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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

Case IPR2024-00432 (Patent 9,210,362 B2)
Case IPR2024-00435 (Patent 11,381,866 B2)
Case IPR2024-00438 (Patent 11,399,206 B2)

Record of Oral Hearing
Held: July 18, 2025

Before MICHELLE N. WORMMEESTER, JON M. JURGOVAN, and FREDERICK C. LANEY, *Administrative Patent Judges*.

APPEARANCES:

ON BEHALF OF THE PETITIONER:

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The above-entitled matter came on for hearing Friday, July 18, 2025, commencing at 9:02 a.m. MDT, at the U.S. Patent and Trademark Denver Regional Office, 1961 Stout Street, Denver, Colorado.

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

(9:02 a.m.)

JUDGE LANEY: Good morning, everyone. My name is Judge Laney. I have with me Judge Wormmeester and Judge Jurgovan. We are here for the consolidated hearings in IPR2024-00432, IPR2024-00435, and IPR2024-00438, all of which the Petitioner is Comcast Cable Communications, LLC., and Patent Owner is Entropic Communications, LLC.

We have a hearing and the scheduling order -- or the argument order, I believe, allots 120 minutes or about for the Petitioner and the Patent Owner. They are able to divide their time between their primary and then their rebuttal.

And so, what I would appreciate at this time, I'd like Counsel for Petitioner to identify themselves for the record. And if you could, let me know how much time you intend to use for your primary, and how much for your rebuttal. And then after that, we'll have the Patent Owner Counsel identify themselves for the record. And then tell me the amount of time you wish to reserve, as well as how much for your primary.

And we'll begin with the Petitioner.

MR. MEEKER: Thank you, Your Honor. Fred Meeker with the law firm of Banner & Witcoff, representing Comcast Cable Communication, LLC. With me are Mr. Craig Kronenthal, also with Banner & Witcoff, and Mr. Michael Cuviello, also from Banner & Witcoff.

On the phone, we have Heather Faltin, who is Vice President and Senior Deputy General Counsel, and Kevin Chung is Assistant Deputy General Counsel.

We're going to take an hour and a half in our opening, and reserve 30 minutes for rebuttal.

MR. HENDIFAR: Parham Hendifar from Lowenstein & Weatherwax, representing Patent Owner Entropic.

JUDGE LANEY: If you could just -- I think that court reporter is probably going to need you to speak up a little bit and a little bit slower.

MR. HENDIFAR: Sure. Parham Hendifar of Lowenstein & Weatherwax, representing Patent Owner Entropic. With me, lead Counsel Mr. Jason Engel of K&L Gates. And I'll be presenting also, Patent Owner filed objections to demonstratives. For logistical reasons, I also wanted to inquire how Your Honors prefer for us to make sure we said that -- the objections.

JUDGE LANEY: How about the time?

MR. HENDIFAR: Thirty minutes for rebuttal.

JUDGE LANEY: Thirty minutes for rebuttal, 90 minutes for your primary. Okay. So just as far as some administrative, just to be clear, it's my understanding that there is no highly confidential or confidential information that we need to make and take any measures to close the hearing room or take any steps for that. Am I correct?

MR. MEEKER: Correct, Your Honor.

JUDGE LANEY: Okay. Patent Owner raised the issue of their objections for the demonstratives. I think probably the best way for us to handle that -- obviously, we're assigning it. So, when you get up for your case, if you want to bring it up, if they use it in a way -- they may not get to it. They may not even use it. So, let's just see what happens. They use it in a way that you think is objectionable, consistent with the objections you

submitted, but -- you can address it. Maybe we'll ask some questions, but we'll reserve all judgment for -- okay?

All right. With that, I believe we will begin with the argument. And let me set the time limit. Before we begin the time, just for the record, for clarity, for the -432 matter, the patent involved is United States Patent No. 9,210,362. For the -435 matter, the patent involved is United States Patent No. 11,381,866. And for the -438 matter, the patent involved is United States Patent No. 11,399,206.

And with that, Petitioner, you may begin your argument.

MR. MEEKER: Okay. If you could go to Slide 2? Slide 2 shows that the claims in each patent are directed to a wideband receiver. All three patents have the same priority date and identical disclosures.

So, if we could go to Slide 3? Slide 3 shows that the only element in dispute is the digital front-end. That's the element in purple. On -- prior to the digital front-end is what is described in the patents as a conventional tuner. That's identified in red. There's an ADC, which is identified in yellow, which converts the analog signal to a digital signal. The digital front-end is in purple. That's what is in dispute here. The digital front-end contains a plurality of pictures, one for each channel. Those are RF channels, that'd be input in the red box.

Coming out of the digital front-end is either a serial or parallel stream. In order to get like a serial or a parallel chain of digital data coming out of that digital front-end, into a serial format, there necessarily needs to be a selector. Something that selects each of those different parallel channels and outputs on a single serial bus. That single serial bus is much faster than the channels coming in parallel.

So that's not really shown in the figure, but it is taught in the '362 patent. And it says it's done according to commonly known methods. So, that becomes important because Zhang actually shows that n-by-1 or n-by-m selector. So, it's not shown in this patent, but it is described. And it says it has a serial or parallel output according to known methods. So, there is structure in that digital front-end or digital down converter. That is the n-by-1 switch that switches everything out. And it has also performed some degree of selection on that switch.

Okay. So, if we turn to the next slide, Slide 4. Slide 4 shows a comparison between Zhang and the '362 patent. So, they both have an RF band, an RF input signal. That RF input signal is essentially the entire frequency spectrum. It goes through a high-speed analog to digital converter and then into a series of multipliers. The multipliers basically take those frequencies -- and they can be super high frequencies, all the, you know, satellite frequencies, all the way down to super low frequency, VHF frequencies.

And essentially, what it does is it multiplies them by a different frequency to get them down where you can process on them economically. Like, it's hard to process on a 3 gigahertz signal. It's easier to process if you take them down. Then they put them through a low-pass filter, which essentially filters out everything in between. And then they go out that serial or data -- or parallel interface.

JUDGE LANEY: Can I just interrupt, just so I fully understand. But I do want to ask, so you have a purple, which I believe you're calling the multiplier?

MR. MEEKER: Yes, sir.

JUDGE LANEY: Okay. And then the green is the low-pass.

MR. MEEKER: Correct.

JUDGE LANEY: So, on that multiplier are -- and each one, you said there's a series of the multipliers, a series of the low-pass, as shown in the figure, Figure 4, right?

MR. MEEKER: Yes, sir.

JUDGE LANEY: In each one of the multipliers, is all the -- are all the frequencies that are coming from the red box -- I don't know. What do we call the red box? Just like the frequency --

MR. MEEKER: Oh. It's radio front-end is typically what it's called.

JUDGE LANEY: The radio front-end, not the -- okay. So we got the radio front-end, the digital front-end. So we got the digital front-end, that had that has -- that includes what I was just referring to, as far as the multiplier and the low-pass, which we have with a purple box and a green box, right?

MR. MEEKER: Correct.

JUDGE LANEY: So out of the radio front-end are all the frequencies, and each one of the -- as it -- after they pass through the audio digital -- analog to digital converter, do they --

MR. MEEKER: It's everything.

JUDGE LANEY: Huh?

MR. MEEKER: It's everything.

JUDGE LANEY: It's everything, to each one. So, each time. You have everything, each time to each one.

MR. MEEKER: Correct. It's the entire frequency spectrum.

JUDGE LANEY: Okay. And for those multipliers, so, for example, coming out of the digital front-end, you have C1, C2, C3, as illustrated the figures, right?

MR. MEEKER: Correct.

JUDGE LANEY: Are the multipliers the same on each one or are they different in order to, as you said, you're going to be doing some processing. And so, you want to process to get C1, C2, C3. Are they going to be doing a different type of processing in order to -- their ultimate goal to have a C1, a C2, and a C3?

MR. MEEKER: The hardware is all the same, Your Honor.

JUDGE LANEY: Okay.

MR. MEEKER: It -- but there's a different oscillator frequency that's put into that multiplier. So, if you are up in the satellite range, you've got to move that signal all the way down to a much lower frequency, where you can put an effective low-pass filter on it, to only get out that one channel. Like if you want Channel 2, a VHF, you've got to move that signal to where you can operate on it. So, you multiply it by a certain frequency and it's going to change, depending on where that initial frequency is. And then you just stick it through a low-pass filter, and you get rid of all those other signals, except for the one that you want. So out of this would come VHF, Channel 2 to 6, and then the higher VHF channels. Like, each one is on a different frequency, and then there's a gap and then you would get the upper band of the VHF, whatever it is, 6 to 13 or something.

JUDGE LANEY: Okay. I think I'm a little bit confused in the answer. I understand the principles, what you're saying -- what you're trying to accomplish. But on one end, I heard you say that multiplier is going to be

the same? So, for example, C1, I have my C1 coming out. Let's take that line. Is that multiplier, because you're looking for Channel 1, let's say Channel 2 -- or Channel 2 through 6 --

MR. MEEKER: It would be 2 through 6. Channel 1 was reallocated, but yes.

JUDGE LANEY: Okay. So 2 through 6. And then C2 may be --

MR. MEEKER: It could be any channel you want. It could be like a UHF channel. But there's only one channel. It's either Channel 2, or Channel 3, or Channel 4 that's coming out of that multiplier.

JUDGE LANEY: So, and then there would be a different one from the next multiplier?

MR. MEEKER: The next multiplier would be a different one.

JUDGE LANEY: And then the next multiplier would be a different one?

MR. MEEKER: Correct.

JUDGE LANEY: And as the Zhang is saying, and the reason you're doing this is because you have a desired channel, right? Each one is trying to get a different desired channel from all the -- all that radio frequency that's coming from the radio front-end.

MR. MEEKER: Correct. The radio front-end is huge. It is taking in stuff that's multi gigahertz, like experimental satellite stuff, all the way down to AM radio. And you only want a single television channel out, which is what comes out of that low-pass filter.

And so, you're going to multiply -- those channels sit on a very broad spectrum. So, satellite can be up in the gigahertz range. And then you go through the cable TV range, which is high megahertz, and then the UHF

range, and then the VHF range. So, all of that, you just -- and there's huge number of channels in that range.

You would go figure out what channel you want. Put in -- it's a digitally controlled oscillator. So, you can program the frequency. You just send it a series of -- program the frequency. And that oscillator will take that chunk of spectrum, move it down to where your low-pass filter can isolate it, and that's how you get that channel out.

JUDGE LANEY: Okay. So, the multiplier and the low-pass, they really are working in conjunction. You're designing that multiplier in order to put those radio frequencies -- in order to put the channel -- in order to identify -- oh, well, how do I word that? I guess the way I understand what you're saying is, the multipliers are processing, if you will, these radio frequencies to get them to the channels that they want. And then the low-pass filter is doing the actual dirty work of isolating those channels.

MR. MEEKER: Correct. And it could be the same frequency for every low-pass filter and often is. Like, you're going to select either an intermediate channel or a baseband channel, something low that you can process on. And that low-pass filter can be the same across all C1 to Cn. It can be the same frequency because the bands are all the same. Like, typical television comes out in 6 megahertz bands, so --

JUDGE LANEY: So even though they're a different channel, they'd still be in the --

MR. MEEKER: They're still 6 megahertz each. And like there's a whole other twist of this in Zhang, that I don't know if I should get into. But, like, there's a distinction between a content channel and an RF channel. So, an RF channel can be just Channel 2 and that can be six megahertz. But

with all of the digital compression that exists, Zhang says, you can have up to 18 actual content channels on that six megahertz. So, MPEG-2, MPEG-4, like typically at this time frame, you could get like six channels still on that 6 megahertz bandwidth. Then it went to 12. Then it went to 24.

So, Zhang says you could do 18. So that must have been the max at the time frame.

JUDGE LANEY: Well, thank you for that clarification. That was helpful.

MR. MEEKER: Okay. Okay. Then all of those things coming out now have to go to either a serial or parallel bus. So, you can either output them all together, or you can multiplex them all onto one serial bus that runs much faster. And then it goes to a demodulator. Which basically decodes the digital signal and puts it in a format, so you can display it on the screen.

