 12 Q. You don't look at other scanners?
11:57 13 A. I do.
11:57 14 Q. How long have you been in the scanner
11:57 15 business?
11:57 16 A. For 20 years.
11:57 17 Q. 20 years. You've never determined whether or
11:57 18 not the iTero scanner can export STL files?
11:57 19 A. I've done that on other scanners but not on
11:57 20 the iTero specifically.
11:57 21 Q. Isn't the iTero scanner one of your competitor
11:57 22 scanners?
11:57 23 A. It's one of them.
11:57 24 Q. And you haven't determined whether it can
11:57 25 export a standard STL file?

11:57 1 A. No. Not specifically.
11:57 2 Q. I'd like to talk to you a little bit about
11:57 3 Virtuo Vivo and the SIRIOS scanners.
11:57 4 A. Right.
11:57 5 Q. You're familiar with those, right?
11:57 6 A. I do.
11:57 7 Q. You know how they work?
11:57 8 A. Yes.
11:57 9 Q. And you talked to defendants' expert about how
11:57 10 they operate; is that right?
11:57 11 A. Can you say that again, please?
11:58 12 Q. Defendants' expert Dr. Balakrishnan, you
11:58 13 talked with him about how they work, right?
11:58 14 A. That's correct.
11:58 15 Q. Okay. And you gave him information about
11:58 16 these products so that he could arrive at his opinions
11:58 17 in this case?
11:58 18 A. I did.
11:58 19 Q. I want to talk to you about that information
11:58 20 so that the jury can hear about it directly from you.
11:58 21 Okay?
11:58 22 A. Can you say that again, please?
11:58 23 Q. I would like to talk to you about the
11:58 24 information about how these devices operate so the jury
11:58 25 can hear it from you; is that okay?

11:58 1 A. That's fair.
11:58 2 Q. Okay. I'd like to start to see if we agree on
11:58 3 a few things.
11:58 4 Both of them have a handheld scanner, right?
11:58 5 A. That's right.
11:58 6 Q. Okay. The scanner is intraoral, right?
11:58 7 A. It is.
11:58 8 Q. It means you can put it in your mouth. That's
11:58 9 intraoral?
11:58 10 A. That's fair.
11:58 11 Q. Okay. And each is used with software?
11:58 12 A. Yes.
11:58 13 Q. Software is used to scan a patient's teeth,
11:58 14 right?
11:58 15 A. That's right.
11:59 16 Q. Okay. And I want you to follow along with me,
11:59 17 tell me if you disagree, but let's say we want to do an
11:59 18 initial scan. I want to do the workflow, okay?
11:59 19 A. Okay.
11:59 20 Q. Okay. Scanner's placed inside the mouth?
11:59 21 A. Right.
11:59 22 Q. Okay. Intraoral cavity, right?
11:59 23 A. Correct.
11:59 24 Q. You take the scanner, you rock it back and
11:59 25 forth over the teeth, right?

11:59 1 A. Yeah.
11:59 2 Q. All the way around the dental arch?
11:59 3 A. Yes.
11:59 4 Q. Now, that scanner, it gathers data, right?
11:59 5 A. It does.
11:59 6 Q. Okay. That data is about the teeth, right?
11:59 7 A. Yes. It is point cloud data.
11:59 8 Q. I'm sorry, what?
11:59 9 A. Point cloud data. Yes.
11:59 10 Q. The data that is being gathered by the scanner
11:59 11 is about the teeth; is that correct?
11:59 12 A. That's correct.
11:59 13 Q. And that data includes data about the surface
11:59 14 of the teeth, correct?
11:59 15 A. It does.
11:59 16 Q. It's not the inside of the teeth?
12:00 17 A. Sorry. Say that again.
12:00 18 Q. It is not the inside of the teeth?
12:00 19 A. No. It's not.
12:00 20 Q. It's the surface, right?
12:00 21 A. No. It's not the surface.
12:00 22 Q. It's data about the surface, correct?
12:00 23 A. Correct.
12:00 24 Q. The computer receives that data; isn't that
12:00 25 fair?

12:00 1 A. It does.
12:00 2 Q. Now, that data is then used to provide a 3D
12:00 3 rendering to the doctor, fair?
12:00 4 A. That's fair.
12:00 5 Q. The doctor can see something on his monitor;
12:00 6 is that true?
12:00 7 A. Yes, after processing.
12:00 8 Q. I'm sorry?
12:00 9 A. After processing. Yes.
12:00 10 Q. Isn't it true that the doctor can see
12:00 11 something on his monitor, his display?
12:00 12 A. It is true.
12:00 13 Q. It's three-dimensional?
12:00 14 A. Yes. It is.
12:00 15 Q. It's a rendering, right?
12:00 16 A. Yes.
12:00 17 Q. Now, the doctor can remove some of that data,
12:01 18 right?
12:01 19 A. That's right.
12:01 20 Q. It's the lasso tool or the cut tool. We heard
12:01 21 all about it yesterday.
12:01 22 A. That's right.
12:01 23 Q. Okay. Delete it, it's gone, that data, off
12:01 24 the -- off the rendering, true?
12:01 25 A. That's true.

12:01 1 Q. Now, next, the doctor can change something on
12:01 2 a tooth, right?
12:01 3 A. Correct.
12:01 4 Q. Okay. Like for a crown prep, for example.
12:01 5 You're familiar with a crown prep?
12:01 6 A. Yes.
12:01 7 Q. And if it's a little too high on one of the
12:01 8 teeth, you can trim a little bit more off, right?
12:01 9 A. That's right.
12:01 10 Q. Okay. And then the doctor would want to go
12:01 11 and scan back over that area, true?
12:01 12 A. Yes.
12:01 13 Q. He uses the scanner again, right?
12:01 14 A. It does.
12:01 15 Q. That scanner captures new data, true?
12:01 16 A. True.
12:01 17 Q. The data includes data about the surface?
12:01 18 A. Point cloud data. Yes.
12:01 19 Q. It includes data about the surface, true?
12:02 20 A. True.
12:02 21 Q. And specifically, that data is about the
12:02 22 surface where the doctor made a change, true?
12:02 23 A. It can be. Yes.
12:02 24 Q. He went back over the area where the crown was
12:02 25 adjusted, fair?

12:02 1 A. Fair.
12:02 2 Q. Okay. And he scanned that area, received some
12:02 3 data. That data is about an area that has changed,
12:02 4 correct?
12:02 5 A. That's correct.
12:02 6 Q. Changed on the surface, correct?
12:02 7 A. Can you say that again?
12:02 8 Q. The data that has been captured by the scanner
12:02 9 is -- includes data about an area on the surface that
12:02 10 has changed, correct?
12:02 11 A. Correct.
12:02 12 Q. Now, this new scan data, it's received by the
12:02 13 computer, right?
12:02 14 A. It is.
12:02 15 Q. And it is used to update what the doctor sees,
12:02 16 correct?
12:02 17 A. Not immediately.
12:03 18 Q. But it is used by the computer to update what
12:03 19 the doctor sees, right?
12:03 20 A. It is.
12:03 21 Q. Okay. The doctor deleted some data. This
12:03 22 data's being used to replace what got deleted, correct?
12:03 23 A. Correct.
12:03 24 Q. And that data, it gets registered onto what
12:03 25 the doctor sees; isn't that true?

12:03 1 A. Point cloud data. Yes.
12:03 2 Q. That data gets registered into what the doctor
12:03 3 sees, correct?
12:03 4 A. No. It doesn't.
12:03 5 Q. The rescan data would be registered with what
12:03 6 was existing, the existing scan data; is that correct?
12:03 7 A. That's correct.
12:03 8 Q. And that's true in the Virtuo Vivo, correct?
12:03 9 A. Yes.
12:03 10 Q. And it's true in the SIRIOS, correct?
12:03 11 A. Correct.
12:03 12 Q. And what he sees on his monitor has been
12:04 13 updated, correct?
12:04 14 A. Yes.
12:04 15 Q. Now, Virtuo Vivo first launched in 2019,
12:04 16 right?
12:04 17 A. That's correct.
12:04 18 Q. It had significant problems, didn't it?
12:04 19 A. I won't agree with that.
12:04 20 Q. It was pulled from the market shortly
12:04 21 thereafter, wasn't it?
12:04 22 A. Say again.
12:04 23 Q. It was pulled from the market shortly
12:04 24 thereafter, wasn't it?
12:04 25 A. Temporarily in the United States, yes.

12:04 1 Q. A few years later, Straumann bought a
12:04 2 different scanner company called AlliedStar; is that
12:04 3 right?
12:04 4 A. That is right.
12:04 5 Q. And now Straumann has an entirely different
12:04 6 scanner called SIRIOS, fair?
12:04 7 A. That's fair.
12:04 8 Q. And Virtuo Vivo isn't being sold at all right
12:04 9 now, right?
12:04 10 A. That's correct.
12:04 11 Q. So I want to talk about how -- what the doctor
12:04 12 sees, okay?
12:04 13 A. Okay.
12:04 14 Q. And you mentioned point cloud.
12:05 15 A. Sorry?
12:05 16 Q. You mentioned point cloud earlier, right?
12:05 17 A. I did.
12:05 18 Q. And I think what it's fair to say is your
12:05 19 position is that it looks like a bunch of points if you
12:05 20 zoom in; is that fair? Do I understand what that
12:05 21 means?
12:05 22 A. I won't put it like that.
12:05 23 Q. It's a rendering that's based on point cloud
12:05 24 data?
12:05 25 A. It is.

12:05 1 Q. Okay. So I'm going to use an example. I have
12:05 2 an apple, just for demonstrative purposes. I won't be
12:05 3 eating it. I'm going to scan the apple. We're going
12:05 4 to pretend the apple's the tooth.
12:05 5 Go over the apple, right?
12:05 6 A. Uh-huh. Right.
12:05 7 Q. It would show an apple on the display, true?
12:05 8 A. No. I won't say that.
12:05 9 Q. I think you would say it would show a
12:05 10 rendering of an apple on this display, correct?
12:05 11 A. That's correct.
12:05 12 MR. NASH: Okay. Let's pull up PDX-27.1.
13 BY MR. NASH:
12:06 14 Q. All right. Do we have our digital rendering
12:06 15 of the apple? Let's do a scan. Thank you.
12:06 16 Fair representation?
12:06 17 A. Fair representation of what? Sorry.
12:06 18 Q. Of how this would operate. Looks like a
12:06 19 digital rendering of an apple, correct?
12:06 20 A. I'm sorry. I didn't hear you. It looks like
12:06 21 a what?
12:06 22 Q. A digital rendering of an apple, correct?
12:06 23 A. Yes. I agree.
12:06 24 Q. And those dots, those points, each one of
12:06 25 them, right, you see those?

12:06 1 A. I do.
12:06 2 Q. That'd be based on the point cloud, correct?
12:06 3 A. That's a point cloud.
12:07 4 Q. That's a point cloud. It's data, right?
12:07 5 A. It is.
12:07 6 Q. Each one of those dots is data?
12:07 7 A. Yes.
12:07 8 Q. That data came from the scan of the surface of
12:07 9 the apple, correct?
12:07 10 A. That's correct.
12:07 11 Q. Now, we have a change. We're going to take a
12:07 12 bite out of our apple. I shouldn't bite it. No eating
12:07 13 in court. All right. So we've changed our apple.
12:07 14 The surface of the apple is different, right?
12:07 15 A. It is.
12:07 16 Q. So you can delete the data that's associated
12:07 17 with that area where it changed, right? Lasso tool,
12:07 18 cut tool, you can delete it, fair?
12:07 19 A. Correct.
12:07 20 Q. Okay. We're going to use our lasso tool.
12:07 21 Now, you can rescan that area where it was
12:07 22 changed, right?
12:08 23 A. Yes.
12:08 24 Q. The second scan you take involves capturing
12:08 25 data about that changed portion, doesn't it?

12:08 1 A. It does.
12:08 2 Q. The bite area, correct?
12:08 3 A. Correct.
12:08 4 Q. Where it changed, true?
12:08 5 A. True.
12:08 6 Q. And the software uses that new scan data to
12:08 7 update what the doctor sees, true?
12:08 8 A. True.
12:08 9 Q. And we see that there on the right, right?
12:08 10 A. Yes. We do.
12:08 11 Q. What the doctor sees has been updated?
12:08 12 A. Correct.
12:08 13 Q. It uses that new scan data to replace the part
12:08 14 that was removed, correct?
12:08 15 A. That's correct.
12:08 16 Q. All right. So let's talk about what the
12:08 17 doctor sees.
12:08 18 He sees an apple with a bite out of it, right?
12:08 19 A. It is.
12:08 20 Q. And that part with the bite, the creamy yellow
12:08 21 part, right there on the right, you see that?
12:08 22 A. I do.
12:08 23 Q. Okay. The information for that area, it came
12:08 24 from the second scan, correct?
12:09 25 A. Yes. Correct.

12:09 1 Q. That second scan had data, true?
12:09 2 A. True.
12:09 3 Q. That data was used to update what the doctor
12:09 4 sees, right?
12:09 5 A. That's correct.
12:09 6 Q. And that data was gathered by scanning the
12:09 7 surface, true?
12:09 8 A. That's correct.
12:09 9 Q. And each of those dots represents data, fair?
12:09 10 A. That's fair.
12:09 11 Q. All of those yellow and cream dots that came
12:09 12 from the data that was scanned in from the surface,
12:09 13 correct?
12:09 14 A. Sorry. Can you say that again?
12:09 15 Q. Each of those yellow and cream dots came from
12:09 16 data that was scanned in from the surface of that bite,
12:09 17 correct?
12:09 18 A. Correct.
12:09 19 Q. That data is data that came in from the
12:09 20 surface of the tooth, true?
12:09 21 A. I won't put it like that.
12:09 22 Q. The data didn't come from the inside of the
12:09 23 tooth, right?
12:09 24 A. No.
12:09 25 Q. It came from the surface of the tooth, right?

12:10 1 A. Generated from the surface of the tooth. Yes.
12:10 2 MR. NASH: Pass the witness, Your Honor.
12:10 3 REDIRECT EXAMINATION
12:10 4 BY MS. FERRERA:
12:10 5 Q. Mr. Marbach, counsel just asked you a number
12:10 6 of questions about the data that Virtuo Vivo and SIRIOS
12:10 7 use after a second scan where there's been a physical
12:10 8 change.
12:10 9 Do you recall that?
12:10 10 A. Yes. I do.
12:10 11 Q. What kind of data do the Virtuo Vivo and
12:10 12 SIRIOS use at that step?
12:10 13 A. They use point cloud data.
12:10 14 Q. And as a factual matter in the world of 3D
12:10 15 modeling, what is point cloud data?
12:10 16 A. It's a discrete set of individual points in
12:10 17 the 3D space.
12:10 18 Q. And as a factual matter in the world of 3D
12:11 19 modeling, what's the difference between point cloud
12:11 20 data and surface data?
12:11 21 A. Surface data is continuous and connected and
12:11 22 form the outer skin of an object; whereas, point cloud
12:11 23 data are not connected. They are individual dots in a
12:11 24 3D space. There's no interconnection and continuity;
12:11 25 whereas, surface data has it.

12:11 1 Q. And once again, which of those two types of
12:11 2 data do the Virtuo Vivo and SIRIOS use at the replacing
12:11 3 step in the rescanning process?
12:11 4 A. Point cloud data.
12:11 5 Q. Last question, Mr. Marbach.
12:11 6 Can you just remind us again, are the Virtuo
12:11 7 Vivo and SIRIOS open systems or closed systems?
12:11 8 A. They are open systems.
12:11 9 MS. FERRERA: Thank you. Pass the
12:11 10 witness.
12:11 11 MR. NASH: No further questions,
12:11 12 Your Honor.
12:11 13 Thank you, Mr. Marbach.
12:11 14 THE WITNESS: Thank you.
12:11 15 THE COURT: Thank you, sir.
12:11 16 May he be excused?
12:11 17 MR. MUELLER: Yes, Your Honor.
12:11 18 THE COURT: Thank you.
12:11 19 Could I have counsel up here for a
12:11 20 second?
12:11 21 (Bench conference.)
12:12 22 THE COURT: So if I'm following along,
12:12 23 you now want to --
12:12 24 MR. MUELLER: We move for JMOL now.
12:12 25 THE COURT: So let's do this. I tell the

12:12 1 jury to be back at 1:45, and we will get back at -- is
12:12 2 it 12:30? Yeah. Why don't we get back at 1:30, and
12:12 3 we'll take that Rule 50 motion up.
12:12 4 MR. MUELLER: Thank you, Your Honor.
12:12 5 MR. NASH: Thank you, Your Honor.
12:12 6 (Bench conference concludes.)
12:12 7 THE COURT: Ladies and gentlemen of the
12:12 8 jury, we're going to take our lunch recess. If you'd
12:12 9 please be back and ready to go by 1:45, we'll start
12:12 10 then.
12:12 11 Please remember my instructions not to
12:12 12 discuss the case, and I will see you then.
12:12 13 THE BAILIFF: All rise.
12:12 14 (Jury exited the courtroom.)
12:13 15 THE COURT: Thank you. You may be
12:13 16 seated.
12:13 17 Counsel, if you'll be back here at 1:30,
12:13 18 we'll take up the motions, the renewed motion under
12:13 19 Rule 50. Is there anything I need to take up besides
12:13 20 that?
12:13 21 MR. MUELLER: Nothing further for
12:13 22 defendants, Your Honor. Thank you.
12:13 23 MS. DURIE: No, Your Honor.
12:13 24 THE COURT: Thank you.
12:13 25 (Recess taken.)