So, if the user wants to watch Channel 2 and 4 in picture-in-picture and he wants to switch between the baseball game and the football game, he's going to select Cn equals 2. Like he's going to say, I want picture-in-picture. The system is going to say Cn equals 2, and it is likely going to output those two channels, like on a single bus serially. But they will be time division multiplexed on that single bus, so they go into a decoder and then your screen shows Channels 2 and 4, the ball game and the football game and the baseball game.

JUDGE LANEY: And so when you say Cn 2 --

MR. MEEKER: That's just the channel, the multiplier, but you would have two multipliers there. One for each channel.

JUDGE LANEY: Ah, so you're saying like if it's four, then you'd have a 2, 4, 6, and 8 channels, basically?

MR. MEEKER: Correct. You could. But at some point, it reaches an upper limit.

JUDGE LANEY: Right. No, I get that, but that's --

MR. MEEKER: You're not going to be able to do them all on one serial channel. Then you have to start having a more complicated, you know, switch. Like, the selector has got to be more complicated if you get more complicated output. So today, like you can watch 24 channels on one screen. You need a more complicated selector at some point.

JUDGE LANEY: But I guess my -- I would be incorrect to understand C1 to be, for example, Channel 2, C2 to be, for example, Channel 4? C3 to be Channel 6?

MR. MEEKER: It can be, but it doesn't have to be. Like --

JUDGE LANEY: It can be though? There --

MR. MEEKER: Correct. It could be. Yes. And in the challenged patents, they contemplate digital compression, like multiple content channels on a single RF channel. Zhang does. So, Zhang has a more complicated selector because it can actually pull individual content channels out of a single RF channel and then redirect them to different places.

So, like your DVR, you may want to record your DVR, picture-in-picture. Or you might want to record a bunch of channels and then watch a bunch of other channels. So, Zhang takes into account this concept of MPEG compression. So, it has a more sophisticated n-by-m selector, but it's -- the challenged patents have to have a selector in it. They've got to have some way to get from those parallel paths out to a single serial path. It's just not shown in the drawing.

JUDGE LANEY: Well, isn't it a selector -- I guess, why isn't it a -- if all that's coming in is frequency, because we have to keep track of the claim on which, too. It talked about -- I'll bring it up. Just, I'm saying -- my exact -- at least -- okay, so, I'm looking at the '362 right now, Claim 1. And in particular -- well, let me ask this question, just to make sure you're understanding. And hopefully Patent Owner, if he disputes this, then I'll ask them as well.

But my understanding for the '362 patent, which is the -432 IPR matter --

MR. MEEKER: Yes, sir.

JUDGE LANEY: My understanding, the sole dispute out of all the claims, everything, the only dispute that is between Petitioner and Patent Owner is whether or not Petitioner has established that the prior discloses or renders obvious, in combination with a claim element, select said plurality of desired television channels from the said digitized plurality of frequencies. My understanding is the sole dispute is on that one element, for that matter.

MR. MEEKER: That's correct, Your Honor.

JUDGE LANEY: Okay. So, and I'm looking at this claim language. We're taking -- we're selecting from frequencies a plurality of channels. So, as I understand that claim language, we've got a bunch of frequencies. We're now selecting from those frequencies, channels. Do you understand that that element to be requiring more than that?

MR. MEEKER: I do not, Your Honor.

JUDGE LANEY: Okay.

MR. MEEKER: And what is key here is what it says is digital circuitry, in Figure 2. Do you see the -- where it says digital circuitry?

JUDGE LANEY: Yes.

MR. MEEKER: Now, if we could go back to the digital front-end, it doesn't specify that that digital circuitry has to be the multipliers or that it has to be the low-pass filters, or that it has to be the serial-to-parallel converter. All it says is digital circuitry that performs that function.

So somewhere in that box, they're going to take everything in the whole spectrum and they're going to output a channel for picture-in-picture or for DVR recording, or for some other use, but it's digital circuitry that does it. And it doesn't specify which one of that digital circuitry.

And if you go through every single claim of every patent, there's not a single claim that requires the multiplier or the filter alone, to perform that function. It's always digital circuitry, digital front-end, digital down converter. It's the big box.

JUDGE LANEY: Well, or it could be multiplexed. I mean, there's no limitation on the digital circuitry?

MR. MEEKER: There is not, Your Honor.

JUDGE LANEY: Okay.

MR. MEEKER: And our view is Zhang does just exactly that.

JUDGE LANEY: And Petitioner's view is that Zhang, you can -- Petitioner's view is they show Zhang doing it one of two ways. Either with the digital front-end alone or the digital front-end in combination with the selector 240?

MR. MEEKER: Correct. And they would read the claim as the multiplier alone doing that selection. That's how they're reading the claim. So that is not a claim, though. And that I think is the whole dispute.

JUDGE LANEY: So, do you understand the dispute to be they -- as you would characterize it, or understand it, they don't dispute that their selection is going up?

MR. MEEKER: Correct. They agree. Only desired channels are coming out of Zhang. They absolutely agree with that. They've admitted that it's in all their slides. Like, that's a big part of my presentation is explaining that. But they don't dispute that.

JUDGE LANEY: Okay. So, we have all these frequencies coming in from the radio front-end. So that satisfies the digitized plurality of frequencies?

MR. MEEKER: Yes.

JUDGE LANEY: And then if we looking at 4 of the demonstratives, where you have serial or parallel data interface, demodulator coming out, its Petitioner's understanding that there's no dispute that what is coming out of that backend is a desired or selected television channels?

MR. MEEKER: Correct, Your Honor. That is not in dispute. At least not that I'm aware.

JUDGE LANEY: Okay. And this is good, because this way, patent can hear it -- Patent Owner can hear it. He can dispute it if he disputes. And then in between the radio front-end and the serial port, is this digital front-end, and that's where you understand the major pains of the dispute to be?

MR. MEEKER: Correct. And --

JUDGE LANEY: And are you aware of any evidence from the specification of the '362 patent, which it does disclose the multipliers themselves doing the selection?

MR. MEEKER: There are, I think, nine different descriptions of what a desired and undesired channel are in the '362 patent. What we've done is we've showed that Zhang meets each of those different example types. And then we have multiple different theories that hit each of those buckets.

So, in one portion of Zhang -- I mean, one portion of the challenged patents, they say that the desired channel is like what the user wants to watch in picture-in-picture. So that could be done through C1 to Cn. It could be done through their selector, but whatever comes out needs to be those two channels for picture-in-picture or DVR. Zhang has an example of that. It's a DVR example.

They have another example in the '362 patent that says there's going to be a multiplier for every channel -- every licensed channel. And so, there are unlicensed channel, like Wi-Fi in your home is unlicensed spectrum, but almost everything else is licensed.

And so, they say -- and he just put it on the screen here, so it's upper right. It says, "In one embodiment, n can be equal to the number of all available channels that exist in the licensed frequency spectrum."

JUDGE WORMMEESTER: Where is it on? I don't see what you're seeing.

JUDGE LANEY: This is Page 23 of the demonstrative.

MR. MEEKER: I apologize. Petitioner's Demonstrative 23, upper right-hand corner, Exhibit 101, Column 5, Lines 31 to 40.

JUDGE LANEY: And just so the record is clear, I think you meant 1001.

MR. MEEKER: 1001.

JUDGE LANEY: All right.

MR. MEEKER: Thank you, Your Honor.

JUDGE WORMMEESTER: Thank you.

MR. MEEKER: So, in this embodiment, n equals all of the available channels that exist in the licensed frequency spectrum. So that is like everything, not only satellite channels. It's, you know, military channels, marine channels, astrological channels. Like, there's a lot of channels in the entire spectrum.

And so, in another portion in here, it says, "The number n is equal to the number of multipliers." So, they're going to have a multiplier for every one of those channels in this environment. Well, they can't output that to a television on the other end. So if n equals every channel in the whole world, that parallel -- the serial interface has to make some selection about what's coming out. There's no way -- there's no demodulator that exists, that's known to mankind, that can demodulate every known channel in the entire frequency spectrum.

And so here, there's something else doing that selection. And it's going to be in that digital front-end. The patent doesn't really specify it. It just says it's known. And it says it's a serial to parallel interface that's known. And it doesn't really draw it, but it is mentioned in the patent.

Now, they have other embodiments. There's another one here where -- so n equals all receivable channels in the geographic region. Well, like, some geographic regions have quiet zones, where they would exclude certain channels within a certain frequency range. But like, that's a lot of channels, whatever is available in the geographic region.

And so, in both of these cases, something else in that digital front-end is going to be doing that selection. And it is probably the selector circuitry

at the output, the n-by-m. The thing that's shown in Zhang, that's implied, implicit in the challenge paths, but there's not really a box other than the digital front-end.

And then in other places, they say it's picture-in-picture. One place, they say n equals 4. They're going to output four channels. So they have a bunch. One place, they say they're going to output all the television channels in the VHF, UHF, and cable range.

JUDGE LANEY: When you're saying “they,” again, you're still talking about --

MR. MEEKER: The challenged patents.

JUDGE LANEY: -- '362 patent?

MR. MEEKER: Yes. The '362 patent.

JUDGE LANEY: Okay.

MR. MEEKER: And it's the same in all three patents.

JUDGE LANEY: Yes.

MR. MEEKER: So, another example, they say, we're only going to pull the UHF, the cable channels, and the VHF. In another place, they say, the terrestrial channels, the cable channels, and the satellite channels. Satellite channels are even above that.

So, they give different examples, but it -- like, some of those examples are so large. There's going to be something else in that digital front-end doing that selecting. It's going to be just exactly like Zhang. So, it's described where I told you, where it says parallel or serial interface, as is commonly known. But there's not a box I can point to. I can point you to the spec. I can show you a serial interface comes out, going to a demodulator, but there's not a box.

If we put back up the comparison, Craig.

So, the only distinction is in Zhang, at the top. This is Slide 4. The n-by-m selector shows explicitly in Zhang how you get down to one channel or parallel channels coming out. In the challenged patents, it says serial or parallel data interface is coming out. And it says, as commonly known in the prior art. So, I'm not sure I answered your question, but --

JUDGE LANEY: No, no. This is helpful. I -- so I guess, let me simple -- just I want to give myself on a -- okay. I'm going to give a common lay person example, and I'd like you to tell me how it's inapplicable. Or if it is applicable, kind of how you're understanding this would operate.

MR. MEEKER: Okay.

JUDGE LANEY: And it may not. So we're all familiar with you have a cable company and there's History Channel, Fox, you know, there's Fox News, Fox regular, HBO, Showtime. Some are subscriptions, some aren't, some are public.

And so, my question is: When that comes in, obviously some people subscribe to Showtime, some people don't. Some people just get regular cable; some people have expanded packages. Is any of this applicable to that, in the sense that what is coming through is being filtered out and you're just getting -- I imagine what's coming through that, the cable company is sending you everything. Then you have a box that's saying, yeah, I got it. But I'm only interested -- my people in this house are only interested in the public channels, if you will.

MR. MEEKER: It's exactly what happens. So, you're -- the multipliers, you're not going to have 1,000 multipliers in your box. Nobody can watch 1,000 channels.

JUDGE LANEY: Okay.

MR. MEEKER: So, there's going to be a subset, maybe 35 or four, or five, or 10, but it's not going to be 1,000. And they're going to say, you subscribe to this package. But it's also going to be smarter and know you watch X number of channels. Or you like the military channels or the history channels, or the western channels. And that selector will group those channels together.

So, it will go and set the oscillator. So, we pull all the military, western channels, and HBO, whatever the favorite channels are. And then it will go and into the selector, it'll group the channels. Like, if you keep flipping back and forth between five western channels or five military channels, it'll group them together and put them in one oscillator, so you change channels quickly. You don't have to wait two minutes for that channel to queue up in that intake decoder.