01:27 1 THE BAILIFF: All rise.
01:27 2 THE COURT: Thank you. You may be
01:27 3 seated.
01:27 4 I'm happy to take up the Rule 50 motion.
01:28 5 MR. MUELLER: Thank you, Your Honor. May
01:28 6 I proceed?
01:28 7 THE COURT: Please.
01:28 8 MR. MUELLER: Your Honor, there's a
01:28 9 number of reasons why we believe and would respectfully
01:28 10 request that judgment as a matter of law enter on the
01:28 11 '936 patent, and I'll go through the secondary reasons
01:28 12 in a moment.
01:28 13 But the high-level primary reason why we
01:28 14 believe JMOL is appropriate is that there was a failure
01:28 15 of proof. And when the witnesses -- expert witnesses
01:28 16 for the plaintiff testified to present the infringement
01:28 17 case, neither of the two experts, Dr. Valley nor
01:28 18 Dr. Singh, addressed all of the requirements of the
01:28 19 claims.
01:28 20 And, Your Honor, may I just pass out the
01:28 21 slides they used?
01:28 22 THE COURT: Sure.
01:28 23 MR. MUELLER: This is Dr. Valley. And
01:29 24 this is Dr. Singh.
01:29 25 THE COURT: Okay.

01:29 1 MR. MUELLER: And, Your Honor, I'll just
01:29 2 take you, if I could, to the key slides that were
01:29 3 presented. These are their demonstratives.
01:29 4 In the Valley deck, it's Slide 3.11. And
01:29 5 as you can see, Your Honor, on this slide -- and I can
01:29 6 put it on the ELMO too. It says: Replace at least --
01:29 7 this is Dr. Valley -- replace at least a portion of the
01:29 8 removed surface portion of the model using the received
01:29 9 second scan data.
01:29 10 That's the highlighted portion.
01:29 11 But the requirement continues. The
01:30 12 requirement continues. It's not just scan data. It
01:30 13 also requires of the patient's teeth including,
01:30 14 including surface data of a physically changed portion
01:30 15 of the patient's intraoral cavity.
01:30 16 And so the claim requires the receipt --
01:30 17 receive second scan data, and that scan data needs to
01:30 18 include surface data. And we know those are two
01:30 19 different things because there's two different terms in
01:30 20 the claim. It's scan data including surface data.
01:30 21 And Dr. Valley never addressed the
01:30 22 surface data. Dr. Valley didn't have the expertise to
01:30 23 do so. She is not a computer scientist. She's not an
01:30 24 expert on 3D graphics modeling. And she did not
01:30 25 address that issue in any way, shape, or form in her

01:30 1 testimony on the stand on Monday.

01:30 2 Now, for Dr. Singh's part, in this deck,

01:30 3 Your Honor, the one with the Avatar photo on the cover,

01:30 4 if we go to Slide 4.6. So here, again, the highlighted

01:31 5 portion for which an opinion was offered, it is to

01:31 6 replace at least a portion of the removed surface

01:31 7 portion of the model using the received second scan

01:31 8 data.

01:31 9 So again, what needs to be received is

01:31 10 second scan data, but that's not all. The second scan

01:31 11 data in the portion that continues but was not

01:31 12 addressed by Dr. Singh requires that the scan data

01:31 13 include surface data for a physically changed portion

01:31 14 of the intraoral cavity.

01:31 15 Again, this is different than scan data,

01:31 16 two different terms. And surface data, our position

01:31 17 has been in this case, is not the same thing as point

01:31 18 cloud data. Points are different than surfaces.

01:31 19 And neither Dr. Valley nor Dr. Singh

01:31 20 offered any opinion to this jury explaining how point

01:32 21 cloud data could be surface data to meet the

01:32 22 requirements of the claim.

01:32 23 And Dr. Singh acknowledged when

01:32 24 cross-examined by Ms. Ferrera that he had not addressed

01:32 25 that portion of the case.

01:32 1 On redirect, on redirect, there was an
01:32 2 attempt to have some sort of opinion offered by
01:32 3 Dr. Singh, and this is at the trial transcript on
01:32 4 Page 261. But even then, even then, on redirect, after
01:32 5 Ms. Ferrera had extracted a concession that he did not
01:32 6 offer any opinion -- and let me read her question and
01:32 7 answer.
01:32 8 Question: You didn't give any opinion
01:32 9 about the second portion of the claim limitation during
01:32 10 your direct testimony, did you?
01:32 11 Answer: I did not.
01:32 12 That's the trial testimony at Page 259,
01:32 13 two pages earlier, Lines 13 through 14.
01:32 14 You didn't give any opinion about the
01:33 15 second portion of the claim limitation during your
01:33 16 direct testimony, did you?
01:33 17 I did not.
01:33 18 On redirect, again, on redirect on
01:33 19 Page 261, there was an attempt to have Dr. Singh offer
01:33 20 that opinion. And he didn't do it even then. He made
01:33 21 a passing reference to the entire phrase, the first
01:33 22 line of his answer on Line 11 of the transcript.
01:33 23 But even that conclusory reference said
01:33 24 nothing about surface data and focused on the words
01:33 25 "physically changed portion of the person's intraoral

01:33 1 cavity."

01:33 2 So we have a clear failure of proof.

01:33 3 Neither expert addressed a requirement of the claim

01:33 4 language. Neither expert even attempted to explain how

01:33 5 the point cloud data used in the accused scanners could

01:33 6 satisfy the surface data requirement of the claims.

01:33 7 And then today, Your Honor, we called a

01:33 8 fact witness. And I'll note parenthetically, our

01:34 9 understanding had been the reason why Align was leaving

01:34 10 their case open for that fact witness was that the fact

01:34 11 witness might provide some testimony that could assist

01:34 12 their indirect infringement claims vis-à-vis

01:34 13 encouragement of customers to use scanners and

01:34 14 instructions for how to do it.

01:34 15 Nonetheless, we called that fact witness,

01:34 16 Mr. Marbach, and he was not asked a question during

01:34 17 cross-examination about surface data. He was asked

01:34 18 questions about data about the surface but wasn't asked

01:34 19 about the claim term "surface data."

01:34 20 The only question to Mr. Marbach about

01:34 21 surface data was from Ms. Ferrera on redirect. And in

01:34 22 response, Mr. Marbach explained, no, that the scanners

01:34 23 use point cloud data, not surface data.

01:34 24 So what we have here, Your Honor, is a

01:34 25 record where the two experts who are offered by Align

01:34 1 failed to address a claim requirement. Neither one
01:34 2 addressed one of the requirements that needs to be
01:34 3 satisfied for infringement. We offered a fact witness
01:35 4 who denied, who denied that that technical element was
01:35 5 met in the accused scanners.
01:35 6 Now, we didn't show him the claim
01:35 7 language. He was here as a fact witness. But he
01:35 8 denied that the point cloud data was surface data.
01:35 9 So we have a fact witness denial. We
01:35 10 have two experts failing to meet the requirement in any
01:35 11 form or fashion. That's a failure of proof. And that
01:35 12 failure of proof means no reasonable juror could find
01:35 13 infringement of this patent.
01:35 14 On top of that, the only claim that's
01:35 15 actually pleaded in the complaint is an indirect
01:35 16 infringement claim, not direct, indirect infringement
01:35 17 claim.
01:35 18 And here, mere knowledge of the patent is
01:35 19 not enough. Of course as Your Honor knows, knowledge
01:35 20 of infringement would be required. There's no
01:35 21 evidence, none, that ClearCorrect or the other
01:35 22 defendants knew about any infringement of the '936
01:35 23 patent before the lawsuit was filed.
01:35 24 After the suit was filed, we have
01:35 25 asserted reasonable defenses showing no intent to

01:35 1 infringe. At best --

01:36 2 THE COURT: And there's no -- and there's

01:36 3 no marking issue with that patent?

01:36 4 MR. MUELLER: Correct. And even if there

01:36 5 were marking, Your Honor, the marking would not suffice

01:36 6 to show that we had knowledge of infringement.

01:36 7 On top of that, there's no specific act

01:36 8 of direct infringement that's been shown.

01:36 9 Dr. Singh, in addition to the failure of

01:36 10 proof that I mentioned earlier, testified only about

01:36 11 how the software worked, but Align put on no evidence

01:36 12 of any use in the United States.

01:36 13 On top of that, there's no expert opinion

01:36 14 on damages for this patent, and Your Honor has

01:36 15 previously suggested that you might not instruct on or

01:36 16 have the jury render a verdict on damages for this

01:36 17 patent even if it were to go to the jury on

01:36 18 infringement.

01:36 19 So this is a patent for which there's no

01:36 20 damages claim, no damages opinion by Mr. Lasinski, no

01:36 21 evidence of indirect infringement, no predicate act of

01:36 22 direct infringement in the United States, no evidence

01:36 23 of intent, and no opinion by the experts on a claim

01:36 24 requirement for each of the asserted claims.

01:36 25 All we have in this record, Your Honor,

01:36 1 on requirements that need to be shown is a fact witness
01:37 2 saying it doesn't happen. So we have a fact witness
01:37 3 saying it doesn't happen, two experts failing to say it
01:37 4 does happen, and on that record, no reasonable juror
01:37 5 could find infringement.
01:37 6 THE COURT: A response?
01:37 7 MR. NASH: Your Honor, with apologies, I
01:37 8 do have a couple of slides, but I wasn't able to get
01:37 9 those printed out in advance. Would it be okay for me
01:37 10 to use those on the screen?
01:37 11 THE COURT: Of course.
01:37 12 MR. NASH: Okay.
01:37 13 Mr. Smith, if you don't mind.
01:37 14 THE COURT: Has opposing counsel seen
01:37 15 them?
01:37 16 MR. NASH: No.
01:37 17 (Conference between counsel.)
01:37 18 MR. NASH: Your Honor, I heard opposing
01:37 19 counsel up here arguing on this Rule 50. I should
01:37 20 start out by saying there is substantial evidence in
01:38 21 the record on every single limitation. It was brought
01:38 22 in both by our experts and by a percipient fact witness
01:38 23 that we called from defendants, but what I heard from
01:38 24 opposing counsel was effectively a claim construction
01:38 25 that is contrary to the plain and ordinary meaning.

01:38 1 Your Honor actually addressed this term
01:38 2 or the context of this limitation in his -- in your
01:38 3 Markman order. The portion that we're talking about
01:38 4 today was not construed and, therefore, has its plain
01:38 5 and ordinary meaning.
01:38 6 Both experts applied that meaning, and
01:38 7 then the percipient fact witness confirmed that surface
01:38 8 data is present in the data that's being displayed to
01:38 9 the doctor.
01:38 10 So with the Court's permission, I'd like
01:38 11 to walk through the claim construction, what our
01:38 12 experts did, and then what the percipient witness just
01:38 13 conceded.
01:38 14 So as we see up here, Your Honor, this is
01:38 15 the Court's construction. The "receive second data" is
01:38 16 the preceding limitation. I think that's important,
01:39 17 Your Honor, because this is where this term first comes
01:39 18 up. This term was never construed.
01:39 19 So we have been talking today about the
01:39 20 second scan. That's when the surface of the tooth has
01:39 21 been modified. You go back in, you scan again, and
01:39 22 then that second scan includes surface data.
01:39 23 Surface data is just data of the surface,
01:39 24 data about the surface. It's of the physically changed
01:39 25 portion of the patient's intraoral cavity.

01:39 1 That portion I've highlighted in orange,
01:39 2 Your Honor, is the portion that the Court construed.
01:39 3 Now, that construction did have a
01:39 4 computer science element to it. It was to require that
01:39 5 replace be registering, "registering" meaning aligning
01:39 6 that data up with the existing model and then attaching
01:39 7 it.
01:39 8 But the rest of it, Your Honor, does not
01:39 9 have a computer science-type definition. It is a plain
01:39 10 and ordinary definition. That's what our two experts
01:39 11 applied. And they approached this as one of ordinary
01:39 12 skill in the art.
01:39 13 So here's the Court's construction on
01:39 14 that orange portion. I don't believe the orange
01:39 15 portion is in dispute. Register the second data --
01:40 16 again, that's the data from the rescan -- after
01:40 17 removing the second data of the removed second portion.
01:40 18 Your Honor, this part from the
01:40 19 specification confirms that this plain and ordinary
01:40 20 meaning is intended to be broad. So this comes from
01:40 21 Column 3, Lines 41 to 60, Your Honor. And it's
01:40 22 referring to the intake of that data.
01:40 23 It says: The term "scanning" and its
01:40 24 analogs refer to any procedure directed to obtaining 3D
01:40 25 topographic data of a surface.

01:40 1 So in the context of this patent, it is
01:40 2 adopting the plain and ordinary meaning wherein scan
01:40 3 data is any data of a surface, any data of a surface.
01:40 4 And that's exactly what our experts addressed.
01:40 5 So Dr. Valley walked through each of the
01:40 6 limitations. In the context of this limitation,
01:40 7 Your Honor, which is the replace limitation, as I've
01:40 8 highlighted here in green, Your Honor, it's referring
01:40 9 to the including surface data of the physically changed
01:40 10 portion of the patient's intraoral cavity.
01:40 11 And then she addressed this specifically
01:40 12 with both a demonstrative, record evidence, which was
01:41 13 PTX-1798.21.
01:41 14 And she was asked: Now, about this
01:41 15 limitation, replace at least a portion of the removed
01:41 16 surface portion of the model using the second received
01:41 17 second scan data including surface data of the
01:41 18 physically changed portion of the patient's intraoral
01:41 19 cavity.
01:41 20 That's a mouthful. What does that mean?
01:41 21 It means that when I went in for the
01:41 22 second time -- she's referring to her testing -- and I
01:41 23 was scanning the surface of the tooth that I had
01:41 24 previously removed from the display and the scanner's
01:41 25 picking up the surface of the tooth, the data from

01:41 1 that -- "from that," meaning the surface -- and that is
01:41 2 being projected now onto the display screen.
01:41 3 So she is offering her expert opinion
01:41 4 that data from the surface of the tooth has been
01:41 5 scanned in as part of the second scan.
01:41 6 Dr. Balakrishnan addressed the exact
01:41 7 same thing, and in fact, he referred broadly to what it
01:41 8 is that constitutes scan data.
01:41 9 He says: When you're using scanners,
01:42 10 it's light reflecting off points on the surface of an
01:42 11 object. Those points can be called a point cloud.
01:42 12 That's a digital model. It's a 3D model that's in the
01:42 13 computer of the physical object surface.
01:42 14 So Dr. Singh's opinion is that a point
01:42 15 cloud, Your Honor, is how data is input from a 3D
01:42 16 model, and that itself is a model of the physical
01:42 17 object's surface.
01:42 18 He continues.
01:42 19 He was asked: Do all three of these
01:42 20 types of models, meaning the point cloud, the mesh, and
01:42 21 the grid, do these represent the surface of the tooth?
01:42 22 He says: Absolutely. All three -- all
01:42 23 three are 3D digital models of the physical surface of
01:42 24 the tooth.
01:42 25 He continues.

01:42 1 Well, before you go into your analysis --
01:42 2 And by the way, Your Honor, we confirmed
01:42 3 with Dr. Singh that that was his understanding, and
01:42 4 that understanding was consistent with the '936 patent.
01:42 5 I have the citation for that as well.
01:42 6 Well, before we go into your analysis, I
01:42 7 want to ask, what's the point of this definition?
01:42 8 And now he's talking about that
01:42 9 "registration" definition that the Court provided.
01:43 10 He said: The point of this is really
01:43 11 something we've actually already seen with
01:43 12 Mr. Kopelman, Dr. Valley. They talked about it, and I
01:43 13 just mentioned you have a model. A portion of it's
01:43 14 removed. What's left is the retained portion. Then
01:43 15 you get some new data. You align it and combine it.
01:43 16 So now he's applying the computer science
01:43 17 context to the data, but the data itself was second
01:43 18 scan data. And as Dr. Valley testified to, that second
01:43 19 scan data relates to the surface of the tooth.
01:43 20 He continues.
01:43 21 After going through the source code, he
01:43 22 recited the different functions, which ones were
01:43 23 referring to functions that created the retained
01:43 24 portion of the model, Your Honor.
01:43 25 Then he also walks through the source

01:43 1 code and talks about the functionality that's used to
01:43 2 add new data.
01:43 3 And when asked how that operated, he
01:43 4 said: So as I've said before, once the second scan
01:43 5 data is passed to the MatchAndInsertFrame function,
01:43 6 that data gets matched with the retained model, and it
01:44 7 gets inserted or combined with the model. It gets
01:44 8 registered.
01:44 9 Finally, Your Honor, when he was asked by
01:44 10 opposing counsel in cross, he actually clarified this.
01:44 11 She said: My question was, surface data
01:44 12 is one type of data, one type of scan data in the
01:44 13 context of the '936 patent.
01:44 14 He said: It is the scan data in the
01:44 15 context of the '936 patent. Yes.
01:44 16 Because scanners can take in lots of
01:44 17 different types of data, but in the context of the '936
01:44 18 patent, Your Honor, the scan data is surface data.
01:44 19 And on redirect, Your Honor, it is -- he
01:44 20 did clarify that his opinion was that the phrase was
01:44 21 met, the entirety of it. And as he -- he referenced
01:44 22 Dr. Valley again.
01:44 23 The second scan data we've been talking
01:44 24 about, that has been shown prior by Dr. Valley with
01:44 25 toothpaste on there. By a conversation with

01:44 1 Mr. Kopelman, it refers to a physically changed portion
01:45 2 that is being scanned.
01:45 3 So you had a surface there before. It's
01:45 4 a different surface. So all this portion in red is
01:45 5 saying -- and that's the additional portion that's now
01:45 6 in green, Your Honor -- it's just saying you can't scan
01:45 7 something that existed before. You must include in
01:45 8 that same some portions of a surface that is actually
01:45 9 physically changed on the surface of the tooth.
01:45 10 And, Your Honor, counsel referred to part
01:45 11 of the cross-examination but left out -- sorry,
01:45 12 Your Honor. I'm looking for a citation that's not on a
01:45 13 slide.
01:45 14 So opposing counsel asked again -- I'm
01:45 15 not sure what -- oh. She was asking about what
01:45 16 Dr. Balakrishnan was going to testify to.
01:45 17 She said: You don't give any of that
01:45 18 testimony here to the jury today, right, with respect
01:45 19 to the second portion of the limitation?
01:45 20 He said: I actually did.
01:45 21 Which is why I asked for his
01:45 22 clarification on redirect, because he did testify to
01:45 23 that, Your Honor. He testified to the second scan
01:46 24 data, what happened to it from a computer science
01:46 25 perspective. And that second scan data is data from

01:46 1 the surface of the tooth. It's data of the tooth.
01:46 2 It's data about the surface of the tooth, Your Honor.
01:46 3 Leaving aside that our experts
01:46 4 established substantial evidence on their own, we also
01:46 5 got that confirmed by the percipient witness today.
01:46 6 And, Your Honor, as we see in Ironburg
01:46 7 versus Valve, 64 F.4th 1274, it's not necessary to have
01:46 8 expert testimony when there is an easy-to-establish
01:46 9 infringement where the jury can reach its own decision
01:46 10 on infringement by ignoring all the expert testimony
01:46 11 and focusing exclusively on the patent and the accused
01:46 12 device.
01:46 13 They're allowed to make a factual
01:46 14 determination, Your Honor, and we had a factual witness
01:46 15 that testified to that. His name was Julien Marbach.
01:46 16 He is knowledgeable about the accused devices and, Your
01:46 17 Honor, he confirmed that every single limitation was
01:46 18 met.
01:46 19 So I'm here on Slide 13, Your Honor,
01:46 20 systems for scanning handheld intraoral scanner. He
01:47 21 confirmed that both of these systems had that. Receive
01:47 22 first scan data, the patient's teeth. He confirmed
01:47 23 that both of those had that just moments ago,
01:47 24 Your Honor. Same with displaying it. Based on a
01:47 25 received first scan data, receiving user input defining

01:47 1 a portion of the model to be removed. Remove -- a
01:47 2 surface portion to be removed.
01:47 3 Deleted. Gone.
01:47 4 Receive second scan data of the patient's
01:47 5 teeth. And, Your Honor, this is where he's confirming
01:47 6 that it's receiving that second data.
01:47 7 And then importantly, the portion that
01:47 8 we're talking about, Your Honor, this is where the
01:47 9 percipient fact witness confirmed that the data that's
01:47 10 being shown to the doctor is from the second scan, and
01:47 11 it's data about the surface.
01:47 12 That's the plain and ordinary meaning of
01:47 13 surface data, Your Honor. Plain and ordinary meaning
01:47 14 of the surface data is data about the surface. And
01:47 15 that's where the doctor made a change, and he said: It
01:47 16 can be. Yes.
01:47 17 He also confirmed that that data, the
01:48 18 second scan data, which is surface data of the changed
01:48 19 portion, Your Honor, was registered. According to the
01:48 20 Court's construction, it was registered with the
01:48 21 existing scan in both the Virtuo Vivo and the SIRIOS
01:48 22 devices.
01:48 23 And so he's confirmed on each of these
01:48 24 that this was area on the surface that has changed.
01:48 25 All that's an output to the display.

01:48 1 Your Honor, if you were to grant this
01:48 2 motion, it would be injecting a claim construction
01:48 3 argument that hadn't been made prior to this. It
01:48 4 hasn't been adopted by the Court. And this has been
01:48 5 confirmed under a plain and ordinary meaning by both
01:48 6 the experts and Mr. Marbach, Your Honor.
01:48 7 MR. MUELLER: May I respond briefly?
01:48 8 THE COURT: Are there any of the slides
01:48 9 you'd like to respond to?
01:48 10 MR. MUELLER: Very, very briefly,
01:48 11 Your Honor.
01:48 12 THE COURT: I'm saying is there any
01:48 13 specific slide you'd like to have Mr. Nash put up so
01:48 14 that he --
01:49 15 MR. NASH: He has my slides.
01:49 16 MR. MUELLER: Yes. I have them,
01:49 17 Your Honor.
01:49 18 MR. NASH: Sorry.
01:49 19 MR. MUELLER: May I proceed, Your Honor?
20 THE COURT: Please.
01:49 21 MR. MUELLER: Your Honor, first of all,
01:49 22 even if everything Mr. Nash said were correct, and I
01:49 23 respectfully disagree with my friend Mr. Nash on
01:49 24 several points, there was no rebuttal to the failure of
01:49 25 proof on indirect infringement. That's the only claim

01:49 1 pleaded in the complaint for this patent. There was no
01:49 2 proof of the requirements for indirect infringement
01:49 3 with respect to intent, with respect to predicate acts
01:49 4 in the United States, with respect to knowledge of
01:49 5 infringement, the requisite intent.
01:49 6 So even if all that were right, there
01:49 7 would still be grounds for JMOL insofar as the pleaded
01:49 8 claim is indirect infringement and there's nothing in
01:49 9 the record to remotely support an indirect infringement
01:49 10 claim. There's also nothing in the record to support
01:49 11 damages as we've discussed.
01:49 12 But on the points that Mr. Nash raised,
01:49 13 let me --
01:49 14 THE COURT: Because I'll have Mr. Nash
01:49 15 come back up, if I need to. But your position is no
01:50 16 evidence of intent, no evidence of knowledge of the
01:50 17 patent?
01:50 18 MR. MUELLER: No -- no evidence of a
01:50 19 predicate act in the United States, Your Honor, as
01:50 20 well, a predicate act of direct infringement that's
01:50 21 been encouraged by the defendants.
01:50 22 THE COURT: Okay. Let me hear from
01:50 23 Mr. Nash. And all I need from Mr. Nash is a citation
01:50 24 anywhere in the record where it shows the elements of
01:50 25 intent, knowledge of the patent or evidence of a

01:50 1 predicate act.

01:50 2 MR. NASH: We have record evidence of the

01:50 3 user manuals, Your Honor. We have record evidence that

01:50 4 these devices are used.

01:50 5 But leaving aside that, Your Honor, if I

01:50 6 may, on the direct infringement point, this is a system

01:50 7 claim. We absolutely pled direct infringement in our

01:50 8 complaint, and this is a system claim so its very sale

01:50 9 is an infringing act.

01:50 10 THE COURT: Let's stick with the issue of

01:50 11 indirect infringement.

01:50 12 MR. NASH: Yes, Your Honor.

01:50 13 THE COURT: Are you conceding that

01:50 14 there's not evidence of indirect infringement?

01:51 15 MR. NASH: I'm not conceding that. I

01:51 16 don't happen to have a citation in the transcript for

01:51 17 you handy.

01:51 18 THE COURT: You don't have a citation

01:51 19 that would establish intent, knowledge of the patent,

01:51 20 or evidence of a predicate act in the United States?

01:51 21 MR. NASH: Not at this moment, Your

01:51 22 Honor. But we do have instruction manuals which would

01:51 23 constitute instructing customers to also take direct

01:51 24 infringing steps. But, again, the system itself is an

01:51 25 infringing.

01:51 1 (Conference between counsel.)
01:51 2 MR. NASH: That's true. Dr. Valley
01:51 3 tested this in the United States, and that would have
01:51 4 been a -- constitute indirect infringement, Your Honor.
01:51 5 THE COURT: I'm not going to find that.
01:51 6 MR. HUNG: Your Honor?
01:51 7 THE COURT: Okay.
01:51 8 MR. NASH: We also read into the record
01:51 9 an interrogatory response where they confirmed their
01:51 10 knowledge of the patents.
01:51 11 THE COURT: Okay. Now, getting back to
01:51 12 your evidence, what evidence -- give me a summary so
01:52 13 Mr. Mueller can respond directly to it, a summary of
01:52 14 the evidence you have of direct infringement.
01:52 15 MR. NASH: A summary of the evidence of
01:52 16 direct infringement, Your Honor?
01:52 17 THE COURT: Uh-huh.
01:52 18 MR. NASH: The entirety of Dr. Valley and
01:52 19 Dr. Singh's testimony, along with the percipient
01:52 20 witness, Mr. Marbach, who I just walked through on each
01:52 21 one of the limitations.
01:52 22 THE COURT: Okay.
01:52 23 MR. NASH: And there are -- the accused
01:52 24 sales have been confirmed too. Those sales constitute
01:52 25 direct infringement in the United States.

01:52 1 THE COURT: Okay. Mr. Mueller, do you
01:52 2 want to take up direct infringement?
01:52 3 MR. MUELLER: Yes, Your Honor.
01:52 4 So just in terms of the act of
01:52 5 infringement, to finish the discussion of that, there's
01:52 6 no specific act of direct infringement that's been
01:52 7 introduced.
01:52 8 Dr. Singh testified about how the
01:52 9 software worked. The patent owner must show evidence
01:52 10 of specific instances of direct infringement. That's
01:52 11 the Fujitsu case, 620 F.3d 1321 in the Federal Circuit.
01:52 12 There was no attempt to meet that burden, no evidence
01:53 13 of any use in the United States.
01:53 14 You heard the reference to Dr. Valley's
01:53 15 inspection. An expert inspection for litigation is not
01:53 16 use by the defendants that would satisfy the
01:53 17 requirement of a predicate act.
01:53 18 And on top of all of that, Your Honor, if
01:53 19 we go back to the theory, the theory and the question
01:53 20 of whether the theory advanced by the plaintiff in this
01:53 21 case is legally sufficient, I would respectfully
01:53 22 submit -- Mr. Lee, if you can put up those two slides,
01:53 23 this is PDX-4.6 and 3.11.
01:53 24 If the experts that Align offered for the
01:53 25 jury's consideration were meeting and addressing the

01:53 1 requirement of the surface data of a physically changed
01:53 2 portion of the patient's intraoral cavity, they would
01:53 3 have said so. They would have highlighted that portion
01:53 4 of the claim language in their testimony at some point.
01:53 5 I didn't pick slides that omitted that
01:53 6 when other slides address it. No slide addresses it.
01:54 7 Mr. Nash showed you various portions of
01:54 8 the testimony of Dr. Singh. And if you look carefully
01:54 9 at the page cites for all but the redirect, for all but
01:54 10 the redirect, they came before the following. If you
01:54 11 go to Page 259, all of the transcript cites that
01:54 12 Mr. Nash showed you, other than redirect, came before
01:54 13 the following from Page 259, Line 1.
01:54 14 And this is Ms. Ferrera: And you
01:54 15 highlighted just the first portion of that limitation,
01:54 16 ending with the words "received scan data."
01:54 17 Do you see that?
01:54 18 Answer: Yes.
01:54 19 Question: You didn't highlight the rest
01:54 20 of the claim, right, or the claim limitation?
01:54 21 Answer: Yes.
01:54 22 And in your direct testimony, you didn't
01:54 23 talk about the second portion of the claim limitation,
01:54 24 did you, Dr. Singh?
01:54 25 Answer: I did analyze it.

01:54 1 Question: You didn't give any opinion
01:54 2 about the second portion of the claim limitation during
01:54 3 your direct testimony, did you?
01:55 4 Answer: I did not.
01:55 5 So Dr. Singh, when asked on the stand
01:55 6 whether any of what you were just shown was an opinion
01:55 7 addressing the second portion of a claim limitation, he
01:55 8 said it was not.
01:55 9 THE COURT: And I'm not sure I completely
01:55 10 followed it. But with respect to one of the witnesses
01:55 11 who was not one skilled in the art, this was part and
01:55 12 parcel of that, right?
01:55 13 MR. MUELLER: Correct. Dr. Valley did
01:55 14 not address this either and lacked the expertise to do
01:55 15 so. She's an orthodontist, not a computer scientist.
01:55 16 So neither one addressed it, neither
01:55 17 Dr. Valley nor Dr. Singh.
01:55 18 And the last thing I'll say, Your Honor,
01:55 19 is the attempt to turn the fact testimony today into a
01:55 20 cure for that expert failure of proof rests on a
01:55 21 mistaken interpretation of the claims. And it doesn't
01:55 22 require a Markman hearing to understand that.
01:55 23 The claim limitation speaks of scan data
01:55 24 received, received. Scan data received, and that scan
01:55 25 data has to include surface data. The claim itself

01:56 1 distinguishes between the scan data and the surface
01:56 2 data included within that scan data. It has to be
01:56 3 received.
01:56 4 And so the device that would meet these
01:56 5 claims would need to receive scan data including
01:56 6 surface data, not transform point cloud data into
01:56 7 surface representations but to receive scan data that
01:56 8 includes surface data as a subset.
01:56 9 Here, there's no expert opinion from
01:56 10 anyone that the devices at issue receive scan data that
01:56 11 includes the surface data. And the only testimony is
01:56 12 from a fact witness who said it doesn't do that.
01:56 13 Instead, it receives point cloud data, not scan data.
01:56 14 So we have an expert -- a fact witness
01:56 15 saying it doesn't happen and two experts failing to say
01:56 16 it does happen.
01:56 17 And on that record, there can be no
01:56 18 reasonable juror who could find infringement. And
01:56 19 that's without even getting to the failure to allege
01:56 20 the predicates for indirect infringement, the only
01:56 21 claim pleaded in the complaint, or the failure to
01:57 22 present a damages opinion.
01:57 23 This is not a patent that should go to
01:57 24 the jury. We respectfully request JMOL.
01:57 25 THE COURT: Mr. Nash, anything else?