So that's why you have that selector taking things from different frequencies and then channeling up into the same decoder. So, when you push the up or down channel button, you get fast channel switching. And that's what the challenged patents, or at least what Zhang says, why you have that selector in there. So, you can group those channels. So, you can switch quickly between them.

Otherwise, it takes a long time for that intake code --

(Simultaneous speaking.)

MR. MEEKER: -- to jet up. Like, it can sit there and spin while it's trying to build the code deck up in order to decode a digital channel. But if it's already on the same serial stream, that code deck decoder is already tuned up. And now you can switch quickly between your channels.

JUDGE LANEY: And in your response, when you said the selector, are you referring to 240, in Zhang's Figure 2?

MR. MEEKER: It would be 240, in Zhang's Figure 2, in conjunction with something that's providing data to the oscillators, to know which channels to select, out of the 1,000 channels coming into your home, or 3,000 channels. They're not going to, you know, de-multiply all 3,000 channels. They're going to pick some subset of that.

And then out of that is going to come into a -- some sort of selection circuitry, like either serial or parallel out. And they're going to select some number to put into one demodulator, to give you the best user experience. That's how these boxes work. And they've worked this way, all the way, 20 -- I mean, it's like 25 years ago now.

JUDGE LANEY: So using this as kind of a platform, as I understand Patent Owners, the evidence from Zhang, that they most rely upon is Paragraph 27?

MR. MEEKER: Correct.

JUDGE LANEY: And Paragraph 27 says, an ADC 220 then converts the down converted multichannel analog RF signal to a multichannel digital RF signal. In this specific environment, ADC 220 is a high-speed ADC so that an entire signal band with n channels can be converted.

Now, I'd like you to address that directly, but also, I'd like you to take it in context of what I understand Paragraph 28 and Paragraph 32 of saying -

- indicate. And I believe you've made these arguments in the briefs. But in those paragraphs, they talk about, for example, RF channels C1 to Cn contain content channels that are selected or used by subscriber. And I'd like you to -- I mean, you understand. You've read their argument. And I'd like you to address it now live.

But I also -- I mean, when it says, as you've argued -- I'd like you to go a little bit more than this, but as you pretty much argued, look, that's indicating -- at least that's a pretty -- that's a lot of smoke, if not a flaming fire, that you have channels that are being selected or at least distinguished based on preference of a subscriber?

MR. MEEKER: Correct.

JUDGE LANEY: And Paragraph 32 is somewhat similar. So, if you could just -- I'm not trying to -- you understand. I want to hear why -- your argument addressing Patent Owners, but I'd like to hear how they respond to you as well.

MR. MEEKER: Absolutely, Your Honor. So, Paragraph 27 says, "in this specific embodiment, ADC 220" -- and we're on Slide 27, just for the record, and we've got Paragraph 27 on the screen. But it says, in this specific embodiment, ADC 220 is a high-speed ADC so that the entire signal band -- so that's what's coming in, is everything the whole spectrum, right? So, coming into that ADC is everything there is. And it says, with n channels that can be converted. So, “with” means, in our view, includes. So, in their view --

JUDGE LANEY: Where are you reading that, "with channels"?

MR. MEEKER: It says, "with n channels can be converted." Do you see that? It's second from last line. "With n channels."

JUDGE LANEY: Oh. With n. Yeah. Okay. I --

MR. MEEKER: They're saying “with” means everything in the entire frequency band. They're saying it's like their disclosure, with -- where n would be everything. You'd convert everything from the very highest frequencies, all the way to the lowest frequencies. And we're saying n here means -- includes n channels. Like the whole frequency band includes the n channels that you're looking for. So, examples in -- we have Claim 21 in our patent where it says it can be at least one. So, n can be 1 in our patent. We have another example where n equals 35. So, we have examples where n is not everything in the entire frequency band, which I don't even know how many channels that are in there. I've never gone through and calculated. But it is a huge, huge number. And so, they're saying the with means RCN is every channel in the entire frequency band. And we're saying it just means including n television channels.

JUDGE LANEY: So, I'm going to tell you what I understand you to be saying. And tell me how you read me. I may be wrong or may be right.

MR. MEEKER: Okay.

JUDGE LANEY: What I ultimately hear you saying is the very fact that we have Cn, which is 1 through whatever number it is, those themselves are distinguishing. Because you're selecting a multiplier by -- in other words, you're selecting a multiplier for C1 or for C2 based on what particular channel you wanted to amplify in order for you to go through the low-pass and ultimately come out the way you want it to.

MR. MEEKER: Yes.

JUDGE LANEY: What you understand the patent owner to be saying is that their C1 -- their Cn means you have C1 through whatever number of

frequencies you have. It's not dictated or it doesn't have any correlation to be between what you're trying to amplify. It's just going to amplify everything.

MR. MEEKER: Correct. And -- but the accused patents -- I mean, the challenged patents actually have an example where n is everything. Like, it doesn't make sense to have n -- like, no one could afford to put the number of multipliers in there and then sell 100 million set top boxes, right? Like --

JUDGE LANEY: Right. But you're relying on in the specification of Zhang to support your position, the fact that in Paragraph 28 and 32, it talks about C1 to Cn as being selected -- as to be content channels that are selected or used by a subscriber --

MR. MEEKER: Right.

JUDGE LANEY: -- as being evidence and supportive of the fact that in Zhang, the C1 to Cn is itself selecting and choosing of a multiplier in order to get a particular channel or result out.

MR. MEEKER: Correct. And -- but, like, even under their construction, like if you assumed our n was every channel in the entire television frequency, we still win because we have an alternate argument. We say it is everything in the digital front-end. If you look at the claims. And what's coming out is only desired channels. So, the combination of our multiplier and our selector is only going to produce desired channels. So even if you believe that that with means every channel in the whole spectrum, which we contend it doesn't, but if you were to believe that we would still win because of the claim language. Not one claim claims that multiplier as performing the selection.

JUDGE LANEY: I get that. And then on the alternative that you just referenced, in that particular, you're saying that even if we get that, that's because you're also relying on 240 in that part, the combination of 230 and 240 --

MR. MEEKER: Correct.

JUDGE LANEY: -- for the alternative. And in the alternative, you're saying 240 is doing some of the leg work -- by even if you're saying it's everything, two 40 is doing some of the leg work up then down -- up to 280.

MR. MEEKER: Correct. Correct. And we have another example in our patent where we have Cn is 35, and then D1 to Dm is 20. So like, we're taking 35 channels and down converter them. But of those, we only see 20 to come out on Dm. And that's what goes to the user as the desired channel. So, we have a very specific embodiment that has that.

JUDGE WORMMEESTER: Counsel, I saw that alternative argument in the 438 case, which relates to the '206 patents. But can you point to me where your support in your petition for the -435 case, which relates to --

MR. MEEKER: Page 6.

JUDGE WORMMEESTER: Page 6? Yeah. Because I only saw an explanation regarding the C channels, not the D channels, for desired -- for desired channels.

MR. MEEKER: Okay. But Craig, I think she's asking specifically for the '866 patent. Is that correct, Your Honor? You want the support for the desired channels, 230 to 240, and '866 patent?

MR. KRONENTHAL: We made the argument. It's -- yes.

: Yeah. We already made that argument.

(Simultaneous speaking.)

JUDGE WORMMEESTER: Based on my recollection, I think Patent Owner agrees that that alternative argument is in the '206 patent. I didn't see it in the -- regarding the '866.

MR. MEEKER: Thank you for the question, Your Honor. If you look at the screen, or go to Slide 15, it shows that Petition Page 24 of the '866 patent, in the highlighted portion, it says, demultiplexer 230 and selector 240. So those are the combinations. Demultiplexer is the mixer filter. The selector 240 is the n-by-m, the serial-parallel interface. So, it says demultiplexer 230 and selector 240 output only user-desired channels. Either all or a subset of the user selected C channels and filter out all other channels from the digitized multichannel RMC.

JUDGE WORMMEESTER: And in that sentence, you are referring to the D channels?

MR. MEEKER: Yes. That what is output is D1 to Dm. Yes, Your Honor. So, we would either output all of C1 to Cn or the digital multi – I mean, the selector would output less than all of C1 to Cn. So instead of 35 channels on C1 to Cn, we would only output 20. And those 20 are undisputed as desired channels.

JUDGE LANEY: I know this is a minor detail but -- and with output – it would still output D1 to Dm. It's just, if it was all of them, it'll correspond to C1 to Cn, right? It's still --

MR. MEEKER: Correct.

JUDGE LANEY: I just --

MR. MEEKER: Correct. You could. Like D1 to Dm --

JUDGE WORMMEESTER: What would be the undesired --

MR. MEEKER: M could be set to n.

JUDGE WORMMEESTER: If m is set to n, what would be the undesired channels?

MR. MEEKER: In that case, they have an alternate definition of undesired channels in this patent. So one definition of undesired channels is the channels that come out that a user selects. But there's another definition of undesired channels in the '866 patent. And that says the channels in the noncontiguous space are undesired channels. So they have -- I counted nine different definitions of desired and undesired channels in this patent. But one of which is the '866 patent.

Okay. So the '866 patent, this is in the background section, but it's throughout the whole patent. I can show you multiple places where it is. It's at column 1, line 30, roughly. Where it's -- it started 29, in the '866 patent. In particular, the invention relates to a wideband receiver systems that are capable of receiving multiple desired television channels that extend over multiple noncontiguous portions of the broad frequency spectrum and grouping them into contiguous or substantially contiguous spectrums.

So in Figure 2 that's shown on the screen in Petitioner's demonstratives 28, it says it's going to pull the four desired channels. Those are, for example, the four VHF channels. And all of these other channels that are used for other purposes in the frequency spectrum that exist between different television channels, those are undesired channels and you're not going to tune those in C1 to Cn. So C1 to Cn is only going to pull the television channel frequencies, and not something you used for, for example, scientific instruments or military communications.

So then, it says it would regroup those four desired channels. So in that environment, one of the definitions of undesired channels in this patent

is the noncontiguous frequencies between actual television channels. So in that case, if C1 to Cn were selected and C1 to Cn were output, then the non-desired channels are these noncontiguous channels that aren't selected. And that meets one of their definitions of undesired channels.

JUDGE WORMMEESTER: But where is that in Zhang? Like, where are you mapping that to Zhang?

MR. MEEKER: Zhang has -- can you -- Zhang has the same disclosure on desired and undesired channels.

Can you bring up that portion of Zhang that's got the desired and undesired channels?

So Zhang says, look, we're only pulling television frequencies. We are -- oh. It's -- I'm sorry. It was on the screen. Craig had it up already. It was my -- so it's Petitioner slide 28, Exhibit 1001, the '362 patent. It's also in the 188. It's column 1, 29 to 31. And it says because the swath of channels is not contiguous, and channels here means television channels, this swath includes desired channels as well as undesired channels.

So the television channels are, in fact, things like VHF, UHF, cable TV channels, satellite channels. But in that spectrum, there are other channels dealing with military communications, other things. You're not going to select them in C1 to Cn. And that's how -- one example of how the challenged patents define undesired channels, is things that aren't television channels. What they've said are in noncontiguous portion of the spectrum.

JUDGE WORMMEESTER: I'm sorry. But where in your petition are you telling me that Zhang does that?

MR. MEEKER: Do we have that for the one here?

KRONENTHAL: Here's one for 362.

MR. MEEKER: So I've got the 362 on the screen and I'll get you one for the 188. But it says that this is petition at 32, where D1 to Dm include all of C1 to Cn. That's your question to us, right? What happens when D1 to Dm includes all of C1 to Cn? Digital channel demultiplexer 230 selects the desired channels and filters out the undesired channels, as described above. Exhibit 1002, paragraph 1. And then there's the alternative arguments. So above, they talk about filtering out the noncontiguous sections. And --

JUDGE WORMMEESTER: So C1 in Zhang and C2 and C3, those are all different sets of TV channels?

MR. MEEKER: Correct. Zhang only decodes C1 to Cn. Only television channels. Like, that's our view.