01:57 1 MR. NASH: Two final points, Your Honor.
01:57 2 There were direct infringement based on
01:57 3 sales. This is an accused system. The system
01:57 4 comprises a handheld scanner plus computer readable
01:57 5 medium with the software. Those systems were sold.
01:57 6 That was confirmed and factual testimony came in to
01:57 7 that point.
01:57 8 With respect to what counsel just
01:57 9 mentioned, he's stepping beyond a plain and ordinary
01:57 10 meaning, because literally the words that he just
01:57 11 recited was "scan data including surface data." That
01:57 12 means it can be more than surface data. We're not
01:57 13 saying they're necessarily coextensive. It has to
01:57 14 include surface data. That's what both of our experts
01:57 15 testified to.
01:57 16 And Dr. Valley was there to confirm it
01:57 17 was a surface of a tooth, Your Honor. And Dr. Singh
01:57 18 was there to testify as to what happens with that data
01:58 19 once it's being processed and added to the
01:58 20 representation that's on the screen, Your Honor.
01:58 21 It's blackletter law that scan data
01:58 22 including surface data is not saying these are two
01:58 23 different things. It's saying that the surface data is
01:58 24 included in the scan data.
01:58 25 And that was confirmed by both of our

01:58 1 experts and by Mr. Marbach, who was asked repeatedly if
01:58 2 the data we were seeing represented on the screen
01:58 3 included data that came from the surface, Your Honor.
01:58 4 Plain and ordinary meaning, surface data.
01:58 5 THE COURT: Anything else, Mr. Mueller?
01:58 6 MR. MUELLER: Again, the only thing I'd
01:58 7 add, there's still no evidence of indirect
01:58 8 infringement, which is the only claim pleaded in the
01:58 9 complaint. So we think this fails at every level.
01:58 10 THE COURT: Thank you.
01:59 11 Okay. Thank you for the arguments. The
01:59 12 Court is going to grant the motion, Rule 50 motion.
01:59 13 What does that do with respect to who the
01:59 14 next witness is?
01:59 15 MR. MUELLER: Yes, Your Honor. We're
01:59 16 going to call Ms. Laura Sterling as our next witness,
01:59 17 and we should be able to finish her today before your
01:59 18 conference, Your Honor.
01:59 19 THE COURT: Oh, great.
01:59 20 MR. MUELLER: Thank you, Your Honor.
01:59 21 THE COURT: Okay. Perfect. And if -- I
01:59 22 don't want you all pushing -- the trial's important and
01:59 23 I have to do the other hearing. Let's get this person
01:59 24 done however you all need to, and they can wait on the
01:59 25 pretrial conference --

02:00 1 MR. MUELLER: We appreciate it,
02:00 2 Your Honor.
02:00 3 THE COURT: -- until we get this witness
02:00 4 done. I don't want anyone feeling like they've got to
02:00 5 meet a 3:00 p.m. deadline. So.
02:00 6 MR. MUELLER: We appreciate it. Thank
02:00 7 you, Your Honor.
02:00 8 THE COURT: Sure.
02:00 9 THE BAILIFF: All rise.
02:03 10 (Recess taken.)
02:03 11 THE BAILIFF: All rise.
02:03 12 THE COURT: Please remain standing for
02:03 13 the jury.
02:03 14 (Jury entered the courtroom.)
02:04 15 THE COURT: You may be seated, counsel.
02:04 16 MR. MUELLER: Thank you, Your Honor.
02:04 17 May we call our next witness?
02:04 18 THE COURT: Please.
02:04 19 MR. MUELLER: We will call Ms. Laura
02:04 20 Sterling, and Mr. Underwood will conduct the
02:04 21 examination, Your Honor.
02:04 22 THE COURT: Lovely.
02:04 23 (The witness was sworn.)
02:04 24 DIRECT EXAMINATION
02:04 25 BY MR. UNDERWOOD:

02:04 1 Q. Good afternoon, Ms. Sterling. How are you
02:05 2 doing?
02:05 3 A. I'm okay.
02:05 4 Q. Can you please introduce yourself to the
02:05 5 ladies and gentlemen of the jury?
02:05 6 A. Yes. My name is Laura Sterling. And I am the
02:05 7 vice president and global head of marketing and growth
02:05 8 enablement for ClearCorrect at Straumann Group.
02:05 9 Q. And where do you live, Ms. Sterling?
02:05 10 A. I live in Basel, Switzerland.
02:05 11 Q. Do you have a family?
02:05 12 A. I do. I have a husband, Eric, and two sons,
02:05 13 Austin, who's 12, and Jack, who's 9.
02:05 14 Q. Does your family live with you in Basel?
02:05 15 A. They do.
02:05 16 Q. And how long have y'all lived there?
02:05 17 A. We moved in December 2024.
02:05 18 Q. What took y'all to Basel?
02:05 19 A. So in 2024, I received a promotion and an
02:05 20 incredible opportunity to relocate to Basel,
02:05 21 Switzerland, which is the headquarters of Straumann
02:05 22 Group. And it was a great opportunity for me
02:05 23 professionally, but also to have the kids be able to
02:05 24 experience a different country for a few years, it was
02:05 25 an opportunity I couldn't refuse.

02:05 1 Q. Where'd you grow up?
02:06 2 A. I grew up in Rochester, New York.
02:06 3 Q. Did you attend college?
02:06 4 A. Yes.
5 Q. Where at?
02:06 6 A. I attended Indiana University Kelley School of
02:06 7 Business in Indiana.
02:06 8 Q. Did you graduate?
02:06 9 A. I did, with a bachelor's of science in
10 business with a major in marketing.
02:06 11 Q. What'd you do after graduating?
02:06 12 A. I -- sorry -- started my career. I moved to
02:06 13 Dallas, Texas.
02:06 14 Q. And what'd you do in Dallas?
02:06 15 A. I worked for a company called St. Jude
02:06 16 Medical, and I worked as a marketing specialist for
02:06 17 patient programs.
02:06 18 Q. How'd you become interested in marketing?
02:06 19 A. Yeah. So when I was originally looking for a
02:06 20 university, I talked to my mom, and she suggested
02:06 21 marketing as a career path.
02:06 22 So I studied that in college. And between my
02:06 23 junior and senior year of college, I had an opportunity
02:06 24 to work in marketing at St. Jude Medical. And that's
02:06 25 when I found that you can apply marketing in the

02:06 1 medical device space, and I just fell in love with it.
02:06 2 Q. Why'd you fall in love with it?
02:07 3 A. I mean, for me, you know, when you think about
02:07 4 marketing, you think about consumer goods, hair care
02:07 5 products, and I was able to apply what I learned to
02:07 6 helping people's lives. It was just incredible.
02:07 7 Q. And have you done any other coursework related
02:07 8 to marketing after graduating from Indiana University?
02:07 9 A. Yes. I've taken some advanced courses at
02:07 10 Kellogg and as well as an international school in
02:07 11 Switzerland.
02:07 12 Q. What's Kellogg?
02:07 13 A. It's a university.
02:07 14 Q. And how long did you work at St. Jude?
02:07 15 A. I worked at St. Jude Medical for about nine
02:07 16 years.
02:07 17 Q. And were you always in the Dallas office of
02:07 18 St. Jude?
02:07 19 A. No. I relocated from Dallas to Austin, Texas,
02:07 20 in around 2013.
02:07 21 Q. Scoot a little back from the microphone.
02:07 22 All right. Thank you very much.
02:07 23 And what did you do after leaving St. Jude?
02:08 24 A. So St. Jude Medical was actually acquired by a
02:08 25 company called Abbott. So I remained working in the

02:08 1 medical devices space, remained working for the company
02:08 2 for another three to four years.
02:08 3 Q. And then what?
02:08 4 A. So in 2021, I left Abbott and joined Straumann
02:08 5 Group.
02:08 6 Q. Why did you join Straumann Group?
02:08 7 A. So I had been in the same industry for 13,
02:08 8 14 years, neuromodulation, and I was looking for
02:08 9 something different. I really wanted to get to
02:08 10 something a bit more entrepreneurial where I could have
02:08 11 a direct impact with the work that I did.
02:08 12 I was also looking for a company that really
02:08 13 valued corporate culture, and I found both of those in
02:08 14 Straumann.
02:08 15 Q. Where were you based when you first joined
02:08 16 Straumann?
02:08 17 A. Round Rock, Texas.
02:08 18 Q. And what position did you hold when you first
02:08 19 joined Straumann?
02:08 20 A. I was the head of global marketing and
02:09 21 education for ClearCorrect.
02:09 22 Q. And what products were you responsible in that
02:09 23 role?
02:09 24 A. The clear aligner products.
02:09 25 Q. What were your day-to-day responsibilities

02:09 1 with respect to those products?
02:09 2 A. So ultimately, my job is -- was, you know,
02:09 3 there's personnel management, but ultimately I was
02:09 4 responsible for upstream and downstream product
02:09 5 marketing, so working on new product development with
02:09 6 our software engineers and also talking to customers,
02:09 7 understanding their current needs, working with the
02:09 8 sales representatives around the world.
02:09 9 Q. And sitting here today, what products are you
02:09 10 responsible for?
02:09 11 A. I'm still responsible for clear aligner
02:09 12 products, but I recently was given the opportunity to
02:09 13 also be marketing SIRIOS, which is our intraoral
02:09 14 scanner, specifically to the clear aligner customers.
02:09 15 Q. And what do you do with respect to those
02:09 16 products?
02:09 17 A. I'm responsible for marketing, which is in
02:10 18 general raising awareness of our brand, our products.
02:10 19 I still talk to customers on a weekly basis. We do
02:10 20 host events, a variety of things.
02:10 21 Q. How many people do you have reporting to you?
02:10 22 A. So I have 16 direct reports and about 30 to 35
02:10 23 in my department.
02:10 24 Q. And as the VP of global marketing, what's your
02:10 25 involvement with marketing of clear aligners here in

02:10 1 the United States?
02:10 2 A. Yeah. So part of my team, I am responsible
02:10 3 for local country marketing as well in addition to
02:10 4 global marketing. So I have a team of four that is
02:10 5 specifically dedicated to the United States.
02:10 6 Q. Do you have an opportunity in your role to
02:10 7 talk with ClearCorrect's customers?
02:10 8 A. Yes. On a weekly basis.
02:10 9 Q. Now, as the VP of global marketing, are you
02:10 10 personally familiar with the market for ClearCorrect's
02:10 11 clear aligners?
02:11 12 A. Yes. Absolutely. As part of being
02:11 13 responsible for marketing, it's my responsibility to
02:11 14 understand the market. We conduct third-party market
02:11 15 research. We look at independent analysts reports. We
02:11 16 talk to customers in a variety of ways to try to
02:11 17 understand the current landscape.
02:11 18 Q. As a factual matter, when you think about the
02:11 19 market in which ClearCorrect competes, what products
02:11 20 does that include?
02:11 21 A. Clear aligner products.
02:11 22 Q. Did we get you a binder? Is that a binder for
02:11 23 you?
02:11 24 A. Yes.
02:11 25 Q. All right. Can you turn to Tab 2 in that

02:11 1 binder, please? And let me know when you're there.
02:11 2 A. Yes. I'm here.
02:11 3 Q. That is PTX-75. If you need to take a second
02:11 4 to look at it, please do so. But do you recognize this
02:11 5 document?
02:11 6 A. I do.
02:11 7 Q. What is that document?
02:11 8 A. So this is the launch binder for ClearQuartz,
02:11 9 specifically our North America go-to-market strategy.
02:12 10 Q. And what's the date?
02:12 11 A. August 2020.
02:12 12 MR. UNDERWOOD: Your Honor, we offer
02:12 13 PTX-75.
02:12 14 MR. DURST: No objection, Your Honor.
02:12 15 THE COURT: Admitted.
02:12 16 BY MR. UNDERWOOD:
02:12 17 Q. All right. And is this document on the screen
02:12 18 the one you're looking at in your binder?
02:12 19 A. Yes. It is.
02:12 20 Q. All right. Let's turn to Page 5, please.
02:12 21 What's the title of this slide?
02:12 22 A. It's Market Opportunity.
02:12 23 Q. And what market is ClearCorrect describing
02:12 24 here in this document?
02:12 25 A. The clear aligner market.

02:12 1 Q. And now let's go to the next page, Page 6,
02:12 2 please.
02:12 3 What's the title of this slide?
02:12 4 A. Market Trend: Clear Aligner Global Market
02:12 5 Share (sic).
02:12 6 Q. Clear Aligner Global Market Share?
02:12 7 A. Yes.
02:12 8 Q. And let's go to the right-hand side of the
02:12 9 page.
02:12 10 Do you see those bullet points there under the
02:12 11 title Market Trend?
02:12 12 A. Yes. I do.
02:12 13 Q. Can you read the first bullet point, please?
02:12 14 A. Clear aligner global market size, 1.87
02:13 15 billion, 2018.
02:13 16 Q. Now, if you go back to the left-hand side of
17 this slide under North America, what portion of that
02:13 18 1.8 billion was from North America in 2018?
02:13 19 A. 940 million.
02:13 20 Q. All right. All right. So now let's go
02:13 21 back --
02:13 22 MR. UNDERWOOD: I apologize, Mr. Lee.
02:13 23 I'm making you work.
24 BY MR. UNDERWOOD:
02:13 25 Q. If we can go back to those bullet points on

02:13 1 the right-hand side and go down to the fourth bullet
2 point.
02:13 3 Do you see where I am?
02:13 4 A. Yes.
02:13 5 Q. All right. Can you read that, please?
02:13 6 A. NAM, which is North America Market, is the
02:13 7 largest market and is expected to remain with
02:13 8 50 percent of the business.
02:13 9 Q. Which market is the largest market?
02:13 10 A. North America.
02:13 11 Q. That includes the United States of course?
02:13 12 A. Absolutely.
02:13 13 Q. Let's go to --
02:13 14 THE COURT: Counsel, could I have y'all
02:13 15 up here for just one second?
02:13 16 MR. UNDERWOOD: Absolutely.
02:13 17 THE COURT: I just need you and
02:13 18 Mr. Durst.
02:14 19 (Off-the-record bench conference.)
02:14 20 MR. UNDERWOOD: All right. Can we go to
02:14 21 Slide 7, please?
22 BY MR. UNDERWOOD:
02:14 23 Q. All right. And what's the title of this
02:14 24 slide, Ms. Sterling?
02:14 25 A. Market Trend: Market Size and Market Share

02:14 1 Percent.
02:14 2 Q. MS percent, that stands for market share
02:14 3 percent?
02:14 4 A. Correct.
02:14 5 Q. All right. And if we go down to the bottom
02:14 6 left-hand corner, do you see it says "market
02:14 7 opportunity"?
02:14 8 A. Yes.
02:14 9 Q. Can you read those two bullet points to the
02:14 10 jury, please?
02:14 11 A. Adult population represents about 75 percent
02:14 12 of total clear aligner market. Adolescents are
02:14 13 expected to grow at a faster rate; however, the adult
02:14 14 segment will remain as the largest one.
02:15 15 Q. All right. Now, I want to ask you a question
02:15 16 about that first bullet point, okay?
02:15 17 Do you see where it says "clear aligner
02:15 18 market"?
02:15 19 A. Yes.
02:15 20 Q. Is that term consistent with how ClearCorrect
02:15 21 views the market for its products?
02:15 22 A. Yes.
02:15 23 Q. And if you go to the second bullet point where
02:15 24 it discusses the populations, is that statement
02:15 25 consistent with how ClearCorrect views the populations

02:15 1 in the clear aligner market?
02:15 2 A. Yes.
02:15 3 MR. UNDERWOOD: Let's go to Page 14,
02:15 4 please, Mr. Lee.
02:15 5 BY MR. UNDERWOOD:
02:15 6 Q. All right. What's the title of this slide?
02:15 7 A. Customer Target Group.
02:15 8 Q. And do you see where it says "patients"?
02:15 9 A. Yes.
02:15 10 Q. What's it say under the patients category?
02:15 11 A. Adolescents and adults with mild-to-moderate
02:15 12 cases of malocclusion that don't want a fixed and
02:16 13 painful brace experience but instead are looking for a
02:16 14 more convenient and more comfortable treatment.
02:16 15 Q. Is this drawing a distinction between wire and
02:16 16 bracket braces on one hand and clear aligners on the
02:16 17 other?
02:16 18 A. Yes.
02:16 19 Q. And is this statement consistent with your
02:16 20 experience and your understanding of these products?
02:16 21 A. Yes.
02:16 22 Q. Are braces and clear aligners different?
02:16 23 A. Yes.
02:16 24 Q. How so?
02:16 25 A. So braces are fixed appliances that are glued

02:16 1 to a patient's teeth; whereas, clear aligners are
02:16 2 removable which allow for better oral hygiene.
02:16 3 Q. Does ClearCorrect compete with wire and
02:16 4 bracket braces?
02:16 5 A. No.
02:16 6 Q. What does ClearCorrect compete with?
02:16 7 A. Other aligner brands.
02:16 8 Q. Such as?
02:16 9 A. Invisalign, Spark, Dentsply, SureSmile,
02:16 10 Angelalign, and there are a variety of other brands.
02:17 11 Q. And who does ClearCorrect consider to be its
02:17 12 primary competitor in the clear aligner market?
02:17 13 A. Invisalign.
02:17 14 Q. What's ClearCorrect's understanding regarding
02:17 15 Align's market share in the clear aligner market?
02:17 16 A. No. We've looked at a variety of sources, but
02:17 17 I've seen 80 to 90 percent.
02:17 18 MR. UNDERWOOD: Can we go to Page 7 of
02:17 19 this deck, please?
02:17 20 BY MR. UNDERWOOD:
02:17 21 Q. All right. And do you see on the right-hand
02:17 22 side there's that big blue circle?
02:17 23 A. Yes.
02:17 24 Q. What is this chart showing?
02:17 25 A. This is showing the clear aligner market share

02:17 1 by company.
02:17 2 Q. And who has 90.4 percent of the clear aligner
02:17 3 market share?
02:17 4 A. Align Technology or Invisalign.
02:17 5 Q. And what percentage does Straumann have?
02:17 6 A. 3.6 percent.
02:17 7 MR. UNDERWOOD: You can take that down,
02:17 8 Mr. Lee.
02:17 9 BY MR. UNDERWOOD:
02:17 10 Q. Can you go to Tab 3 in your binder, please?
02:17 11 A. Yes.
02:17 12 Q. And let me know when you're there.
02:18 13 A. I'm there.
02:18 14 Q. Oh, you're there. All right.
02:18 15 Do you see a document labeled DTX-2236?
02:18 16 A. Yes.
02:18 17 Q. Do you recognize this document?
02:18 18 A. I do.
02:18 19 MR. UNDERWOOD: Your Honor, we offer
02:18 20 DTX-2236.
02:18 21 MR. DURST: No objection, Your Honor.
02:18 22 THE COURT: Admitted.
02:18 23 BY MR. UNDERWOOD:
02:18 24 Q. What's the title of this document?
02:18 25 A. It's the ClearCorrect 2020 North America

1 Strategy.

02:18 2 MR. UNDERWOOD: Can we turn to Page 2,

02:18 3 Mr. Lee?

02:18 4 BY MR. UNDERWOOD:

02:18 5 Q. All right. What's the title of this slide?

02:18 6 A. North America Market Overview Current

02:18 7 Situation.

02:18 8 Q. And when this document uses the term "market

02:18 9 overview," what market is it talking about?

02:18 10 A. The clear aligner market.

02:18 11 Q. If you go down, do you see the bullet point

02:18 12 beginning 1.3 billion?

02:18 13 A. Yes.

02:18 14 Q. Can you read that, please?

02:18 15 A. 1.3 billion of revenue in the North America

02:18 16 market with a leader controlling 93 percent of market

02:18 17 share, ClearCorrect less than 5 percent market share.

02:19 18 Q. And who's the leader controlling 93 percent of

02:19 19 that market share?

02:19 20 A. Invisalign.

02:19 21 Q. And when it says "ClearCorrect less than

02:19 22 5 percent market share," what market is it talking

02:19 23 about?

02:19 24 A. The clear aligner market.

02:19 25 MR. UNDERWOOD: Let's go to Page 5,

02:19 1 please, Mr. Lee.
02:19 2 BY MR. UNDERWOOD:
02:19 3 Q. All right. Do you see the pie chart there?
02:19 4 A. Yes.
02:19 5 Q. And I should apologize, Ms. Sterling. If you
02:19 6 need to take a second to look at the document, please
02:19 7 do so.
02:19 8 A. Okay.
02:19 9 Q. What companies are shown on this pie chart?
02:19 10 A. Align Technology, Straumann Group, 3M,
02:19 11 Danaher, Henry Schein, and Dentsply Sirona.
02:19 12 Q. And again, which company has the overwhelming
02:19 13 share of the market?
02:19 14 A. Align Technology.
02:19 15 Q. And is that consistent with how ClearCorrect
02:19 16 views the competitive landscape?
02:19 17 A. Yes.
02:19 18 MR. UNDERWOOD: We can pull that down,
02:19 19 Mr. Lee.
02:19 20 BY MR. UNDERWOOD:
02:19 21 Q. Who does ClearCorrect actually sell its
02:20 22 products to?
02:20 23 A. We sell our products to doctors. So
02:20 24 specifically orthodontists, general practitioners,
02:20 25 providers in dental service organizations, or DSOs, or

02:20 1 orthodontic service organizations, OSOs.
02:20 2 Q. Now, of those different categories of doctors,
02:20 3 which one uses clear aligners the most, in your
02:20 4 experience?
02:20 5 A. I mean, there are some high-volume general
02:20 6 practitioners, but predominantly it's orthodontists.
02:20 7 Q. And who's the person that plays the most
02:20 8 significant role in determining what brand of clear
02:20 9 aligner a patient gets?
02:20 10 A. The doctor.
02:20 11 MR. DURST: Objection, Your Honor. That
02:20 12 is --
02:20 13 THE COURT: I'm sorry?
02:20 14 MR. DURST: Objection, Your Honor. That
02:20 15 is outside the zone of her knowledge.
02:20 16 THE COURT: If you want to lay a
02:20 17 foundation for her to answer, you can.
02:20 18 BY MR. UNDERWOOD:
02:20 19 Q. Ms. Sterling, earlier you talked about some of
02:20 20 the market research you do. What does that market
02:20 21 research involve?
02:20 22 A. We research -- or we speak with doctors as
02:20 23 well as patients to understand how they select
02:21 24 products, what their current experience with them is,
02:21 25 and a variety of other things.

02:21 1 Q. And how often do you do that?
02:21 2 A. We do market researches annually.
02:21 3 Q. And based on that experience doing market
02:21 4 research and talking to folks in the field, who is the
02:21 5 person who plays the most significant role in
02:21 6 determining which brand of clear aligners a patient
02:21 7 gets?
02:21 8 MR. DURST: Objection, Your Honor. We
02:21 9 laid a foundation for hearsay. That -- he plainly
02:21 10 said --
02:21 11 THE COURT: I don't think he asked what
02:21 12 anyone said.
02:21 13 MR. UNDERWOOD: I didn't.
02:21 14 THE COURT: I think the question was what
02:21 15 person plays the role.
02:21 16 MR. DURST: Based on?
02:21 17 THE COURT: Well, I understand they have
02:21 18 to get it from somewhere, but she's not -- it's not
02:21 19 hearsay. I mean, he's not asking her to -- at any
02:21 20 rate, overruled.
21 BY MR. UNDERWOOD:
02:21 22 Q. Do I need to repeat the question,
02:21 23 Ms. Sterling?
02:21 24 A. No. The doctor plays the role.
02:21 25 Q. And how important is the doctor's choice in

02:21 1 terms of competition between clear aligner companies?
02:21 2 A. I mean, it's extremely important. I mean, the
02:21 3 doctor is the one that selects the brand and is
02:22 4 ultimately the one that prescribes the treatment.
02:22 5 Q. What's the relationship between doctor choice
02:22 6 and the concept that the jury's heard about of a closed
02:22 7 system?
02:22 8 A. Yeah. I mean, if the doctor has a closed
02:22 9 system and doesn't have the options to choose other
02:22 10 systems, then they're locked in to choosing the brand
02:22 11 that they have the closed system of.
02:22 12 Q. Does ClearCorrect use a closed or an open
02:22 13 system?
02:22 14 A. ClearCorrect has an open system.
02:22 15 Q. What about Straumann? Does Straumann use a
02:22 16 closed or an open system?
02:22 17 A. No. Straumann has an open system.
02:22 18 Q. Can I ask you some questions about the
02:22 19 ClearCorrect clear aligners and the Straumann scanners?
02:22 20 A. Yes.
02:22 21 Q. If a doctor wants to prescribe a ClearCorrect
02:22 22 clear aligner, does ClearCorrect or does Straumann
02:22 23 require them to purchase a Straumann scanner?
02:22 24 A. No.
02:22 25 Q. Can a Straumann scanner be used to order clear

02:23 1 aligners from any clear aligner company?
02:23 2 A. Yes.
02:23 3 Q. And is that a simple or a difficult process,
02:23 4 in your experience?
02:23 5 A. My experience, it's a simple process.
02:23 6 Q. How does ClearCorrect try to reach doctors for
02:23 7 marketing and sales purposes?
02:23 8 A. Yeah. So we have a direct sales force, so
02:23 9 reps that are in the field. We also participate in
02:23 10 scientific congresses and events. We do education. We
02:23 11 also do marketing efforts, so digital marketing, social
02:23 12 media.
02:23 13 Q. Now, of the categories of doctors that you
02:23 14 identified earlier who are involved with clear
02:23 15 aligners, which of those categories of doctors does
02:23 16 ClearCorrect focus its marketing efforts on?
02:23 17 A. Yeah. So overall, we try to focus our efforts
02:23 18 on all customers. But what we found, especially in the
02:23 19 United States, that we are locked out of the
02:23 20 orthodontist customers, and so we have chosen to divert
02:23 21 our resources to the general practitioner.
02:24 22 Q. And approximately how much money does
02:24 23 ClearCorrect spend on marketing for its clear aligners
02:24 24 in the United States?
02:24 25 A. We spend $2 million.

02:24 1 Q. To your knowledge, how does that compare to
02:24 2 Align?
02:24 3 A. While sitting in the opening statements in the
02:24 4 room, I saw 1.4 billion.
02:24 5 Q. So I'm curious. Why is ClearCorrect's
02:24 6 marketing budget so much lower than Align's?
02:24 7 A. I mean, ultimately, the marketing budget is
02:24 8 set as a percent of sales. So whatever we bring in is
02:24 9 what we can spend. And so if we're not making the
02:24 10 sales, then our marketing budget is going to be lower.
02:24 11 Q. Based on the ClearCorrect research and
02:24 12 marketing efforts you described moments ago, what
02:24 13 characteristics do doctors consider when selecting a
02:24 14 clear aligner brand?
02:24 15 A. I mean, ultimately doctors select a variety of
02:25 16 characteristics.
02:25 17 Q. Such as?
02:25 18 A. So the product plays a role in it, but also
02:25 19 what's really important, what I've seen in my
02:25 20 experience and then also in the market research, is
02:25 21 service and support is really important, so the support
02:25 22 that they're getting, the partnership that they're
02:25 23 getting from the company. In addition, it's important
02:25 24 for them to have options.
02:25 25 Q. In your experience, what are the physical

02:25 1 differences between the ClearCorrect aligners and the
02:25 2 Align aligners?
02:25 3 A. Yeah. So there are a couple differences, but
02:25 4 the two main ones are the material. So you've heard a
02:25 5 lot about that. The ClearCorrect material is a
02:25 6 hard-soft-hard material. It's a three-layer material.
02:25 7 But we also have a high and flat trim line.
02:25 8 So it goes straight across the gums.
02:25 9 With Invisalign, they have a soft-hard-soft
02:25 10 material, and they have a scalloped trim line. So it
02:25 11 follows the shape of the teeth.
02:26 12 Q. And what impact do those differences you've
02:26 13 just described have for the patient experience?
02:26 14 A. I mean, one of the main reasons is -- the main
02:26 15 differences is stain resistance. So because we have a
02:26 16 hard outer layer on our aligner, it stains less, which
02:26 17 is important, as you've heard, because the whole point
02:26 18 of a clear aligner is that it's aesthetic.
02:26 19 In addition, it tears -- the ClearCorrect
02:26 20 aligner tears less.
02:26 21 Q. Now, besides the physical differences in the
02:26 22 aligners you just described, are there any differences
02:26 23 between ClearCorrect's approach to business and
02:26 24 Align's?
02:26 25 A. I mean, we fundamentally take a different

02:26 1 approach to the way that we conduct business. I mean,
02:26 2 for us, it's very much about partnership and really
02:26 3 being alongside our customers, understanding their
02:26 4 clinical needs, and working with them to support them.
02:26 5 Q. And what has been the response in the market
02:26 6 to ClearCorrect's approach?
02:26 7 A. Yeah. I mean, for the doctors who use us, we
02:27 8 hear a lot of amazing things. They really appreciate
02:27 9 that. And it's definitely generated a lot of interest
02:27 10 in the customers that are locked out.
02:27 11 Q. You mentioned locked out.
02:27 12 Has ClearCorrect encountered any obstacles in
02:27 13 the marketplace?
02:27 14 A. Yeah. I mean, we would expect any obstacles,
02:27 15 right, with competition, but especially in the United
02:27 16 States, we're experiencing something a bit different.
02:27 17 Specifically with Invisalign, they are -- they
02:27 18 require their customers to purchase an iTero scanner in
02:27 19 order to do business with Invisalign.
02:27 20 In addition, it's really difficult to get the
02:27 21 files off of that scanner to use with another aligner
02:27 22 company.
02:27 23 In -- on top of that, they also require
02:27 24 customers to purchase -- or to do a certain number of
02:27 25 cases in order to receive a certain price, and if they

02:27 1 don't hit that price, or they don't hit that volume,
02:27 2 then they get penalized and have a higher cost in the
02:28 3 following six months.
02:28 4 Q. And why are these policies a problem for
02:28 5 ClearCorrect?
02:28 6 A. I mean, ultimately, what it does is locks us
02:28 7 out of that account, because they don't want to pay a
02:28 8 higher price, and time is money.
02:28 9 So if it's difficult to get the files off of
02:28 10 the scanner, then they're going to continue to do with
02:28 11 what they have in their practice. The --
02:28 12 Q. Now -- oh. I'm sorry. Go ahead.
02:28 13 A. Sorry.
02:28 14 And the scanner itself is a really expensive
02:28 15 piece of capital equipment. I mean, it's thousands of
02:28 16 dollars. So they have -- they use what they've already
02:28 17 purchased.
02:28 18 Q. Now, other than scanners themselves, is there
02:28 19 any other mechanism for a doctor to place an order for
02:28 20 a clear aligner?
02:28 21 A. I mean, so industry standard is using a
02:28 22 scanner.
02:28 23 Q. Is there any other option, even if it's not
02:28 24 the industry standard?
02:28 25 A. Yeah. So I think we've heard a little bit

02:28 1 about this over the past couple of days. You know,
02:29 2 there's an older method which is the PVS impression,
02:29 3 which is where you put the putty in the tray, you hold
02:29 4 it in the patient's mouth for a few minutes, but the
02:29 5 quality of that and the patient experience, really the
02:29 6 market and the industry has gone to digital
02:29 7 impressions.
02:29 8 Q. How commonly is PVS used today, in your
02:29 9 experience?
02:29 10 A. Not very common.
02:29 11 Q. Let's go to -- can you open Tab 4, please?
02:29 12 And let me know when you get there.
02:29 13 A. Yes.
02:29 14 Q. Do you recognize the document you're looking
02:29 15 at?
02:29 16 A. I do.
02:29 17 Q. What is it?
02:29 18 A. It is a spreadsheet of submissions to
02:29 19 ClearCorrect from 2017 to Q2 of 2024 and the method it
02:29 20 was submitted to ClearCorrect.
02:29 21 MR. UNDERWOOD: Your Honor, we offer
02:29 22 JTX-60.
02:29 23 MR. DURST: No objection, Your Honor.
02:29 24 THE COURT: Admitted.
02:29 25 BY MR. UNDERWOOD:

02:30 1 Q. All right. Can you describe again at a high
02:30 2 level, Ms. Sterling, what this is showing now that the
02:30 3 jury can see the document?
02:30 4 A. Yeah. So these are submissions of cases. It
02:30 5 can be a unique case or a case that may already be in
02:30 6 progress, from 2017 to 2024 Q2, specifically in the
02:30 7 United States.
02:30 8 And what -- on the left-hand side, what you
02:30 9 see is the method of which these were submitted to
02:30 10 ClearCorrect.
02:30 11 Q. And what does this document show about the
02:30 12 number of cases that ClearCorrect receives from PVS in
02:30 13 2017 versus 2024?
02:30 14 A. So as you can see, in 2017 we had 68,000 cases
02:30 15 that were submitted using PVS, but by -- in Q2 of 2024,
02:30 16 we only had 8,800.
02:30 17 Q. And what about iTero? Is that shown on this
02:31 18 chart?
02:31 19 A. It is.
02:31 20 Q. What does this show about iTero over this time
02:31 21 period?
02:31 22 A. When you look at the total number of cases
02:31 23 that are submitted, so let's just use 2023 as an
02:31 24 example, we had 169,000 cases that were submitted and
02:31 25 only 9,297 were from an iTero.

02:31 1 Q. Now, in your experience, if a doctor has an
02:31 2 iTero scanner, is it easy to use that scanner to send
02:31 3 cases to a competitor like ClearCorrect?
02:31 4 A. From what I -- what I experience is that it's
02:31 5 difficult.
02:31 6 Q. How so?
02:31 7 A. It requires multiple steps, right? It's not a
02:31 8 seamless integration.
02:31 9 Q. Now, based upon this data, what is your best
02:31 10 estimate of how many ClearCorrect submissions come from
02:31 11 iTero scanners?
02:31 12 A. Very few.
02:32 13 Q. About 3 to 5 percent?
02:32 14 A. Yes.
02:32 15 MR. UNDERWOOD: Can we get PDX-1.76,
02:32 16 Mr. Lee?
02:32 17 BY MR. UNDERWOOD:
02:32 18 Q. Now, you have been sitting at counsel table
02:32 19 this whole trial, right?
02:32 20 A. Uh-huh. Yes.
02:32 21 Q. And did you see the parties' opening
02:32 22 statements?
02:32 23 A. Yes.
02:32 24 Q. Do you recall the plaintiffs using this slide?
02:32 25 A. Yes. I do.