JUDGE WORMMEESTER: And then when you're filtering out. So, whatever's coming out of --

MR. MEEKER: So this has already met their -- one of their definitions of desired channels. So just the very fact that Zhang only decodes -- multiplies television channels, we've already met one of their definitions of casting desired channels and excluding undesired channels, the noncontiguous, non-television channels. That's one of the definitions in the challenged patents of undesired channels.

JUDGE WORMMEESTER: So does everything go in? Because I'm looking at Zhang Figure 3. So what is going -- and I'm on your Slide 4.

MR. MEEKER: Yes. So --

JUDGE WORMMEESTER: What's going into the purple circle in Zhang?

MR. MEEKER: In Zhang, the yellow is the entire frequency spectrum. But Zhang selectors, they're multipliers. The things in purple in Slide 4 of Petitioner's Exhibits. What comes out of that multiplier is a television channel. Now it could be VHL.

JUDGE WORMMEESTER: A set of them, right? Like a channel with multiple channels? Like --

MR. MEEKER: It could have multiple channels. And I haven't left your question, Judge Laney. I'm going to get back to that. But it does. It's either one channel or multiple channels on that one frequency band. Multiple television content channels. But it is one RF channel, like -- and their examples are VHF, UHF, cable TV channels, or satellite channels. So in Zhang, the only thing that goes to that multiplier, that multiplier is only sent to legitimate TV channels. And then it goes through the low-pass filter. Then into the selector. Now, out of that selector, it doesn't have to take everything you've down-converted in frequency. It can output, like, a subset or all of Cn. But it is already done the selection, as that term is defined, in one of the definitions of desired and undesired channels in the challenged patent, which is to select just the television channels.

JUDGE WORMMEESTER: Okay. So everything in yellow or gold is going into the mixer, right? That purple circle?

MR. MEEKER: Correct. That's the entire spectrum from --

JUDGE WORMMEESTER: Coming out of each purple circle is, like --

MR. MEEKER: One single television channel.

(Simultaneous speaking.)

JUDGE WORMMEESTER: -- so UHF or --

MR. MEEKER: It's Channel 2, Channel 4. It’s a single RF channel.

JUDGE WORMMEESTER: Okay.

MR. Meeker: Now, there's an additional complexity that I can get to in a minute. But for simplicity, it's one RF channel.

JUDGE WORMMEESTER: Okay. And then --

MR. MEEKER: Like Channel 5 VHF.

JUDGE WORMMEESTER: And then when it goes through the low-pass filter, then even less -- how many channels come out of that?

MR. MEEKER: So what the multiplier does, the multiplier shifts that whole frequency band down to where the low-pass filter can eliminate all those other channels. So those channels are still in at the multiplier, it’s just shifted down. Now I put them past the low-pass filter, and it cuts out everything but that one specific television channel. In that low-pass filter.

JUDGE WORMMEESTER: Okay. And then the selector in orange, we’ll put between Channel 2 and 4, or whatever that comes out to be?

MR. MEEKER: It'll put them out on serial interface or allow some parallel to go out. Now there is a complexity here that you alluded to. And -- well, have I answered your questions?

JUDGE WORMMEESTER: I think so. I think so. So it's like everything goes into the mixer in purple, then gets shifted down, and then maybe, like, a channel set or HBO or whatever comes out, right?

MR. MEEKER: Yep.

JUDGE WORMMEESTER: And then at the orange, that's where you can flip between the different --

MR. MEEKER: Correct. You can change the order, your time division multiplex serially, or you can output them parallel. It just gives you

a lot of flexibility on -- depending on what you're going to do with those channels.

JUDGE WORMMEESTER: Okay. And I think that makes sense.

JUDGE JURGOVAN: I have a question about this, as well. And that's, you know, when you're doing this digital multiplication in the purple circles, you're picking out certain frequencies. So -- and really eliminating the carrier at that frequency for that channel. So what's coming out of the purple circles is a six megahertz bandwidth that contains the information to the channel that is selected, correct?

MR. MEEKER: Well, Judge Jurgovan, I mean -- I know you're super technically savvy here, but I think it’s more than just the six megahertz. What comes out of that multiplier is going to be all of those frequencies, just downshifted. And now, that VHF is going to be centered on that low-pass filter. So those frequencies still exist after the multiplier. I'm multiplying that entire digital representation of that signal by a shift factor, and then I am going to filter out everything but that six megahertz bandwidth.

JUDGE JURGOVAN: Why does the channel selected by the NCO necessarily move to the bottom of the bandwidth, and all of the other channels are above it?

MR. MEEKER: I would just pick a frequency range to center it on. So, if I had this piece of paper, and I'm looking for just a six megahertz channel, like, my six megahertz channel is here, and this spectrum goes all the way to the ceiling and all the way to the floor, and I want this spectrum, but my low-pass filter is down here somewhere. I've got to shift this frequency down to be centered on my low-pass filter.

So when it goes through, now my bandwidth is only six megahertz. Before that, it's impossible to operate on, because I have all frequencies. That low-pass filter filters out all those harmonics, all those other channels, all that noise. It gets rid of it. And now I have a nice, clean six megahertz channel, which is why digital is so good. And all that stuff's gone. Now I get a digital representation out. It's six megahertz wide. Now I can time division multiplex that. I can put it out in parallel. That's basically how digital tuners work and have worked since the 1980s. Wideband digital tuners.

JUDGE JURGOVAN: Thank you.

MR. MEEKER: Okay.

JUDGE LANEY: Before you -- just because there are several times where you refer to, they define desired and undesired. They?

MR. MEEKER: The challenged patents. I'm sorry, Your Honor.

JUDGE LANEY: The challenged patent defines desired and undesired?

MR. MEEKER: Yes. There's no explicit definition.

JUDGE LANEY: Okay. That's what I'm --

MR. MEEKER: I’m sorry. So I apologize for that.

JUDGE LANEY: That's how it --

MR. MEEKER: You could read this patent all day long and not find an explicit definition of desired and undesired patents.

JUDGE LANEY: Right.

MR. MEEKER: Instead, they give nine specific examples of desired and undesired patents. And they are not self-consistent.

JUDGE LANEY: Okay. But the -- I just want to -- in the petition, you don't define desired. You say plain and ordinary meaning.

MR. MEEKER: I couldn't come up with one definition that would encompass all nine of their examples. Like, desired is just something you want, right? Like, if it's just something you want, it works, right? Like, or if it's a label. Like, desired versus undesired is, like, first and second. Like, either of those definitions work.

JUDGE LANEY: Well, desired is a point of distinction. Regardless of what the criteria is, it's a distinction --

MR. MEEKER: Yes. That's exactly right.

JUDGE LANEY: -- of one thing or another.

MR. MEEKER: Yes, that's right. And their criteria is --

(Simultaneous speaking.)

MR. MEEKER: -- it changes all throughout their spec.

JUDGE LANEY: Okay. And you're comfortable with that understanding?

MR. MEEKER: Yes. I am absolutely comfortable. And that's why we went with plain meaning. Because, otherwise, I would've had to give you a pick list of their nine examples. I wouldn't have been able to give you a clear set of words that would've encompassed all nine examples, because they have this embodiment. Most of their embodiments are going to, like, a television, where it's picture-in-picture PDR, et cetera. But at the back of their spec, they have this whole embodiment where they're repackaging the channels and then -- and getting rid of all the intermediate, you know, non-television channels, and then sending it downstream for use somewhere else.

Like, in order to accomplish that embodiment, desired is whatever you want to send downstream, not necessarily to an end user, right? So --

JUDGE LANEY: Right. But it's still setting some criteria.

MR. MEEKER: It's some criteria. It's desired.

JUDGE LANEY: Regardless of what that criteria is?

MR. MEEKER: Correct. And there's nine different examples of that criteria. And in Zhang, we set out each -- how we meet, you know, fall within those examples. And that's how we --

JUDGE LANEY: See, aren't the nine examples better used to demonstrate the fact of the breadth --

MR. MEEKER: Yes.

JUDGE LANEY: -- of what desired is?

MR. MEEKER: Yes. And that's how we came out at the end in the petition. We just said, plain meaning, desired, you kind of know what it is. Everybody knows what desired is. We're trying to get desired channels out of the digital front-end. And that's what Zhang does. And how it does it varies.

JUDGE LANEY: Okay.

MR. MEEKER: But it's not -- we didn't need to go there because it wasn't claimed.

Can you bring up, like, slide -- what is it, 11? No, no. The one that's got the plain language.

Yeah. So, like, it's not really necessary to define it beyond that, because they don't have any specific circuitry that has this without limitation. So the without limitation in the 866, there's no hardware at all associated with it. And then the, like -- there is no without limitation --

JUDGE LANEY: Well --

MR. MEEKER: -- in the 866 at all. It's -- or except for claims, you know, 1C and the related claims.

JUDGE LANEY: Well, let's -- so, without providing any of the plurality of undesired channels, right? So whenever you set your criteria --

MR. MEEKER: Yes.

JUDGE LANEY: -- you just -- I mean, in order to establish that, you just have to establish that whatever that criteria is, let's say blue --

MR. MEEKER: We've met it.

JUDGE LANEY: -- so long as what you're getting doesn't include blue.

MR. MEEKER: That's exactly right.

JUDGE LANEY: Okay.

MR. MEEKER: And there's no hardware that's required. It doesn't even require it to be the digital hardware here.

JUDGE LANEY: Okay. Other than the hardware that's making the selection has to be able to distinguish between something that's blue and not blue?

MR. MEEKER: Yes. That's exactly right.

JUDGE LANEY: Okay.

MR. MEEKER: In the 266, they do have a another negative limitation. But again, it's not limited to any particular hardware. It's just -- it works with Zhang. And, in fact, the hardware's identical between Zhang and their patent. And the output is the same, right? We're trying to get television channels to a user from a broad spectrum. We're using exactly the same hardware. Like, even though their selector, their n-by-m, the D1 to

Dm isn't shown, they still got to have a way to get all those parallel channels off to a single serial input. So they're going to have at least an n-by-1 switch. They have to. So, you asked another question, and let me go back to that, about the sub channels.

Can you take me back to the content channels? Take me back to that slide where Judge Laney asked that question. It was paragraph 28 and then the content channels after that.

MR. KRONENTHAL: 28's at the bottom?

MR. MEEKER: 28's at the bottom. Okay. So RF channels C1 to Cn contain --

JUDGE WORMMEESTER: I'm sorry, what slide are you on?

MR. MEEKER: I'm sorry. We're on Petitioner's Slide 24. And apologies, you can't see it. There is a way to configure it so remote judges can see. But it's hard. It is Petitioner's Slide 24.

Are you there, Judge?

JUDGE WORMMEESTER: Yes. Thank you.

MR. MEEKER: Okay. In the bottom left is paragraph 28. And it says C1 to Cn contain content channels that are selected or used by a subscriber. So a content channel is potentially different than an RF channel. So you do have content channels that take all six megahertz. But at this time, they started to have -- MPEG was coming out. It was starting to be big. MPEG allowed you to pack more than one channel in that six megahertz. At the time, they were doing six channels and they had the ability to do 12 and 18. Zhang says up to eight -- it says 18 channels is an example of how many content channels can be on that one six megahertz bandwidth.

So, just in the old days, with analog, it took all six megahertz to transmit a television signal. Then they went to digital. And at first, it took six megahertz to do that television signal. But within a very short time, they were able to pack six television channels in the same six megahertz. And then they went to 12, and then 18 and 24. And I don't know what they're up to today. But the content channels in Zhang recognize this MPEG compression algorithm that allows more than one content channel on a physical six megahertz bandwidth. And that's why you have cable televisions today that have an infinite number of channels.

JUDGE LANEY: So taking what you said, then, where we have C1 to Cn contain content channels. So how does that -- so then you have your six megahertz, which let's say at this time, I think you said would be up to 18?

MR. MEEKER: Correct. Content channels.

JUDGE LANEY: Content. That's what -- 18 content channels. And so C -- within that six -- so we have that multiplier, which is going to isolate the six megahertz that has 18 channels on it.

MR. MEEKER: Correct. Yes.