02:32 1 Q. And they were suggesting that one of every
02:32 2 five ClearCorrect orders comes from an iTero, right?
02:32 3 A. Yes.
02:32 4 Q. Is this correct?
02:32 5 A. It's not what we see.
02:32 6 Q. Again, based on data that we just looked at,
02:32 7 what is the correct number?
02:32 8 A. 3 to 5 percent.
02:32 9 MR. UNDERWOOD: You can pull that down,
02:32 10 Mr. Lee.
02:32 11 BY MR. UNDERWOOD:
02:32 12 Q. What, if anything, has ClearCorrect done to
02:32 13 attempt to compete more successfully against Align in
02:32 14 the United States?
02:32 15 A. We've done a lot. First, it's important for
02:32 16 us to continually improve, continually innovate. So
02:33 17 that's one of the things we do is constantly evolve and
18 advance our product.
02:33 19 We've invested in marketing. We've invested
02:33 20 in education. We attend congresses. We've even
02:33 21 changed personnel. We've tried a lot.
02:33 22 Q. Has ClearCorrect attempted to increase its
02:33 23 sales or its marketing efforts?
02:33 24 A. I mean, as I said before, at the end of the
02:33 25 day, the marketing budget is a percent of sales. So we

02:33 1 haven't drastically increased our budget.
02:33 2 Q. Has ClearCorrect done anything to make its
02:33 3 products more attractive to customers?
02:33 4 A. Absolutely. It's important for us to
02:33 5 continually improve and innovate.
02:33 6 Q. I want to ask you some questions about the
02:33 7 market in the United States versus the rest of the
02:33 8 world. Okay?
02:33 9 A. Yes.
02:33 10 Q. All right. Since the time ClearCorrect became
02:33 11 a part of Straumann, how would you describe
02:33 12 ClearCorrect's performance in the United States versus
02:34 13 the performance in the rest of the world?
02:34 14 A. I mean, the acquisition of ClearCorrect by
02:34 15 Straumann has definitely helped overall the
02:34 16 ClearCorrect process and infrastructure and just kind
02:34 17 of grown us up a little bit.
02:34 18 But when you look at the sales in the United
02:34 19 States, we've remained flat or declined; whereas,
02:34 20 outside of the United States, like Latin America,
02:34 21 Europe, and even Canada, we've grown.
02:34 22 Q. So outside the United States, growing?
02:34 23 A. Yes.
02:34 24 Q. Inside of the United States, not growing?
02:34 25 A. Correct.

02:34 1 Q. Is the product that ClearCorrect sells any
02:34 2 different outside the United States versus inside the
02:34 3 United States?
02:34 4 A. No. It's exactly the same.
02:34 5 Q. Are the marketing approaches different outside
02:34 6 of the United States versus inside the United States?
02:34 7 A. No. They're the same.
02:34 8 Q. Are there any product issues relating to
02:34 9 quality or anything else that are different outside the
02:35 10 United States versus inside the United States?
02:35 11 A. No. We see the same things.
02:35 12 Q. So if the product is the same, the marketing
02:35 13 is the same, and the quality is the same outside the
02:35 14 United States and inside the United States, what
02:35 15 accounts for the difference and the growth outside
02:35 16 versus the lack of growth inside the U.S.?
02:35 17 A. I mean, one of the main differences is Align's
02:35 18 practices.
02:35 19 Q. How's the scanner situation different outside
02:35 20 the United States versus inside the United States?
02:35 21 A. So Align actually accepts scans from 3Shape
02:35 22 TRIOS 3 outside of the United States, versus inside the
02:35 23 United States, they only accept scans from the iTero.
02:35 24 Q. I want to ask one more time just so we're all
02:35 25 clear.

02:35 1 They accept scans from non-Align scanners
02:35 2 outside the United States?
02:35 3 A. Yes.
02:35 4 Q. And that is not true inside the United States?
02:36 5 A. Correct.
02:36 6 Q. What effect does that have?
02:36 7 A. Yeah. I mean, you can see when you have even
02:36 8 more -- a slightly more open system outside of the
02:36 9 United States, that when the customers have choice,
02:36 10 they choose ClearCorrect.
02:36 11 Q. Ms. Sterling, you're the corporate
02:36 12 representative, right?
02:36 13 A. Yes.
02:36 14 Q. So I want to ask you as the corporate
02:36 15 representative some questions about the important
02:36 16 issues at the core of this case, fair?
02:36 17 A. Fair.
02:36 18 Q. Has ClearCorrect -- just to be brutally
02:36 19 honest, has ClearCorrect been profitable in the United
02:36 20 States?
02:36 21 A. No. We have not.
02:36 22 Q. Ms. Sterling, if the iTero lock-in system you
02:36 23 just described was removed in the United States and if
02:36 24 there was an even playing field, would ClearCorrect be
02:36 25 able to increase production to account for that

02:37 1 increased demand?
02:37 2 A. Absolutely.
02:37 3 Q. How so?
02:37 4 A. We have room in our Round Rock facility to
02:37 5 take on additional capacity of aligners.
02:37 6 Q. Two times more capacity?
02:37 7 A. Absolutely.
02:37 8 Q. Three times more capacity?
02:37 9 A. Yes.
02:37 10 Q. What about four times more capacity?
02:37 11 A. Yes.
02:37 12 Q. Ms. Sterling, you've spoken a lot about your
02:37 13 work at ClearCorrect. I want to ask you, what has that
02:37 14 work meant to you?
02:37 15 A. I'm extremely proud of the work that I
02:37 16 personally have done and what we do at ClearCorrect.
02:37 17 I get to work with extremely talented people,
02:37 18 and the products that we make make differences in
02:37 19 patient's lives. And for me to be able to be in the
02:37 20 position I am and get to see that impact, it's super
02:37 21 rewarding.
02:37 22 Q. If there was a level playing field instead of
02:37 23 a tilted playing field, if there was a level playing
02:37 24 field, do you believe ClearCorrect is capable of
02:37 25 competing with Align?

02:38 1 A. Absolutely.
02:38 2 Q. How, if at all, have Align's actions impacted
02:38 3 ClearCorrect's ability to compete fairly?
02:38 4 A. I mean, we don't even get the products to the
02:38 5 customers, right? The customers, the -- are locked
02:38 6 into Align. So we don't even get -- allowed our
02:38 7 patients to get exposure to ClearCorrect.
02:38 8 Q. Can I ask you some questions about the
02:38 9 allegations Align has made in this case?
02:38 10 A. Yeah.
02:38 11 Q. What's your understanding of their accusations
02:38 12 about ClearCorrect?
02:38 13 A. They're alleging that we are infringing on
02:38 14 several patents.
02:38 15 Q. And when you first learned about those
02:38 16 accusations, how'd you react?
02:38 17 A. I was shocked and then frustrated.
02:38 18 Q. Why were you shocked and why were you
02:38 19 frustrated?
02:38 20 A. Because we invest countless resources in
02:38 21 research and development and independently create our
02:38 22 own materials. We do not infringe.
02:39 23 Q. Sitting here today -- and you've been sitting
02:39 24 at that table for this whole trial, right?
02:39 25 A. Yes.

02:39 1 Q. And all the evidence you've heard so far,
02:39 2 right?
02:39 3 A. Yes.
02:39 4 Q. Do you still hold that view?
02:39 5 A. Absolutely.
02:39 6 Q. Does ClearCorrect as a company, as a company,
02:39 7 agree with Align's accusations in this lawsuit?
02:39 8 A. No.
02:39 9 Q. What is the company's position on those
02:39 10 accusations?
02:39 11 A. We do not infringe.
02:39 12 Q. Ms. Sterling, one last question.
02:39 13 Why'd you come back to Texas from Switzerland
02:39 14 to testify to this jury in this lawsuit today?
02:39 15 A. Yeah. I mean, ultimately I'm here because at
02:39 16 ClearCorrect and Straumann, we have chosen to take a
02:39 17 fundamentally different approach to the way that we
02:39 18 approach business. We believe in partnership and
02:39 19 collaboration and co-creation and ultimately having an
02:39 20 open system that allows doctors to choose the right
02:40 21 technology to meet their patients' needs.
02:40 22 We have invested countless resources and R&D
02:40 23 and independently have created the tools and
02:40 24 technologies that meet the patients' needs that I just
02:40 25 explained.

02:40 1 What Align is alleging in this case is not
02:40 2 only false but is just another attempt to try to lock
02:40 3 out competition. And at the end of the day, what that
02:40 4 means is that doctors don't have the options for their
02:40 5 patients.
02:40 6 And at ClearCorrect and Straumann, we take
02:40 7 that very seriously. And for me personally, I felt it
02:40 8 was important to be here so that we were able to hear
02:40 9 all of the facts.
02:40 10 MR. UNDERWOOD: Thank you very much,
02:40 11 Ms. Sterling.
02:40 12 Your Honor, I pass the witness.
02:40 13 CROSS-EXAMINATION
02:40 14 BY MR. DURST:
02:41 15 Q. Good afternoon, Ms. Sterling.
02:41 16 A. Good afternoon.
02:41 17 Q. My name is Tim Durst. We met in the courtroom
02:41 18 earlier.
02:41 19 A. Yes.
02:41 20 Q. Now, Ms. Sterling, you are the global head of
02:41 21 marketing for Straumann?
02:41 22 A. I'm the global head of marketing for
02:41 23 ClearCorrect at Straumann.
02:41 24 Q. You're employed by Straumann. Your contract
02:41 25 is with Straumann?

02:41 1 A. Yes. My contract is with Straumann.
02:41 2 Q. Ms. Sterling, I'd like to show you PDX
02:42 3 No. 1.81, which you saw when you were sitting here in
02:42 4 the courtroom during opening statement.
02:42 5 I'm going to pull that up. It'll be here on
02:42 6 the screen.
02:42 7 A. Okay.
02:42 8 Q. This shows the growth rate of aligner
02:42 9 companies over this period of time in the United
02:42 10 States.
02:42 11 Do you understand that?
02:42 12 A. I understand that.
02:42 13 Q. And a number of these companies that are
02:42 14 listed here are the companies that you identified as
02:42 15 your competitors, right?
02:42 16 A. Yes.
02:42 17 Q. So Spark's a competitor?
02:42 18 A. Correct.
02:42 19 Q. Angel is a competitor?
02:42 20 A. Yes.
02:42 21 Q. SureSmile is a competitor?
02:42 22 A. Yes.
02:42 23 Q. [redacted]
02:43 24 [redacted]
02:43 25 [redacted]

02:43 1 [redacted]
02:43 2 [redacted]
02:43 3 A. [redacted]
02:43 4 Q. [redacted]
02:43 5 [redacted]
02:43 6 [redacted]
02:43 7 A. [redacted]
02:43 8 Q. [redacted]
02:43 9 A. [redacted]
02:43 10 Q. And then if we do one click, we see
02:43 11 ClearCorrect, right?
02:43 12 A. Correct. Yes.
02:43 13 Q. ClearCorrect's story is different. It's not
02:43 14 growing, is it?
02:43 15 A. It's not growing.
02:43 16 Q. Now, were you -- do you remember Mr. Lahlouh
02:43 17 told the jury that he sells his product Zendura FLX not
02:43 18 only to ClearCorrect but a number of these other
02:43 19 competitors, right?
02:43 20 A. Right.
02:43 21 Q. So Spark and Angel, they buy and use the same
02:43 22 materials in their aligners that your company does?
02:44 23 A. Correct.
02:44 24 Q. So in some of these products, they use the
02:44 25 same materials as you, right?

02:44 1 A. They use the same materials.
02:44 2 Q. And all of these companies, they compete in
02:44 3 the United States, same as you, right?
02:44 4 A. Yes.
02:44 5 Q. And all of these companies, they -- they
02:44 6 compete against Align too, don't they?
02:44 7 A. Yes.
02:44 8 Q. [redacted]
02:44 9 [redacted]
02:44 10 [redacted]
02:44 11 [redacted]
02:44 12 A. [redacted]
02:44 13 Q. [redacted]
02:44 14 [redacted]
02:44 15 A. [redacted]
02:44 16 Q. While ClearCorrect is not?
02:44 17 A. Yes.
02:44 18 Q. So something different is going on with
02:44 19 ClearCorrect, isn't it?
02:44 20 A. Something's happening with ClearCorrect.
02:44 21 Q. Yes. Now, might it be that it's a product
02:44 22 issue? Could be, right? Could be a product quality
02:45 23 issue, right?
02:45 24 A. Maybe.
02:45 25 Q. Could be?

02:45 1 Well, do you know -- you know -- you've heard
02:45 2 about the problems at Round Rock and scrap rates and
02:45 3 the retooling rates? You've heard about those?
02:45 4 A. I heard it, yes.
02:45 5 Q. That could be impacting ClearCorrect, couldn't
02:45 6 it?
02:45 7 A. One of the reasons, yes.
02:45 8 Q. That could be one of the reasons it's not
02:45 9 growing [redacted]. That could
02:45 10 be it, right?
02:45 11 A. Could be one of the reasons why we're not
02:45 12 growing.
02:45 13 Q. And it could be that they spend more money in
02:45 14 marketing. That's possible, right? They could be
02:45 15 doing a better job at marketing than you. That's
02:45 16 possible, isn't it?
02:45 17 A. It's possible.
02:45 18 Q. It could be -- Ms. Sterling, with all due
02:45 19 respect, it could be that they're better managed than
02:45 20 ClearCorrect too. That's possible too, isn't it?
02:45 21 A. It's possible.
02:45 22 Q. Now, I want to -- I want to go back now to a
02:46 23 slide that Mr. Underwood used in your direct
02:46 24 examination, and it is JTX-60.
02:46 25 Now, Ms. Sterling, did you mean to tell the

02:46 1 jury that iTero was a closed system?
02:46 2 A. Yes.
02:46 3 Q. This shows us --
02:46 4 MR. DURST: Let's highlight that iTero
02:46 5 line, Mr. Smith.
6 BY MR. DURST:
02:46 7 Q. Let's just be sure we know what we're looking
02:46 8 at here. These are the cases -- meaning the number of
02:46 9 patient prescriptions. These are the cases that were
02:46 10 submitted to ClearCorrect over the course of these
02:46 11 years, right?
02:46 12 A. Right.
02:46 13 Q. And over the course of these years, 50,000
02:47 14 ClearCorrect aligners were ordered based upon scans
02:47 15 from Align's iTero customers?
02:47 16 A. Out of 1.5 million, yes.
02:47 17 Q. Align's iTero scanner?
02:47 18 A. Yes.
02:47 19 Q. And your scanners are listed on here too,
02:47 20 aren't they?
02:47 21 A. Yes.
02:47 22 Q. And so if you look at your scanners, one of
02:47 23 them is the next line, Virtuo Vivo.
02:47 24 Do you see that?
02:47 25 A. Yes.

02:47 1 Q. So more ClearCorrect aligners were made using
02:47 2 the Align system than were made using Straumann's
02:47 3 Virtuo Vivo, right?
02:47 4 A. Right.
02:47 5 Q. And there are other Straumann scanners shown
02:47 6 on here too, aren't there?
02:47 7 A. Yes.
02:47 8 Q. If you go to the Straumann SIRIOS scanner,
02:47 9 that's one of your scanners?
02:47 10 A. Correct.
02:47 11 Q. Hardly registers, does it?
02:47 12 A. This is just test data. This isn't launched.
02:48 13 Q. It hardly registers, doesn't it?
02:48 14 A. Yes. It's just test data.
02:48 15 Q. So just to state the obvious, there were more
02:48 16 ClearCorrect aligners made with Align's iTero scanner
02:48 17 than with Straumann's SIRIOS scanner, right?
02:48 18 A. Right.
02:48 19 Q. And you said that -- did you mean to leave the
02:48 20 impression that PVS impressions, that goop, that that
02:48 21 is not a viable alternative for building aligners? Did
02:48 22 you mean to leave the jury with that impression?
02:48 23 A. No. It's just not industry standard.
02:48 24 Q. Over the course of this time, over the course
02:48 25 of this data, PVS impressions were far and away the

02:48 1 largest source of orders for ClearCorrect aligners,
02:48 2 weren't they, ma'am?
02:48 3 A. Yes.
02:48 4 Q. Now, Ms. Sterling, your job is about trying to
02:49 5 make for more sales of ClearCorrect, right?
02:49 6 A. Yes.
02:49 7 Q. That's what marketing does. You try to
02:49 8 generate interest in the brand, loyalty to the brand,
02:49 9 and drive more sales?
02:49 10 A. Yes.
02:49 11 Q. And you're in charge of that for ClearCorrect?
02:49 12 A. Yes.
02:49 13 Q. But you'd have to ask the folks in the home
02:49 14 office for your budget, right?
02:49 15 A. Yes.
02:49 16 Q. And I think you said several times that your
02:49 17 marketing budget is limited to the percentage of your
02:49 18 sales.
02:49 19 Did I hear you correctly?
02:49 20 A. Correct.
02:49 21 Q. That's a Straumann decision to so limit the
02:49 22 budget, isn't it, ma'am?
02:49 23 A. It's a ClearCorrect decision.
02:49 24 Q. And your budget, though, for ClearCorrect is
02:49 25 approved by your boss, right?

02:50 1 A. Yes.
02:50 2 Q. You said in the same office over in
02:50 3 Switzerland, you got your promotion, got more
02:50 4 responsibility, you moved closer to the
02:50 5 decision-makers, and you sat in the same place as your
02:50 6 boss, right?
02:50 7 A. Yes.
02:50 8 Q. And that's Mr. Kirsch?
02:50 9 A. Yes.
02:50 10 Q. And your boss' boss is there too, right?
02:50 11 A. Yes.
02:50 12 Q. The jury has heard from him, Mr. Daniellot?
02:50 13 A. Correct.
02:50 14 Q. And they make the decision about how much
02:50 15 budget you get, don't they?
02:50 16 A. Based on ClearCorrect, yes.
02:50 17 Q. Ma'am, you told me -- do you remember we took
02:50 18 your deposition in this case?
02:50 19 A. Yes.
02:50 20 Q. And Straumann makes that budgeting decision,
02:50 21 don't they?
02:50 22 A. Yes.
02:50 23 Q. Straumann makes the budgeting decision for
02:50 24 ClearCorrect?
02:50 25 A. ClearCorrect is a Straumann Group company.

02:50 1 Q. Okay, ma'am. Does Straumann --
02:50 2 THE COURT: I'm sorry. If you could just
02:50 3 answer his question directly, okay?
02:50 4 BY MR. DURST:
02:50 5 Q. Does Straumann set the marketing budget for
02:50 6 ClearCorrect?
02:50 7 A. Yes.
02:50 8 Q. And there have been times, ma'am, when you've
02:51 9 asked for more money, right?
02:51 10 A. Yes.
02:51 11 Q. And Mr. Kirsch has said no?
02:51 12 A. Yes.
02:51 13 Q. Now, you said your budget is $2 million for
02:51 14 marketing?
02:51 15 A. In the United States.
02:51 16 Q. And the United States is your largest market?
02:51 17 A. Yes.
02:51 18 Q. So in your largest market, you have $2 million
02:51 19 of budget, correct?
02:51 20 A. Correct.
02:51 21 Q. And four people?
02:51 22 A. Yes.
02:51 23 Q. For all 50 of these great United States?
02:51 24 A. Yes.
02:51 25 Q. Four people?

02:51 1 A. Yes.
02:51 2 Q. All right. And do you know, ma'am, how
02:51 3 much -- do you know how much of a percentage of
02:51 4 Straumann's revenue is your budget?
02:51 5 A. I do not.
02:51 6 Q. Well, let's work through that.
02:51 7 MR. DURST: May I have the ELMO, please?
8 BY MR. DURST:
02:52 9 Q. Okay. So I have to scan out a little bit
02:52 10 here. All right. I'd ask you to help me create this
02:52 11 aid for the jury, okay?
02:52 12 A. Okay.
02:52 13 Q. All right. So the Straumann ClearCorrect
02:52 14 marketing budget for aligners. In the United States,
02:52 15 how much is that?
02:52 16 A. 2 million.
02:52 17 Q. All right. Now, let's look at the Straumann
02:52 18 revenues.
02:52 19 MR. UNDERWOOD: Your Honor, may we
02:52 20 approach?
02:52 21 THE COURT: Sure.
02:52 22 (Bench conference.)
02:52 23 MR. UNDERWOOD: I apologize for the
02:53 24 delay, Your Honor. I wanted to raise two issues, both
02:53 25 as part of the Court's motions in limine -- or orders

02:53 1 in limine.

02:53 2 The first relates to I think where

02:53 3 Mr. Durst is going, into total company revenues, which

02:53 4 we believe is off limits under the Court's standing

02:53 5 MILs. And then as an additional matter --

02:53 6 THE COURT: Are you headed there?

02:53 7 MR. DURST: I am headed there,

02:53 8 Your Honor.

9 MR. UNDERWOOD: And as an additional

02:53 10 matter, the Court granted our motion in limine on

02:53 11 Straumann's dental implant business and revenues

02:53 12 related to that. Both of those orders in limine

02:53 13 preclude this line of questioning, given where he said

02:53 14 he's going.

02:53 15 THE COURT: So, Mr. Durst, how do you get

02:53 16 to a total amount of revenue without including the

02:53 17 other products that are not in the case?

02:54 18 MR. DURST: Your Honor, she has testified

02:54 19 that her budget is set by Straumann and said it's a

02:54 20 percentage of revenue. They've been talking about all

02:54 21 of our revenue since Day 1 in the opening -- in the

02:54 22 opening statement, Your Honor. They've been talking

02:54 23 about our revenue then.

02:54 24 Your Honor, Straumann is a defendant

02:54 25 here. This is not like I'm trying to bring in somebody

02:54 1 who is not a defendant.
02:54 2 Those people sat over there in
02:54 3 Switzerland. They make the decision about budget.
02:54 4 They make it based on a percentage of revenue. And
02:54 5 their revenue is relevant, Your Honor. And they've
02:54 6 opened the door to this.
02:54 7 MR. UNDERWOOD: May I respond to that,
02:54 8 Your Honor?
02:54 9 THE COURT: Yes.
02:54 10 MR. UNDERWOOD: It's based on
02:54 11 ClearCorrect, Your Honor, and the products in this
02:54 12 case.
02:54 13 Straumann may set it. She has testified
02:54 14 to that. But they don't set it based upon dental
02:54 15 implant revenues. Those are completely separate. The
02:54 16 products aren't in this case, has nothing to do with
02:54 17 the way they set their budgets.
02:54 18 MR. DURST: That seems, to me, Your
02:54 19 Honor, something that could be addressed on redirect.
02:54 20 THE COURT: So here's the deal. I
02:54 21 don't -- we can't unring this bell if we -- which way I
02:55 22 rule -- I mean, if I allow you to do it.
02:55 23 I'm going to not permit it at the moment,
02:55 24 and you can finish with her, and we can take this up in
02:55 25 a more robust way. And I can fully understand, for

02:55 1 example, who the plaintiff is in the antitrust case and
02:55 2 how the damages are -- I mean, I don't know -- you all
02:55 3 know the minutia of which companies are which and which
02:55 4 products are which and all that.
02:55 5 It seems to me, off the top of my head,
02:55 6 that if the defendant is asking for antitrust damages,
02:55 7 then, Mr. Durst, you would be right in getting a total
02:55 8 number, but I don't know that.
02:55 9 So for now, I'm going to not allow you to
02:55 10 ask that total number. But after we take it up, I'll
02:55 11 allow you to recall her to the stand and ask that
02:55 12 question if I decide that you can do it.
02:56 13 MR. DURST: Your Honor, I appreciate that
02:56 14 accommodation, but there is no time like the present.
02:56 15 And they have --
02:56 16 THE COURT: Mr. Durst. You had me at you
02:56 17 appreciate the accommodation. So that's my ruling.
02:56 18 MR. DURST: Okay.
02:56 19 MR. UNDERWOOD: Thank you, Your Honor.
02:56 20 (Bench conference concludes.)
02:56 21 MR. DURST: Thank you, Judge.
02:56 22 BY MR. DURST:
02:56 23 Q. Ms. Sterling, do you know the percentage of
02:56 24 revenue that $2 million represents?
02:56 25 MR. UNDERWOOD: Your Honor, I'm going to

02:56 1 re-urge the same objection we just discussed.
02:56 2 THE COURT: Sustained.
02:56 3 MR. DURST: Your Honor -- so let me ask
02:56 4 the question a different way.
5 BY MR. DURST:
02:56 6 Q. Ms. Sterling, you said it's set as a
02:56 7 percentage of revenue?
02:56 8 A. Yes.
02:56 9 Q. The marketing budget. What is that
02:56 10 percentage?
02:56 11 A. In general, we follow around 7 to 10 percent
02:56 12 of revenue.
02:56 13 Q. 7 to 10 percent of revenue?
02:56 14 A. Yeah.
02:56 15 Q. And so your marketing spend is going down this
02:57 16 year?
02:57 17 A. Can you clarify the question?
02:57 18 THE COURT: And by "your," I think if you
02:57 19 would say the name of who you mean by "your," just so I
02:57 20 know.
02:57 21 BY MR. DURST:
02:57 22 Q. We're talking about the $2 million in
02:57 23 ClearCorrect advertising?
02:57 24 A. In marketing, yes.
02:57 25 Q. And you said it's a percentage of revenue?

02:57 1 A. Yes.
02:57 2 Q. We've seen that your revenue's going down?
02:57 3 A. Yes.
02:57 4 Q. Your marketing spend, it's going down, isn't
02:57 5 it, ma'am?
02:57 6 A. It's reevaluated at the beginning of each
02:57 7 year.
02:57 8 Q. And when is that?
02:57 9 A. In January.
02:57 10 Q. In January.
02:57 11 So next January, your marketing spend will go
02:57 12 down?
02:57 13 A. Likely.
02:57 14 Q. And it went down last year too, didn't it?
02:57 15 A. It's been around 2 million.
02:57 16 Q. But as the revenue goes down, which you have
02:57 17 said is happening, your spend is going down?
02:57 18 A. In general.
02:57 19 Q. And ClearCorrect is not -- they spend
02:58 20 virtually no money on direct-to-consumer marketing,
02:58 21 correct?
02:58 22 A. Correct.
02:58 23 Q. So it's never going to be the case in all
02:58 24 likelihood that a patient will walk into an
02:58 25 orthodontist office and ask for ClearCorrect, right?

02:58 1 A. I can't say that.
02:58 2 Q. Well, you put no marketing effort behind
02:58 3 trying to make that happen; isn't that true?
02:58 4 A. We don't invest in direct to consumer.
02:58 5 Q. Okay. Ma'am, do you put any effort behind
02:58 6 trying to put yourself in a situation where a patient
02:58 7 walks into a orthodontist office and says, if I get
02:58 8 aligners, I want them to be ClearCorrect?
02:58 9 A. Yes. We do.
02:58 10 Q. Okay. You do not do that by advertising to
02:58 11 the consumers, do you?
02:58 12 A. We do not.
02:58 13 Q. Okay. Now, Ms. Sterling, I'd like to go to a
02:59 14 couple more of the exhibits that Mr. Underwood called
02:59 15 up. And let's turn to DTX-2236.
02:59 16 You see this document? This is what
02:59 17 Mr. Underwood asked you about.
02:59 18 A. Yes.
02:59 19 Q. Do you know why he asked you so many questions
02:59 20 about six-year-old documents instead of more current
02:59 21 documents?
02:59 22 A. I do not know.
02:59 23 Q. 2020 were the exhibits that he used with you
02:59 24 primarily, weren't they?
02:59 25 A. Yes.

02:59 1 Q. Now, let's go to Page No. 4 of this document.
02:59 2 And in this page, your team is identifying the
03:00 3 North American market overview, right?
03:00 4 A. Yes.
03:00 5 Q. And so in the categories, established brands,
03:00 6 newcomers, and direct to customers, right?
03:00 7 A. That's what it says.
03:00 8 Q. And you guys call yourself an established
03:00 9 brand.
03:00 10 Do you see that?
03:00 11 A. Yes. I see that.
03:00 12 Q. [redacted]
03:00 13 [redacted]
03:00 14 A. Can you clarify?
03:00 15 Q. Well, you have Angel as a newcomer. That
03:00 16 means new to the market, right?
03:00 17 A. Yeah.
03:00 18 Q. [redacted]
03:00 19 [redacted]
03:00 20 A. [redacted]
03:00 21 Q. And you also had this other category called
03:00 22 Direct to Consumers.
03:00 23 Do you see that?
03:00 24 A. Yes.
03:00 25 Q. And in direct to consumers, that's where these

03:00 1 companies might sell directly to a consumer. That's
03:01 2 pretty simple, right?
03:01 3 A. Correct.
03:01 4 Q. And so if we were to look at the proper
03:01 5 definition of the market, it would include this direct
03:01 6 to consumer?
03:01 7 A. Yes.
03:01 8 MR. DURST: Now, let's also go to Slide
03:01 9 No. 8, please.
10 BY MR. DURST:
03:01 11 Q. And on Slide No. 8, tell the jury what your
03:01 12 team is evaluating here.
03:01 13 A. The North America value proposition
03:01 14 perception.
03:01 15 Q. And it looks like Invisalign is up in the
03:01 16 upper right, right?
03:01 17 A. Yes. That's what that says.
03:01 18 Q. And that's telling us that of all these
03:01 19 competitors, and then particularly relative to
03:01 20 ClearCorrect, Invisalign has the highest quality
03:01 21 perception, right?
03:01 22 A. That's what the document says.
03:01 23 Q. Well, that's your document, isn't it, ma'am?
03:01 24 A. I wasn't here in 2020.
03:01 25 Q. So do you -- have you lost confidence in this

03:02 1 document?
03:02 2 A. No. I just wasn't part of preparing it.
03:02 3 Q. Okay. Invisalign has the highest quality
03:02 4 perception over ClearCorrect and all the rest?
03:02 5 A. That's what this says.
03:02 6 Q. And it also says that Invisalign has the most
03:02 7 comprehensive treatment of all the rest, doesn't it?
03:02 8 A. Yes. That's what this says.
03:02 9 Q. We're going to rescue you from your 2020
03:02 10 documents and look at a couple more recent ones, all
03:02 11 right?
03:02 12 A. Okay.
03:02 13 Q. Let's go to your 2024 plan, and let's -- let's
03:02 14 call up how about the PTX-126. I'm not going to get
03:02 15 there just quite yet.
03:02 16 Now, you recognize ClearCorrect's got a number
03:03 17 of weaknesses in its offerings, right?
03:03 18 A. I wouldn't say it like that.
03:03 19 Q. Well, you recognize that lack of budget is a
03:03 20 weakness, right?
03:03 21 A. No.
03:03 22 Q. Or employee experience and qualifications,
03:03 23 those are weaknesses, aren't they?
03:03 24 A. No.
03:03 25 Q. Or manufacturing delays in quality issues,

03:03 1 those are weaknesses too, right?
03:03 2 A. No.
03:03 3 Q. All right. So let's look at Exhibit 126.
03:03 4 What is Exhibit 126? We can't put it on the
03:03 5 screen yet. I don't think it's admitted.
03:03 6 Can you look at it on your screen and tell the
03:03 7 jury what that is?
03:03 8 A. It's the Ortho 2024 Marketing Plan.
03:03 9 MR. DURST: Your Honor, I move to admit
03:03 10 Exhibit PTX-126.
03:03 11 MR. UNDERWOOD: No objection.
03:03 12 THE COURT: Admitted.
03:03 13 BY MR. DURST:
03:03 14 Q. This document, ma'am --
03:03 15 MR. DURST: Let's display it, please.
16 BY MR. DURST:
03:03 17 Q. -- was a document that was prepared by two of
03:04 18 your team members, right?
03:04 19 A. Correct.
03:04 20 Q. Sarah and Celeste, they work for you?
03:04 21 A. Yes.
03:04 22 Q. That's half your team, I guess?
03:04 23 A. No. These were worked in global.
03:04 24 Q. Those were done in -- oh. So some of the work
03:04 25 is done in Switzerland?

03:04 1 A. This was in Round Rock.
03:04 2 Q. But they're in Switzerland?
03:04 3 A. No. They're in Round Rock.
03:04 4 Q. Okay. So they're global team members.
03:04 5 They're not focused on the United States?
03:04 6 A. In part they are.
03:04 7 Q. Well, they used -- you and your team, you used
03:04 8 this document to set the strategy for the coming year,
03:04 9 right, for last year for 2025?
03:04 10 A. We used this for 2024.
03:04 11 Q. Okay. And you looked at the document, had
03:04 12 responsibility for it, et cetera, right?
03:04 13 A. I looked at the document, yes.
03:04 14 Q. And part of the analysis is to look at
03:04 15 something called SWOT, S-W-O-T?
03:04 16 A. Yes.
03:04 17 Q. What is that?
03:04 18 A. Strength, weaknesses, opportunities, and
03:04 19 threats.
03:04 20 Q. What's the "W" stand for?
03:05 21 A. Weaknesses.
03:05 22 Q. Weaknesses.
03:05 23 Okay. Let's go to Page 33. This is your SWOT
03:05 24 analysis?
03:05 25 It's on the screen too, ma'am, if you prefer.