JUDGE LANEY: And that's going to shift it however it shifts it, in order for that low-pass to get rid of everything, so now we've got this nice, crisp, clean six megahertz that has these 18 channels.

MR. MEEKER: Yes.

JUDGE LANEY: And that's going to be eight -- that's going to be C1?

MR. MEEKER: Correct.

JUDGE LANEY: Okay. And just for my -- let's say on that, you have HBO East, HBO West, HBO Central.

MR. MEEKER: Okay.

JUDGE LANEY: And then the selector is going to then take those and put it on a serial court, but it can choose whether to just do HBO West?

MR. MEEKER: Correct.

JUDGE LANEY: Or it can choose just to do HBO East?

MR. MEEKER: Correct. But it -- like, it would probably put together all the HBO channels for one of those Dm outputs. So when you're switching channels between HBO, it changes instantly, because it all --

JUDGE LANEY: So it's going to make them all available. You're talking practically speaking, it would probably --

MR. MEEKER: Correct. It's just the algorithm they're going to come up with for where they switch them. They could switch them anywhere, but they don't do it randomly. They do it to give you the best user experience.

JUDGE LANEY: But this multiplier -- just so we're clear, this multiplier, within that six megahertz and the 18 channels that are on it, it can't distinguish between --

MR. MEEKER: It cannot.

JUDGE LANEY: -- the content channels --

MR. MEEKER: It's got to go through the demodulator, which is on the other side of all this, is a demodulator. So those -- C1 to Cn or D1 to Dm go into a demodulator, and that demodulates all of those channels, decodes them, puts them through the whole MPEG algorithm. And what comes out is an HDMI digital stream to your video.

JUDGE LANEY: But just to the point where you have the six megahertz that has these 18 content channels, there would be another six megahertz bandwidth that would have a different set of --

MR. MEEKER: Correct. And it could have either one content channel or 18 more.

JUDGE LANEY: No, I get that. I get that.

MR. MEEKER: Yeah.

JUDGE LANEY: I'm not so much worried of how many content channels are on it. My point is, you have a content channel bundle and the six megahertz, and then you have a different content channel bundle, whether it's one or 18, whatever. But these are different -- carrying different channels?

MR. MEEKER: Correct.

JUDGE LANEY: These -- and --

MR. MEEKER: Different RF channels. Absolutely.

JUDGE LANEY: -- and then the modify -- that multiplier. So, I mean regardless, the point being, as I understand, and maybe Patent Owner will dispute this, but there's no limitation within the claims that even if there's 18 content channels on the six Megahertz and it can't distinguish between those 18, there's still another set of content channels on a different one that has a different set of 18, and it is distinguishing between C1 and C2 as far as the 18 channels on C1 and the 18 channels on C2.

MR. MEEKER: Correct.

JUDGE LANEY: Okay.

MR. MEEKER: Absolutely. So let's see. There was -- so I think I covered the questions. Like, that was basically my case-in-chief, to answer all your questions.

JUDGE WORMMEESTER: Well --

MR. MEEKER: So --

JUDGE WORMMEESTER: -- can we talk about --

MR. MEEKER: Okay.

JUDGE WORMMEESTER: Sorry. In -- I forget which case it is, maybe the '866 patent --

MR. MEEKER: Okay.

JUDGE WORMMEESTER: -- raises a concurrently, or concurrent plain language.

MR. MEEKER: Sure.

JUDGE WORMMEESTER: And I think --

MR. MEEKER: It's on Petitioner's Slide 42, Your Honor.

JUDGE WORMMEESTER: Okay, thanks.

MR. MEEKER: Lower left-hand corner. It's concurrently, I think, is what you're looking for.

JUDGE WORMMEESTER: Yeah.

MR. MEEKER: Okay. So it's a digital front-end, and so the digital front-end is basically the purple, green, and orange that's shown in the upper-left corner of Petitioner's Slide 42. And it says the digital front-end configured to concurrently select and provide each of a plurality of desired channels via a serial interface, without providing any of the plurality of undesired channels. So this will select and provide D1 to Dm, the desired

channels. So the digital front-end outputs D1 to Dm, and that's what's selected and provided.

So we have two different reads in our petition for this. One is C1 to Cn, so it selects and provides desired channels, only television channels, not the noncontiguous channels in between. And then out of D1 to Dm, can be C1 to Cn, or it could be a subset. And the example in Zhang is 35 C1 to Cn and only 20 D1 to Dm. But it says it can be -- you know, it can be some or all. It says one or more, and n can be set to m, so it could output C1 to Cn. Then, the undesired channels would be the noncontiguous frequencies, things that aren't television channels. Or, in other places, they define the desired channels as what's actually output and used, and that would be D1 to Dm. So we did it in two different ways because they have so many definitions, we had multiple reads on what was a desired and what was an undesired channel.

JUDGE WORMMEESTER: How -- what is the word concurrently play into that, though?

MR. MEEKER: So it's concurrent in that C1, C2, Cn, these are all digital -- these are all streams of data coming through. So it's digital data, and it's coming through as a stream, and these streams are all operating simultaneously. So when you watch really any program today, it's called streaming media. So it's a continuous stream of digital 1s and 0s that come out, and that digital stream runs continuously. It's why they call them streaming services. They're basically -- HDTP delivers streaming media, and so all of these come out concurrently, and then you're going to provide some of that to the end user.

So, typically, you're not going to provide 35 channels to the end user. Like, in most instances, you're going to provide a subset, unless you're super aggressive in what you're watching. Like, for the most part, most users are going to get a couple of channels at the same time. Like, they may watch one, record another. They might have picture-in-picture. They might watch a multi-channel screen, but all those are coming through concurrently, and they're all going to be provided downstream to that end user. And he might have a television hooked out there or a set top box or computers or multiple things in his home, each one watching something.

JUDGE JURGOVAN: Mr. Meeker, does Zhang disclose eliminating noncontiguous frequencies?

MR. MEEKER: It discloses that there are television frequencies, and between those television frequencies are noncontiguous frequencies. But in Zhang, it only selects television channels, like the frequencies that have a television channel. So our answer is yes, it does select not taking those noncontiguous frequencies. The non-television frequencies. Everything in Zhang is only -- C1 to Cn are television channels. Or they're media content. It says they're basically those television channels, and Zhang doesn't talk about -- it never selects those channels that are in between.

So we would say it's implicit or inherent in Zhang, but we also have an obviousness. Like, if you don't think it's anticipated in the 362, it's certainly obvious. Like, if you read Zhang, we're only taking television channels. We're not taking military channels or all these other channels that are out there. Zhang talks about taking just the television content channels. It says satellite, terrestrial, or cable. Those are the three categories of

channel that Zhang decodes in its C1 to Cn or D1 to Dm. It never takes another channel.

JUDGE LANEY: Well, what's a hallmark of a contiguous versus a noncontiguous channel?

MR. MEEKER: So in the UHF range, for example, there were, at one time, like, a whole series of channels that are together, and they're one right after the other. There's nothing in between them. Since like the '80s, they've reallocated big chunks of UHF to other uses. So now UHF has gaps in them with noncontiguous channels, I think reallocated to your cell phone. I'm not sure where they're reallocated. I don't want to testify to that, but there were reallocations of portions of that bandwidth and a huge fight over where they went to. But portions of those UHF channels are all contiguous, one right after the other. Other portions have big gaps. In the VHF, there's more gaps down there.

JUDGE LANEY: And when you say gaps, meaning there's -- whatever it's used for, you have something used for one thing, and then it's used for something different in the next, and then in the next it's used for something different.

Is that what you mean?

MR. MEEKER: Correct. It's like frequencies have, like, properties, and some people want this very specific property at this frequency. It's how far it'll broadcast, how much data it'll take.

JUDGE LANEY: Right.

MR. MEEKER: And so they're fighting over trying to get these key frequencies. No one's watching UHF anymore, or VHF, for that matter. We're all streaming today, so that stuff is being reallocated. But even the

VHF, at the time, like, one channel, everybody thought was good. Then we needed two channels, and now -- then they needed 13 channels. So over time, like, they were adding channels, but there's gaps in between them because the military said I need a channel for radar, or I need a channel for police radio, or I need a channel for Citizens Band radio. So they had little gaps in there, and you're only taking the TV channels. You're not taking all these gaps.

And, like, in the old days, cable television was an antenna they put on top of a mountain, and it came down, they collected all these signals over the air, they came down, and then they processed on them with tuners. So a lot of the cable TV's, you know, infrastructure 25 years ago, had those bands in them. Like, they just took that stuff they pulled off the air, and they sent it down to the end user so they could still hook their television up to it without a decoder box, and it would work. Like, nobody here but me is probably old enough to remember those old tuners, but, like, that's how it started. And then they said, well, I'm going to add cable television channels on top of it, and then, I'm going to add satellite channels. And then they said, well, wait. I don't need to take this stuff off the air. I can get rid of all that. I can use the entire bandwidth, because I've got a cable system.

And so it's been a process, but, like, at the time of this, they're saying, look, we're going to pull that signal, and we're going to get rid of all that junk, and we're going to bring in just the television channels. And that's what Zhang says.

JUDGE LANEY: And are you -- is the Petitioner's perspective, for example, when it says RF channels C1 to Cn contain content channels that

are selected or used by a subscriber, that necessarily is taking just contiguous and not including the noncontiguous?

MR. MEEKER: Correct.

JUDGE LANEY: Because all we're talking about is --

MR. MEEKER: We're taking the television channels, all of the channels in Zhang are selected or used by a subscriber. So we're taking television channels. We're not taking all this other stuff, which is in noncontiguous space, and that's how Zhang meets it under one of their definitions. They have another definition where, you know, desired channels is just the number of mixers.

JUDGE LANEY: Again, you're saying definition, but you -- what you really mean is another example.

MR. MEEKER: Yeah. I'm not -- thank you, Your Honor.

JUDGE LANEY: I just want to --

MR. MEEKER: You're absolutely right. It was a much more precise way of saying it. I didn't mean a definition. There is no definition. It's just another example.

JUDGE LANEY: Okay.

MR. MEEKER: And we tried to live within those examples. That's the only way we knew to do this, because some of them are self-contradictory.

JUDGE LANEY: Okay.

MR. MEEKER: And so that's how we approached this. I think -- do you have any other questions? Because I think we've really covered all my points. I need to check with my co-counsel here.

MR. CUVIELLO: Can we save it for rebuttal?

MR. MEEKER: Okay. I think we'll save the rest for rebuttal and then just deal with any points that you have, unless there's any further questions.

JUDGE WORMMEESTER: None from me.

MR. MEEKER: All right. Thank you, Your Honors.

JUDGE LANEY: Judge Jurgovan, were you going to speak? Are you --

JUDGE JURGOVAN: I was just going to say, none from me.

JUDGE LANEY: Okay. All right. Then you have 14 minutes I'll hand back to your rebuttal.

MR. MEEKER: Thank you, Your Honor.

JUDGE LANEY: So you have 34 now for rebuttal -- I mean, 44. Question for everybody. We've been going for a while, we've got a while to go. Want to make sure we're fresh. Is there -- do people want to take a two-minute bathroom break or something?

MR. MEEKER: A water break would be good.

JUDGE LANEY: Okay. Well then, it is now 10:24. Let's come back at, let's say, 10:30, okay?

(Whereupon, the above-entitled matter went off the record at 10:24 a.m. and resumed at 10:31 a.m.)

JUDGE LANEY: All right. We are back on the record.

Patent Owner, you may proceed.

MR. HENDIFAR: Thank you, Your Honor.

So Your Honors heard a lot of testimony, for lack of a better term, from my friend Mr. Meeker about what is a desired channel, what is an undesired channel, what is a content channel, what is an RF channel, Wi-Fi frequencies. Everything you heard is new testimony, and the reason it's new

testimony is that if they had put those in their papers, they would not be able to support them. And I will show why.