03:05 1 A. Yes. This is a SWOT analysis.
03:05 2 Q. And this calls out weaknesses?
03:05 3 A. Perceived weaknesses, yes.
03:05 4 Q. And the first is: Low marketing budgets
03:05 5 compared to your competition.
03:05 6 Right?
03:05 7 A. That's what this says.
03:05 8 Q. And read the second one for the jury.
03:05 9 A. Varying levels of experience and
03:05 10 qualifications across internal teams.
03:05 11 Q. And then it goes on and says: Manufacturing
03:05 12 delays and quality issues are also weaknesses.
03:05 13 Right?
03:05 14 A. That's in the weaknesses column, yes.
03:05 15 Q. Pardon?
03:05 16 A. Yes. It's in the column.
03:05 17 Q. So your team perceives these weaknesses even
03:06 18 if you don't?
03:06 19 A. The team wrote this, yes.
03:06 20 Q. Now, you agree that a product -- that product
03:06 21 quality can impact customer perception, right?
03:06 22 A. Yes.
03:06 23 Q. And so if you have good quality, it can
03:06 24 positively increase customer perception?
03:06 25 A. Yes. It's one of the --

03:06 1 Q. And good quality would increase the likelihood
03:06 2 of making more sales?
03:06 3 A. It may be one of the reasons.
03:06 4 Q. Now, there's another side to that coin, right?
03:06 5 So bad quality can also impact customer perception?
03:06 6 A. It can impact.
03:06 7 Q. And bad quality can also hurt your sales?
03:06 8 A. It could impact it, yes.
03:06 9 Q. Well, you could lose customers over bad
03:06 10 quality, can't you?
03:06 11 A. Yes.
03:06 12 Q. And, you know, and a bad scan. You talked
03:06 13 about scanners. A bad scan can lead to a bad aligner
03:06 14 fit, right?
03:06 15 A. Yes.
03:06 16 Q. And good scans lead to better outcomes?
03:06 17 A. I wouldn't say that.
03:06 18 Q. Well, good scanners and good scans lead to
03:07 19 better -- better prescriptions?
03:07 20 A. Lead to better models.
03:07 21 Q. Which lead to better aligners?
03:07 22 A. Yes.
03:07 23 Q. And so it's important for companies to want to
03:07 24 control the quality of the scan or focus on the quality
03:07 25 of the scan that comes in for purposes of making an

03:07 1 aligner. You would agree with that?
03:07 2 A. One of the things, yes.
03:07 3 Q. Because it leads to higher quality and better
03:07 4 products and better customer perception, doesn't it,
03:07 5 ma'am?
03:07 6 A. One of the things, yes.
03:07 7 Q. Now, let's -- for clear aligners, you have to
03:07 8 scan differently -- pardon me.
03:07 9 For ClearCorrect, you have to scan
03:07 10 differently, don't you?
03:07 11 A. Yes.
03:07 12 Q. You have to scan more of the gums than you do
03:07 13 for other aligners?
14 A. Yes.
03:07 15 Q. And that's a decision that ClearCorrect has
03:07 16 made?
03:07 17 A. We've made the decision to have a high trim
03:08 18 line.
03:08 19 Q. That's a decision that the company made?
03:08 20 A. Yes.
03:08 21 Q. And that impacts the -- or that changes the
03:08 22 scan that you have to do?
03:08 23 A. Yes.
03:08 24 Q. It's harder for doctors to scan for those,
03:08 25 isn't it?

03:08 1 A. No.
03:08 2 Q. They have to go deeper in the mouth to scan,
03:08 3 right?
03:08 4 A. Not necessarily.
03:08 5 Q. Let's show the jury what we're talking about
03:08 6 with the different trim lines.
03:08 7 MS. DURIE: Let's go to PDX-29 -- or
03:08 8 pardon me. Let's go to PTX-75, Page 11.
9 BY MR. DURST:
03:08 10 Q. And we have prepared -- you see here we have
03:08 11 ClearQuartz. That's ClearCorrect up in the left,
03:08 12 right?
03:08 13 A. Yes.
03:08 14 Q. And Essix, that's one of your competitors?
03:08 15 A. Yes.
03:08 16 Q. See that there?
03:08 17 MR. DURST: Let's pull those out. I'm
03:08 18 going to show you what we've done. And pulling those
03:08 19 out, it will be PDX-29, but let's go ahead and pull
03:08 20 those out and highlight them with PDX-29, Mr. Smith.
03:08 21 There we go. Here's a better look.
22 BY MR. DURST:
03:09 23 Q. Now, you said -- I think you said "high." And
03:09 24 what do you call your trim line?
03:09 25 A. Flat.

03:09 1 Q. High and flat.
03:09 2 The upper visual there shows what we're
03:09 3 talking about, right?
03:09 4 A. Correct.
03:09 5 Q. Yellow line highlights the high and flat trim
03:09 6 line of your aligners?
03:09 7 A. Correct.
03:09 8 Q. And Essix has a lower trim line, right?
03:09 9 A. Yes.
03:09 10 Q. And it's what we call scalloped to follow the
03:09 11 shape of the tooth?
03:09 12 A. Yes.
03:09 13 Q. So it's not as tall?
03:09 14 A. Correct.
03:09 15 Q. And most of the rest of the market uses the
03:09 16 scalloped trim line, don't they?
03:09 17 A. Yes.
03:09 18 Q. And that's what Essix uses? It's what Align
03:09 19 uses, right?
03:09 20 A. Yes.
03:09 21 Q. And it's harder or different to scan for your
03:09 22 aligners than it is to scan for these other aligners,
03:09 23 isn't it?
03:09 24 A. It's different.
03:09 25 Q. It's so different that sometimes you have to

03:09 1 spend some of your precious marketing dollars in
03:09 2 educating doctors how to scan differently for
03:09 3 ClearCorrect.
03:09 4 That's true, isn't it, ma'am?
03:09 5 A. Yes. Part of our education is to -- how to
03:10 6 scan.
03:10 7 Q. Ma'am, do you have to spend part of your
03:10 8 limited marking dollars -- marketing dollars teaching
03:10 9 doctors how to scan differently for ClearCorrect?
03:10 10 A. A very small part, yes.
03:10 11 Q. You spend part of your money on that, don't
03:10 12 you?
03:10 13 A. Yes.
03:10 14 Q. And you do that because ClearCorrect made a
03:10 15 difference -- made the decision to have that different
03:10 16 product line, right, the trim line?
03:10 17 A. Differentiate, yes.
03:10 18 Q. Right. Okay. Now, let's go -- let's switch
03:10 19 gears just a little bit. I want to -- I want to show
03:10 20 you PTX-126, please. This is the same document that we
03:10 21 were looking at a moment ago.
03:10 22 MR. DURST: Let's go to Page 7 of this,
03:10 23 please.
24 BY MR. DURST:
03:10 25 Q. In this document, your team is saying:

03:10 1 Together we have an incredible opportunity.
03:10 2 Do you see that?
03:10 3 A. Yes.
03:11 4 Q. Do you know what is an ortho start,
03:11 5 Ms. Sterling?
03:11 6 A. It's the number -- it's ortho treatment.
03:11 7 Q. An ortho treats teeth straightening of any
03:11 8 kind. That's an ortho start, isn't it?
03:11 9 A. Yes.
03:11 10 Q. So that includes braces?
03:11 11 A. Yes.
03:11 12 Q. And aligners?
03:11 13 A. Yes.
03:11 14 Q. And your team here is saying there are 600
03:11 15 million potential patients out there, right?
03:11 16 A. Yes.
03:11 17 Q. And there have only been 22 million
03:11 18 teeth-straightening starts, right?
03:11 19 A. Yes.
03:11 20 Q. And then the reason I thought your people were
03:11 21 from Switzerland, because it's -- the currency size of
03:11 22 the market is expressed 7 billion. That's in Swiss
03:11 23 Francs, right?
03:11 24 A. Yes.
03:11 25 Q. And so that's the -- there's opportunity

03:11 1 there, right?
03:11 2 A. There's opportunity.
03:11 3 Q. And of all these ortho starts, these
03:12 4 22 million, only one in four of those have been
03:12 5 aligners, right?
03:12 6 A. Right.
03:12 7 Q. The others have been largely braces, haven't
03:12 8 they, ma'am?
03:12 9 A. Yes.
03:12 10 Q. And so your team is trying to increase that
03:12 11 penetration of aligners, aren't they?
03:12 12 A. No.
03:12 13 Q. You're not. You're not trying to grow
03:12 14 aligners?
03:12 15 A. Not out of the ortho starts.
03:12 16 Q. You're trying to grow your aligner sales,
03:12 17 aren't you?
03:12 18 A. Yes.
03:12 19 Q. Okay. Now, you showed us the 2020 documents
03:12 20 that talk about what you call as the market, but
03:12 21 Straumann talks about the teeth-straightening market,
03:12 22 don't they?
03:12 23 A. I believe so.
03:12 24 Q. So if we look at a more recent document, like
03:12 25 a 2024 annual report, an annual report is something

03:12 1 that your parent company puts out; it goes out to
03:12 2 investors, right?
03:12 3 A. Yes.
03:12 4 Q. They have an obligation and they feel an
03:12 5 obligation to tell the truth in that?
03:12 6 A. Yes.
03:12 7 Q. And to be straightforward and transparent?
03:13 8 A. Yes.
03:13 9 Q. And to be careful?
03:13 10 A. Be careful?
03:13 11 Q. Careful with their wording.
03:13 12 A. They want to be accurate.
03:13 13 Q. Yeah. And in that document, Straumann talks
03:13 14 about the teeth-straightening market, don't they --
03:13 15 A. I'd have to see.
03:13 16 Q. -- in that annual -- okay. We can pull it up.
03:13 17 MR. DURST: It's PTX-1615, please.
03:13 18 BY MR. DURST:
03:13 19 Q. Do you recognize this as Straumann's 2024
03:13 20 annual report?
03:13 21 A. Yes. I do.
03:13 22 MR. DURST: Move to admit, Your Honor.
03:13 23 MR. UNDERWOOD: Your Honor, I don't have
03:13 24 an objection, but may we briefly approach?
03:13 25 (Bench conference.)

03:13 1 MR. UNDERWOOD: I apologize, Your Honor.
03:13 2 We don't have an objection to this being admitted, but
03:13 3 it does include the overall revenue numbers that we
03:13 4 were mentioning earlier.
03:13 5 So subject to that caveat, that if he's
03:13 6 not going to use those overall revenue numbers, we have
03:13 7 no objection to its admission.
03:13 8 THE COURT: Let's -- I'll admit a
03:14 9 redacted version --
03:14 10 MR. UNDERWOOD: Thank you, Your Honor.
03:14 11 THE COURT: -- as of now. And if I
03:14 12 change my mind, I'll allow Mr. Durst to get into that,
03:14 13 we can unredact it.
03:14 14 MR. DURST: Your Honor, while we're up
03:14 15 here, I need to raise another ruling of the Court.
03:14 16 So Ms. Sterling has here talked about,
03:14 17 and Mr. Mueller talked about it in opening, 3Shape
03:14 18 termination that we cut off. She spent a bunch of time
03:14 19 talking about it, that we stopped interoperability with
03:14 20 3Shape in the United States.
03:14 21 And the Court has issued a ruling that
03:14 22 says that we cannot get into the legal considerations
03:14 23 of why we did that. It's already in the record.
03:14 24 Defendants put it in the record that we did that
03:14 25 because of patent litigation.

03:14 1 I intend to reference that patent
03:14 2 litigation and go no further, Your Honor. So go no
03:14 3 further other than that patent litigation. Nothing
03:14 4 about legal considerations will be addressed.
03:15 5 THE COURT: How much time do you have
03:15 6 left?
03:15 7 MR. DURST: I have probably ten minutes
03:15 8 left.
03:15 9 THE COURT: Okay. So here's what we're
03:15 10 going to do: We're going to go ahead and break for the
03:15 11 day.
12 MR. DURST: For the day. Okay.
03:15 13 THE COURT: That way that takes care of
03:15 14 your issue about -- we'll break.
15 MR. DURST: Sure.
03:15 16 THE COURT: When we get back, we'll take
03:15 17 up everything we just took up. Way easier for me to do
03:15 18 it without the jury sitting there. And that way he'll
03:15 19 either be able to or not be able to ask her about the
03:15 20 stuff you want in this cross.
03:15 21 MR. DURST: Okay. Your Honor, could
03:15 22 we -- can we have her excused for that discussion?
03:15 23 THE COURT: What?
03:15 24 MR. DURST: Even though she's the
03:15 25 corporate representative, can we have her excused for

03:15 1 that discussion? It really relates to her testimony.
03:15 2 THE COURT: I'm sorry. I wasn't
03:15 3 following you. I think you can have her excused while
03:15 4 we're debating what to do, because she is the witness
03:15 5 on it. I think that's fair.
03:15 6 MR. DURST: Right.
03:15 7 THE COURT: But yeah. That's fine.
03:15 8 MR. UNDERWOOD: And, Your Honor, I
03:15 9 apologize. Are we being dismissed for the day now?
03:16 10 THE COURT: Yes.
03:16 11 MR. UNDERWOOD: All right.
03:16 12 MR. DURST: Thank you, Your Honor.
03:16 13 THE COURT: Sure.
03:16 14 (Bench conference concludes.)
03:16 15 THE COURT: I feel like I already broke
03:16 16 my promise to you that we were going to break at 3:00.
03:16 17 So since the witness is a representative who's going to
03:16 18 be here anyway when we resume on Monday, I see no
03:16 19 reason to keep going today.
03:16 20 So ladies and gentlemen, we're done for
03:16 21 the day. We're done for the week. I hope you have a
03:16 22 wonderful evening. I hope you have a great weekend. I
03:16 23 hope you come back here with a song in your heart on
03:16 24 Monday morning, all bushy-tailed and bright-eyed to get
03:16 25 going again. And we'll make sure that we turn the

03:16 1 air-conditioner down over the weekend so it's more
03:16 2 comfortable in here.
03:16 3 But please don't discuss the case with
03:16 4 anyone, the evidence, and please don't do any research
03:16 5 until -- or ever. But I will see you Monday morning.
03:17 6 THE BAILIFF: All rise.
03:17 7 (Jury exited the courtroom.)
03:17 8 THE COURT: You may be seated.
03:17 9 I apologize that I can't take this up now
03:17 10 and get it resolved for you, but I really have to go do
03:17 11 this hearing. But we'll take up Monday morning the
03:17 12 issues, and I'll give you a roadmap, a little bit of a
03:17 13 roadmap.
03:17 14 Mr. Durst, at the end you said she's
03:17 15 testified a lot about X or Y, not that I don't believe
03:17 16 you. But since you'll have the time, if you want to
03:17 17 have actual parts of the transcript that you can point
03:17 18 to and if you'll by Sunday, whatever you want to talk
03:18 19 to me about, let counsel know what you're planning to
03:18 20 argue. That way, they'll be prepared to respond, and
03:18 21 we'll do it more quickly Monday morning.
03:18 22 So other than the issues that we dealt
03:18 23 with at the bench, I'll start with plaintiff.
03:18 24 Is there anything else we need to take
03:18 25 up?

03:18 1 MR. DURST: Nothing further, Your Honor.
03:18 2 MR. MUELLER: Nothing from defendants.
03:18 3 Your Honor, just so we're clear, we will
03:18 4 not discuss any testimony with Ms. Sterling.
03:18 5 THE COURT: Correct. Yes. That's right.
03:18 6 Other than that, you're free to speak to her, but you
03:18 7 can't go over anything that Mr. Durst discussed with
03:18 8 her.
03:18 9 MR. MUELLER: Absolutely. Absolutely.
03:18 10 Thank you, Your Honor.
03:18 11 THE COURT: Okay. Anything else?
03:18 12 Okay.
03:18 13 (Hearing adjourned.)
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1 UNITED STATES DISTRICT COURT)
2 WESTERN DISTRICT OF TEXAS)
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4
5 I, Kristie M. Davis, Official Court
6 Reporter for the United States District Court, Western
7 District of Texas, do certify that the foregoing is a
8 correct transcript from the record of proceedings in
9 the above-entitled matter.
10 I certify that the transcript fees and
11 format comply with those prescribed by the Court and
12 Judicial Conference of the United States.
13 Certified to by me this 12th day of July
14 2026.
15
16 /s/ Kristie M. Davis
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