Petitioner will not be able to provide a mapping to Your Honors that says, this is what desired channel means. These are desired channels in Zhang. This is why they are desired channels, and this is why these desired channels meet all the claim protections. We will show they will not be able to do that. But in light of Your Honors' questions, I'm going to change the order on these slides a little bit. I'm going to start with Slide No. 82 on Patent Owner's deck.

So in order for a channel to be transmitted via antenna, satellite, cable, and whatnot, you cannot transmit that channel at its baseline frequency, which is its native frequency, for lack of a better term. To do that, you have to up-convert that channel to a transmission or a frequency. So as shown in Slide No. 82, on the left-hand side, you have the baseline signal, so your Fox News channel that you all pointed out. But you are not going to be able to transmit that channel in its native form. You have to modulate it, and you have to put it on a carrier frequency, up-convert it to another frequency, at a much higher frequency, and then transmit that higher frequency. It's just the nature of the frequency. You are not able to transmit it at its native frequency.

Then what happens, Slide No. 83 of Patent Owner, when your receiver system, be it satellite, cable, or whatever it is receives that signal on the right-hand side of Slide No. 83, you have to then do the reverse of what was done. You have to down-convert that Fox News channel to the baseline frequencies so that you can process it. Now, how is this down-conversion done? And that goes to a lot of questions, Your Honor, as to others that

were already asked. So I'm going to go to Slide 27 of Patent Owner. This is a discussion we will get to in the context of Zhang, but it does demonstrate how that frequency of Zhang's demultiplexer works, and it shows how the channels are down-converted.

So you have a digitized signal. So when you have, let's say, a cable TV, you have received a set of frequency. And I want to point out you are not going to receive military frequency and Wi-Fi frequency and some circuit frequency on your cable. It's a defined frequency that your cable or your satellite is set to receive. It's not a medium -- frequencies of some random, circuit frequencies.

JUDGE LANEY: Will it be multiple frequencies?

MR. HENDIFAR: It will be a range of frequencies, so let's say from 1.5 gigahertz to 1.8 gigahertz, just throwing a number. Yes, it will be a range of frequencies, if that's what you mean. So what Zhang does -- and in terms of the circuit elements that Zhang uses, there is some similarity. So how these circuit elements operate is somewhat similar to the patent. The purpose for which they are used is different, but the explanation here would provide some technical background to answer Your Honor's question.

So in Zhang, you want to -- you can get that range of frequencies from 1.5 to 1.8. Let's say that range of frequencies has a hundred channels. And I want to point out, Zhang is from 2001. So you are not going to have 1,000, a million channels, so it was a limited range of channels that Zhang --

JUDGE WORMMEESTER: I'm sorry, Counsel. Can you come closer to your mic? I'm having a hard time hearing you.

MR. HENDIFAR: I apologize. Is this better?

JUDGE WORMMEESTER: Yes. Thank you.

MR. HENDIFAR: Thank you.

So I also want to highlight that Zhang is from 2001, so it's not a time where you would have a million channels coming in. It would be impossible as a physical matter to expect all channels, but we -- we'll get to that momentarily. But let's assume your frequency range of 1.5 to 1.8 gigahertz come in, and it's digitized. That's the yellow signal on Slide Number 27, which goes into Zhang's demodulators.

Now, Zhang wants to extract, and we will show all the channels that is seen about whether Zhang extracts all the channels or a subset of the channels. Our conception is that if all the channels -- so Zhang is going to extract channel C1. The way it does that, it has one chain of these elements for each of those channels you want.

JUDGE LANEY: Just on this point, so we have the 1.5 to 1.8. Is it your contention that within that frequency range, 1.5 to 1.8, there is only television channels or content channels?

MR. HENDIFAR: Sure. There has been no testimony in the record. You've added that question. I need some further --

JUDGE LANEY: Well, they're saying that says C1 to Cn is just content channels.

MR. HENDIFAR: Sure. I'll get to that paragraph. I'm sorry.

JUDGE LANEY: I mean, it's -- I -- so I'm asking you as a representative here, is that -- you bring that up the 1.5 to 1.8, I'm saying with that -- okay. I'm accepting you're saying it's not military, not other things, but would it just be content channels?

MR. HENDIFAR: In the example that Zhang has provided, yes.

JUDGE LANEY: Say it again.

MR. HENDIFAR: In the example that Zhang has provided, yes.

JUDGE LANEY: Okay.

MR. HENDIFAR: So if you were to look at -- I believe it was Paragraph 42 that my colleague pointed out, where the 35 channels that come in and the 20 channels that are selected, if you add up the frequencies to the channel of value that comes in, the numbers of channel, in the examples that Zhang provides, what comes in is only content channels.

So does that answer your question?

JUDGE LANEY: Yes, of course.

MR. HENDIFAR: But even if there are only content channels, then there are guard bands that are actually from that because when you have content channels in the frequency range of, let's say, 1.8, and even if all you have are content channels, they're not adjacent. There's always some guard bands there that are control channels that are different.

Also, I want to point out, the fact that there may be empty frequency ranges, that doesn't mean that they're necessary channels.

JUDGE LANEY: That doesn't necessarily mean what?

MR. HENDIFAR: That they necessarily are RF channels.

JUDGE LANEY: Okay.

MR. HENDIFAR: So for example, as I mentioned, if you have two content channels that are next to each other, there will still be a gap between them as a guard band. That's how it's done normally. Nobody calls that guard band a channel. So the fact that there may be discontinuity in that content channel doesn't mean that what's in between them is necessarily an RF channel or undesirable channel.

JUDGE LANEY: And is that guard band -- is that just kind of a buffer so that you can keep these for -- distinguished from each other?

MR. HENDIFAR: Right. And that's an example of frequency that is blank, but it's not a channel. But we have expert testimony on other aspects as well. So going back to Slide 27 of Patent Owner's deck, so the way Zhang extracts channels C1 through Cn is that it has one chain of circuit elements for each of those channels.

Now, going to Slide 28, each of those chains that Zhang uses to extract one of Channels C1 to Cn has three circuit elements. It has an alternator, which is shown in purple. It has a multiplier, which is shown in yellow, and it has the low-pass filter, which is shown. Now, you would note that the number of each of these elements is equal to the number of channels that are extracted, n, which confirms that n channels are extracted. Each of these chains is to extract one of the channels.

JUDGE LANEY: Where do you get that statement from?

MR. HENDIFAR: The number n.

JUDGE LANEY: Are you saying because you have just -- so you're looking at --

MR. HENDIFAR: The Zhang paragraph --

JUDGE LANEY: Paragraph 30?

MR. HENDIFAR: Correct.

JUDGE LANEY: It says --

MR. HENDIFAR: I can read it.

JUDGE LANEY: The digital tuner 300 includes a bank of n numeric control oscillators, complex multipliers, and low-pass filters.

But what you just said was, you notice the n is the same as what's -- I think what you said is the RF that's coming in?

MR. HENDIFAR: Look, n is equal to the number of channels, C1 to Cn. So n means the number of channels in that frequency band, correct.

JUDGE LANEY: Okay. But can more channels be coming into the 320(1), 320(2), 320(n)?

MR. HENDIFAR: Hypothetically, you could have a system, which is what the inventions are, that you -- a lot of times will come in. And you only take out your desired channels so that causes -- that's the invention. What Zhang describes -- and again, I'll go into that, I wanted to give a bit of background first and then get to Your Honor's question. What Zhang does however is it extracts all the channels that come in. So hypothetically, it's possible, but that's not what Zhang does.

JUDGE LANEY: And that's where -- I think that's where the rubber is meeting the road. Let me get -- before we get into that deep, I guess there was some representations I want to see if you agree with. One, do you agree that as far as the IPR 2024-00432, which relates to the '362 patent, that the dispositive issue of the petition is whether or not Petitioner has established that the prior art discloses, in combination with the other elements, but the critical element being select said plurality of desired television channels from said digitized plurality of frequencies?

MR. HENDIFAR: In part. And I will address that one right now. So I'm on Slide No. 4. We have the full claim language of Claim One. So you will note from the first limitation, you have a mixer module that down-converts a plurality of quote, desired television channels and a plurality of

undesired television channels. I'm highlighting this because Your Honors asked Mr. Meeker, so what is a desired channel?

And he said, well, Zhang extracts all the content channels and all the military and Wi-Fi, and everything else is undesired channels. That would not work because the claim says your frequencies that come in has a plurality of desired television channels and a plurality of undesired television channels. And then you select desired channels. So if it is, in fact, the case that Zhang extracts all television channels in Channels C1 to Cn, then what is undesired channel?

JUDGE LANEY: Well, what is -- I mean, look, this is your patent. What is an undesired channel?

MR. HENDIFAR: Thank you for asking. And we have an explanation of that, and I don't have a slide for it, but I have some slides. But we have an explanation of that in our papers. So I referenced it, 432 papers, a similar discussion appears to the other ones.

So if You Honor look, for instance, we have at the '362 patent 432, Certified Pages 6 and 7. We go in depth about what the patent in the background explains, what was one of the intents of the invention. What the patent explains was, in the prior art, what you would do is --

JUDGE LANEY: Real quick, before you go there, it would be helpful for me --

MR. HENDIFAR: To define --

JUDGE LANEY: Before we go into this, I want to know what the target is. So I -- and I don't -- first off, it'd be helpful if you pointed to me within where you pointed in the -- in your Patent Owner response, in particular where you've provided a particular definition for desired or

undesired. But even setting that aside, it is very helpful for me to know what the target is.

What are you saying desired or undesired means? Then I'm going to give you all the opportunity. You got lots of time to explain how you get there. I just need to know what the target is for that, okay?

MR. HENDIFAR: I'd be happy to. So in the context of the patent, desired channel is used to mean channels that are ultimately sent to demodulators.

JUDGE LANEY: Okay.

MR. HENDIFAR: And the purpose of that is, to watch the Fox News channel that Your Honor pointed out, you have to demodulate it. So if the user wants to watch the channel, if the user wants to DVR the channel, if the user wants to have picture-in-picture, to do anything with that channel that is watching or recording, you have to demodulate it. And desired channel, in the context of the patent, refers to those channels that are demodulated.

Now, there are – I can't define the universe of all these instances. You may have an airport system where a random channel generator just switches channels. You may have a user that specifically selects the channel. So there may be different instances of who desires it, whether it's a user or AI system or a random channel generator in an airport. But the common denominator of all of those, the tests that you can use is that desired channels are the ones that are sent to demodulators because you need to do that for the channel to be watched, recorded, or anything else.

JUDGE LANEY: What would be wrong with the working definitions of "desired" as simply being distinguishing between one or another channel based on a criteria, whatever the criteria?

MR. HENDIFAR: Sure. Zhang doesn't articulate the criteria for Channels C1 to Cn, so we don't have that occasion --

JUDGE LANEY: I'm not worried about Zhang right now. I'm wanting to know what the target is, so I want to know what the meaning is.

So what's wrong with that proposed definition? What if I use that as my working definition in writing the decision?

MR. HENDIFAR: Sure.

JUDGE LANEY: Why is that wrong? Why is it right?

MR. HENDIFAR: So criteria -- I guess it depends on what the criteria is. I think we articulate the criteria as to be sent to the demodulator, but in the context of receivers, if the criteria -- I don't believe it would be, the channel has to be the sport channel. That's not how you would use a receiver. So if, for instance, Zhang would just separate all channels, the sport channels and the news channels, I don't think that would be selecting desired channels. That would just be categorizing all the channels, and the user would select what channel it wants to watch.

So I believe it depends what the criteria is. And, obviously, claim terms are the context of the specification. If Your Honors review the specification, which, other words, I -- I would go back to that momentarily, the patent uses it to be channels that are sent to demodulators. My colleague pointed that there are 90 definitions --

JUDGE LANEY: But there could be any. Well, what I mean, there's no limitation on -- I think Petitioner's point, with all the different examples, and not all of them completely consistent with one another, I think their point with that is, okay, I don't even think they would dispute or have an issue with it going to the demodulator. I think their point is, the criteria can

be just about anything that the designer wants to use as a criteria for distinguishing between one channel and another that is going to go to the demodulator.

MR. HENDIFAR: Thank you. So obviously, none of that 90 definitions on our list inconsistency available papers so that we couldn't address them, but it is our contention that there is no inconsistency in the patents used of what desired channel --

JUDGE LANEY: I'm not talking -- we're talking about -- you've just provided me, and I appreciate it, an understandable working definition of "desired."

As I understand, Patent Owner's position with that is, desired is the channel that's allowed to go to the demodulator, right? That's picked, sent to --

MR. HENDIFAR: Sent to -- allowed to --

(Simultaneous speaking.)

JUDGE LANEY: -- to the modulator. And I don't necessarily understand Petitioner to be arguing that that is wrong. I think the point of Petitioner is that even with that definition, that allows the criteria that's used to decide what channels are going to be sent to the modulator. There is -- it's very broad. There is no limitation, really, on what your criteria may be in order to decide what channel is going to go to the modulator.

Do you have any issue with that?

MR. HENDIFAR: I do. So first, Petitioner does have the burden to explain what those terms mean. There's no analysis in the petition, or the reply, on what desired means. Everything you heard now, it can be a

criteria, not -- different criteria. We don't care what the criteria is. None of that was analyzed.

JUDGE LANEY: Okay. "Desired" is a very common word. I don't want to get into the -- to criticizing them for not -- I mean, they're stuck with plain and ordinary meaning, okay? "Desired" is a fairly plain and ordinary word as -- and, frankly, "desire," in an ordinary, plain sense, is something you want. And --

MR. HENDIFAR: Who wants?

JUDGE LANEY: Okay. Anyone. There is no limitation on it who, your claims, and I -- and so as far as we're going to plain and ordinary meaning of the claims, your claims do not identify a particular vantage point for "desired." It just simply says "desired." And we know within the context of a wide-band receiver system, okay? But we also know what sets that desire is, we have users, we have designers, we have real-world applications. There's lots of different things in this context that could influence a desire, a want. And I do not see anything that's distinguishing, within the claims, on what limits that boundary of want. I see nothing in -- Patent Owner, I don't think, has pointed me to anything that would narrow or require a specific thing to guide the want.

I hear you now suggesting that maybe that would be the demodulator in some sense. And the whole point of me just going to this is, I think it would be more beneficial, instead of saying Patent Owner -- I mean, Petitioner's burden on this particular issue -- I recognize whose burden it is. But on this particular issue, I think it would be more helpful for you to get me where you are, as far as the understanding, than standing on saying, Petitioner didn't do their job.

MR. HENDIFAR: So if you have a receiver system that receives desired and undesired channel, in the context of those systems, "desired" is not from the perspective of a filter within that receiver that has to filter channels. A receiver that receives desired and undesired channels is from the perspective of the user of that receiver, being who is watching in the airport TV and for that user to use that channel in whatever way. That channel has to be demodulated. That's why we use it as the test point.

But the vantage point, I respectfully disagree with Your Honor that it's just unbounded to anything, one filter within a receiver. And I also want to point out in the last elements the claim makes here, that those desired channels are those that are sent to demodulators. So the claim itself represented --

JUDGE LANEY: Wait. Say that last thing.

MR. HENDIFAR: Sure. The last limitation of Claim 1 and the --

JUDGE LANEY: Can you read limitation into the record that you're relying on?

MR. HENDIFAR: Sure. It says, "Output said selected plurality of television channels." Now, said refers to the ones that were selected, desired channels in the prior limitation. Output said selected plurality of desired channels to a demodulator as a digital data stream.

JUDGE LANEY: But doesn't that somewhat undermine your argument? Because what that's saying is, you have selection being done. And whatever that selection is, the last element is telling you, we're going to send this to the demodulator.

In other words, if I were to adopt the definition as you propose, whereas desired is something going to the demodulator, why do I even need

that last element? Because according to what you're suggesting, the very meaning in the context of this patent, a desire necessarily means this thing is going to go to the demodulator.

MR. HENDIFAR: And thank you for asking that. It's not our contention that you need to construe it because you only need to construe terms to the extent there is a dispute. And we believe we will show that Zhang does not select channels C1 to Cn, so there is no discrimination in channels C1 to Cn being extracted. So this is not a case where channels C1 through Cn, but a subset of AP channel, and the fight is about, what is that character -- criteria that is used to select those channels.

So this is not a case where you need to reach the point of, how do you make the selection? This is a case that our view is, and it is supported by Zhang itself, by Zhang's own prosecution history, and by Petitioner's expert, is that Zhang channels C1 to Cn are basically not selected. So this is not a case where there's a selection, and then you have a fight about what the criteria was. This is a case that we'll show Zhang doesn't select channels C1 through Cn. It blindly, indiscriminately extracts all the channels in equal signal, and then lets the selector, which is called the selector, lets the selector select the desired channels.

JUDGE LANEY: Okay. And I think what got us down this path is my original question, which is -- because as I understood it, that claim element, at least for the '362 patent, namely, the element selects said plurality of desired television channels from said digitized plurality of frequencies. I understand that to be the single dispositive issue of the IPR2024-00432 petition. I think, when I asked you if you agreed that was a dispositive issue, you then brought me back, and you said, in part. And

that's what led us to this desired and undesired. I still don't understand how that is not the dispositive issue and that it's just part of the dispositive issue.

MR. HENDIFAR: Understood. Because the reason Petitioners -- one of the reasons Petitioners can't show the select limitation that Your Honor pointed to is because their mappings contradict either the next half of limitation or the prior limitation requiring the channels to be both desired TV channels or undesired TV channels. So you are correct insofar as what they failed to show is the select limitation.

But one of the reasons they failed to show that is that their mapping, depending on which they use -- and the reason they have all this all different mappings is because no one mapping – because Zhang is different. But one of the reasons they failed to show the select limitation is that they contradict -- depending on what mapping they use, they contradict. Either they have the limitation or the prior limitation.

JUDGE LANEY: Okay. So let's bring up that -- was it Figure 4 of -- let me try to get it out over here. Page 28 is fine, of your demonstratives.

So I understand at least one of their arguments, but an argument we spent some time on is them saying that even at -- where you have the X on Page -- on Demonstrative 28, which is Figure 3 of Zhang, you have 321, which is the multiplier, right?

MR. HENDIFAR: Correct.

JUDGE LANEY: And I understand Petitioner's perspective – position to be, that is a selection because it is multiplying a -- in order to isolate that particular frequency of channels, that has channels. And it's separating that from a different frequency that may have a different set of channels, and then the next one is separating, and so on and so on the same way. But in

each instance, you are making a distinction between one set of frequencies/channels and another.

How is that not a selection of desired channels from Patent Owner's perspective?

MR. HENDIFAR: Thank you. So I'm going to give you a visual, and then I'll go back to the slides, if I may point you to Slide 52 of Patent Owner's deck. So on the left-hand side, that's what Zhang's demultiplexer 230 does. All the 20 channels come in. Basically, it's a demultiplexer. That's the term. It just demultiplexes 20 channels. It separates out the 20 channels.

Now, the way it separates out 20 channels is that it has 20 circuits. Each of them separates out one of those 20 channels. But that circuitry overall is not selecting anything. It is blindly demultiplexing all of the 20 channels. The fact that to do that, you need to have 20 circuit elements each one demultiplexes one of those 20 channels, doesn't mean that your demultiplexer is selecting. Ultimately, the demultiplexer is still demultiplexing all 20 channels.

JUDGE LANEY: Why is that the right understanding? I get that. I appreciate -- and that is one of the things I think is the strength, right? As far as the Patent Owner's argument, I agree there has to be some selection. And as I understand Patent Owner's argument, what you're saying is, look, everything that's coming in --

MR. HENDIFAR: Is going out.

JUDGE LANEY: Is going out. That's what I understand. So there's no -- there, in fact, is no selection between one and the other. I understand that, but I need some help because it doesn't seem -- it seems like Zhang has

some persuasive value to support Petitioner's perspective. And in particular, I pointed out before, which is Paragraphs 28 and 32.

And where am I -- where do you feel like I'm maybe going astray on that? Because I do -- when it says, "RF channel C1 to Cn contain content channels that are selected or used by a subscriber," that does not comport or doesn't seem to support Patent Owner's argument that this is just some blind, dumb, what's in is out. It says, selected or used by subscriber. That indicates some sort of selection, some sort of criteria.

Why is that not correct?

MR. HENDIFAR: Okay. And I'll do a bit of answering that, but we have detailed discussions in our slide. The sentence Your Honor point to doesn't say C1 through Cn are the content channels or are only the content channels. It says it includes the content.

JUDGE LANEY: No, it doesn't say includes. It says contain.

MR. HENDIFAR: Contain, sorry. It contains the content. It doesn't say that they are exclusively just the content channels that the user has selected.

JUDGE LANEY: But it doesn't say that they include anything else. It only identifies that. It doesn't suggest, as you were reading -- or just suggesting, it doesn't say, includes, comprises. It doesn't say, may contain.

MR. HENDIFAR: Thank you. So at best it's ambiguous, I grant that. So we now look at the context.

JUDGE LANEY: Okay.

MR. HENDIFAR: The prior paragraph says, an entire -- and I'll go through the slides, but since Your Honor asked, I want to just repeat -- give you the response --

JUDGE LANEY: For sure.

MR. HENDIFAR: -- so that you have the response in detail. Paragraph 27 says you have the ADC that converts an entire signal bandwidth and channel, and that's the only place in Zhang where n is defined. So that's one. Then you go -- we have the architecture of Zhang.

JUDGE LANEY: But where does that -- how is that defining N? I understood your -- I see that. And that's where I get -- I'd like you to help me better understand. Because as I read it, it says, The audio-to-digital converter is a high speed audio-to-digital converter, ADC, so that an entire signal band within channels can be converted.

Now, that doesn't really define n to me, at least at first blush. What it -- what I understand that to be saying is, look, the audio digital converter is robust, and regardless of what n is, it is going to be substantial enough to be able to convert all those channels.

MR. HENDIFAR: So I'm on Slide 13 of our deck, which has the paragraph Your Honor is pointing to. So our expert -- and we will show that their expert as well, both experts, interpret this sentence to mean that n is both desired and undesired channels. It is not just the desired channels. So let me point you to their expert's deposition.

JUDGE LANEY: Well, no. I've seen it, and I totally agree with you that he says it's within -- it doesn't distinguish between desired and undesired.

MR. HENDIFAR: No, not just that. The next slide, Slide Number 14, because I went -- I had a lot of discussions with him.

JUDGE LANEY: Yeah.

MR. HENDIFAR: We went through this Paragraph 27, and I expressly asked him, lower-case letter n refers to both desired and undesired channels within the entire band, correct? It seems to, yes. And that's his interpretation of that same sentence in Paragraph 27 of Zhang that Your Honor was pointing to.

JUDGE LANEY: Okay.

MR. HENDIFAR: So as far as what the expert thought, there is no dispute, going back to Slide 13, about what n is referring to in Zhang.

JUDGE LANEY: Wait, n is referring to in the context of Paragraph 27 -- I have no issues that n, within the context of Paragraph 27, covers both desired and undesired. I'm not quibbling with you on that at all. However, when you go to 32 -- I guess, where I have more difficulty, when we go to Paragraph 28, I'm sorry, and it says, "RF channel C1 to Cn contained content channels that are selected or used by a subscriber." At least in the context of this example, in which you have C1 through Cn, in that context, n is defined to be containing a channel that is selected or used by subscriber.

I mean, I think Paragraph 28 provides a different context for n than does 27 because 27 isn't about what n is. 27 is about what -- the robustness of the audio to digital converter. It's about the speed of it, that it's robust, that it can handle a -- n number of channels, which could be desired or undesired.

However, when I go to Paragraph 28, where it now gives me more context, more direction, when it says, C1 to Cn, and then it tells me C1 and n included with that -- I mean, through to n contain content channels that are selected or used by a subscriber. To me, that's saying, within the context of

C1 to Cn, n is still a selected or used by a subscriber -- is a -- I'm sorry, is a channel that is selected or used by a subscriber, right?

MR. HENDIFAR: Just so I'm clear --

JUDGE LANEY: If all those are desired.

MR. HENDIFAR: Just so I'm clear. I just want to make sure I understand --

JUDGE LANEY: Yeah.

MR. HENDIFAR: -- Your Honor's interpretation. If Your Honor reading that sentence in Zhang to mean that C1 through Cn are all the content channels, or are you reading that C1 through Cn is a subset of the content channel? The rest are in that frequency band?

JUDGE LANEY: So that -- I think that's perfect. I think this is constructive in that I think C1 to Cn are content channels that are selected or used by a subscriber.

MR. HENDIFAR: So, a subset.

JUDGE LANEY: Huh?

MR. HENDIFAR: So, a subset of all content channels. That's how you are reading that?

JUDGE LANEY: Well, I'm saying C1 is a subset of the content channels that are selected or used by a subscriber. C2 is a subset of content channels that are selected and used by a subscriber.

MR. HENDIFAR: So, C1 through Cn collectively, is Your Honor view them as all of the content channel in that incoming signal, or are you viewing C1 through Cn collectively to be still a subset of the content channels that came in?

JUDGE LANEY: Well, I -- it would seem to me -- I think I'm open -- to answer your question, I'm still investigating that question. At this point, I would tell you I'm leaning towards there being more content channels that are coming in, and that C1 to Cn is a subset of content channels that is focused down to content channels that are selected or used by a subscriber.

Is that -- so does that answer your question?

MR. HENDIFAR: I understand your interpretation.

JUDGE LANEY: That's where I'm leaning at this point.

MR. HENDIFAR: So I will set myself to prove that interpretation to be incorrect. I'll summarize why, and I'll go through the evidence one by one. So one, Zhang throughout uses two variables, N, as in November, M, as in Mike. At least with respect to M, there's no dispute that it consistently uses m in channel D1 through Dm to be the channels that are selected and must be sent to demodulators. So with your interpretation --

JUDGE LANEY: Say that one more time?

MR. HENDIFAR: Sure.

JUDGE LANEY: M is what's used to go to the demodulator?

MR. HENDIFAR: To demodulator. Right. So --

JUDGE LANEY: N is what's going to --

MR. HENDIFAR: Network. Right. So at least with M, there's no dispute. Zhang is consistently using M, as in Mike, to be channels D1 to Dm as channels that are selected from the channel C to be sent to demodulators. And we will prove that. So with Your Honor's tentative interpretation, Zhang would have to be using n to mean different things in Paragraph 27 and 28. So in 27, everybody agrees that n means both desired and undesired channels.

JUDGE LANEY: Yeah.

MR. HENDIFAR: Then, what is in Paragraph 28, it suddenly changes its meaning to be a subset of all the channels that the user has selected. Then n will have a different meeting in Paragraphs 27 and 28.

JUDGE LANEY: Right.

MR. HENDIFAR: So to begin with, we will show we don't believe that's --

JUDGE LANEY: But why would it have a different meaning? And here's why I say why because in Paragraph 27, n is just n. It's just a variable. In Paragraph 28, we're talking about Cn.

MR. HENDIFAR: So it's just a coincidence that it's the same?

JUDGE LANEY: No. And both are variables, both they cover -- they -- it covers a number, a plurality of things. It's just an indication that we're -- there's no -- you know, it could be two, three. It's not a limitation of sorts. In Paragraph 27, we're not talking about -- I mean, we're just talking about n channels, right? We're talking about channels in general, all channels without distinguishing what kind of channels they are, whereas in 28, we're talking about C channels, which Paragraph 28 defines or describes as channels that a -- are selected or used by a subscriber.

MR. HENDIFAR: So let’s look at the channels a little bit, so one --

JUDGE LANEY: Yeah.

MR. HENDIFAR: -- what would the point of the selector be if the demultiplexer in Zhang extracted only channels C that are selected or used by the user?

JUDGE LANEY: Let's bring that picture, just so I can visualize. Walk through what you're --

MR. HENDIFAR: Yes.

JUDGE LANEY: Because I do want to go through --

MR. HENDIFAR: Is it okay if I go through the slides? Because I address all of these, and I could give a few comments --

JUDGE LANEY: Okay. If you feel like it addresses it, then --

MR. HENDIFAR: Yeah. Yeah. I mean, we do address everything. So let me tell you at a high level of what we search to prove, and then I'll go through the evidence. So I'm at Slide No. 5 of Patent Owner's deck, and this is the patents. So they have the same specification, so it's common among all of them. So an input signal, yellow, comes in. That's your cable receiver, which has ten channels. So that would be Fox News, CNN, MSNBC, ESPN, whatnot. Four of those are desired channels, that they're shown in blue, so let's say Fox News, CNN, MSNBC, ESPN. Now, what the patent does is, first, the signal comes in. It digitizes the channels in the yellow ADC, no dispute there, fine. Going to Slide Number 6, and this is where the distinction, we believe, and we will plan on showing, exists.

What the invention do is that they only extract those channels that the users actually desire. So, it doesn't extract everything. It extracts only those channels that are ultimately sent to demodulator as shown in Slide No. 7. Now, the Patent Owner's capital letter N, November, variable. Zhang uses lowercase letter n variable. So I just want to highlight that they're both Ns, but they don't mean the same thing. What Zhang does -- going to Slide Number 8 of Patent Owner's deck, and that's what we plan on proving --

JUDGE LANEY: I want to go back real quick. I just -- so on Slide 6, so the purple, though, I think we're calling it the multiplier on the digital front-end that you have.

MR. HENDIFAR: The blue.

JUDGE LANEY: That's blue?

MR. HENDIFAR: Correct.

JUDGE LANEY: It's Patent Owner's contention that that's doing a selection?

MR. HENDIFAR: That, in conjunction with the filter that does the selection. So there are dependent claims eight --

JUDGE LANEY: So where is that shown in Figure 6?

MR. HENDIFAR: So we point to the mixer, but it's really the whole circuit. So if you look at dependent claim 8 of the '362 patent, for instance.

JUDGE LANEY: So is that low-pass filter?

MR. HENDIFAR: It says the low-pass filter.

JUDGE LANEY: So it's the same similar structure in the NCO, the multiplier, and the low-pass filter. It's just, you're saying that in the embodiment of the Patent '362, it's tuned to call out one very particular thing, whereas in Zhang, it's a more broad --

MR. HENDIFAR: And we plan on showing that Zhang's own applicant in the European prosecution, explained that the way Zhang is different from Zhang's prior art was that Zhang's prior art sent all the RF channels, C1 to Cn, out to Zhang's applicant, to the demodulator. Zhang adds a selector in between, so it only sends the desired channels.

JUDGE LANEY: And that's in -- that discussion is in the prosecution history?

MR. HENDIFAR: Of Zhang. On behalf of Zhang -- I mean --

JUDGE LANEY: Of Zhang --

MR. HENDIFAR: Right.

JUDGE LANEY: Of the 362, you're talking about?

MR. HENDIFAR: No, no, no. Zhang itself. When the Zhang applicant was finding a patent for Zhang in Europe, the way Zhang's own inventors describe their invention was that channels C1 and Cn, are all the RF channel, and the prior art transmitted all of those RF channels to demodulators. What we, the Zhang inventors, have done is that they have added a selector in between. So we filter what goes to the demodulator. We don't send everything to the demodulators.

JUDGE LANEY: Does that undermine your argument? I mean, aren't you just describing Zhang, saying they make a selection before going to the demodulator?

MR. HENDIFAR: They make a selection. The point is that -- so there is no dispute. Let me clarify that. There is no -- let me go to Slide No. 10 of Patent Owner's deck. There is no dispute that in both Zhang and the patent, an RF signal that has both desired and undesired channel comes in and what’s sent to demodulators are desired channels. Nobody is disputing that.

The dispute is about the architecture for the system, how that resolve that shift. And what we contend is that the claims require specific steps to be performed, the selecting step, the operating step. Zhang does not meet regardless of which of those two issues. So this is an issue of two systems achieving similar results, but doing that through different architectures. And that's why Zhang doesn't meet the claim limitations that I plan on showing you.

JUDGE LANEY: Well, when you say -- I thought you just said -- I mean, it's the same architecture, but doing -- implemented in different ways.

MR. HENDIFAR: No. It's different architectures because ultimately, every receiver has to demodulate desired channels. Like, there's no --

JUDGE LANEY: Right.

MR. HENDIFAR: -- other way to watch it. Now, the way you get the desired channels demodulated is how you -- the architecture of your system. How do you go from the input signal to the demodulator? What is the architecture of that receiver? And what we plan on showing as soon as Slide No. 10 is that the way the invention does that, it has only the thing -- it only extracts the desired channels. The way Zhang does that is that it first extracts everything, as shown in the red box, and the demultiplexer, which is the name confirms. And then it has a selector which selects desired channels from that collection of all channels.

JUDGE LANEY: So why -- how is that a distinction? So I know we spent a lot of time with Petitioner about the front-end, about 230 --

MR. HENDIFAR: Uh-huh.

JUDGE LANEY: -- right? The digital channel demodulator, right? Or demux. But it sounds like Patent Owner is conceding that if the claims were broad enough to cover both 230 in combination with 240, that it does disclose what's claimed.

MR. HENDIFAR: No. And let me explain why.

JUDGE LANEY: Okay.

MR. HENDIFAR: So go to Slide 11. Thank you for bringing it back. We're going the same order that we have the slides. Petitioner presents two alternatives on what discloses the claimed desired channels in Zhang. And the reason they have two alternatives is that none of those actually fit, and we can prove that. So first, they rely on Channels C1 through Cn as the

claimed desired channels. And then they claim they rely on channels D1, as in Dm, and through Dm as the claimed desired channels. Now, none of those fits, and this is the summary I'll go through slides in detail, but Channels C1 through Cn does not disclose a claim for three independent sufficient issues. So one is the undesired channels. We would show that they're all channels. I understand Your Honor's point, and we intend on proving otherwise.

JUDGE WORMMEESTER: Counsel. I just want to point something out on that point. Something that jumps out at me is Paragraph 23 of Zhang. About midway through, it says that the down-converter, 210, receives one or more multichannel analog RF signals. Okay. And they can come from different systems, satellite, terrestrial TV, and cable systems.

And then jumping to 27, Paragraph 27, it says that the ADC, you know, can handle an entire signal band with n channels. And then in 28, it talks about C1 to Cn. So for me, when I'm taking these paragraphs together, C1 to Cn is a subset of the multiple RF signals going to the down-converter, 210. So there is a selection there.

MR. HENDIFAR: I'm sorry. One second. Let me -- I was trying to pull up Zhang. So highlight 23 of Zhang. I have it on the screen. The frequency blocked down-converter receives one or more multichannel RF signal --

So that's the sentence Your Honor is reading? The frequency block down-converter 210 receives one or more multichannel analog RF signals, which can be sourced from a variety of systems, such as satellite systems, terrestrial TV systems, cable systems, et cetera. Is that the sentence you are referring to?

JUDGE WORMMEESTER: And then I'm reading, a signal band with n channels as one of those signals, one of the multiple signals that was received. So there's --

MR. HENDIFAR: Is that Paragraph 27? Is that Paragraph 27?

JUDGE WORMMEESTER: Yes.

MR. HENDIFAR: Okay. So Paragraph 27 -- so on Slide Number 9 on Patent Owner's deck, so Paragraph 27 is talking about Box 220 as shown in yellow in Zhang. That's the analog to digital convertor. What it's saying is that the ADC digitizes an entire signal band and channel. The sentence Your Honor read from Paragraph 23 of Zhang, that's the input RF signal that comes in. That's in yellow on the left side. So what Zhang is saying is that that input RF signal can be just cable, can be a combination of things. It can be multiple things mixed together, but it says nothing about -- Paragraph 23 all the way through Paragraph 27 of Zhang say nothing about a selection. So maybe I'm not quite understanding what Your Honor's point was there.

JUDGE WORMMEESTER: Well, it's talking about multiple signals going in. And then in 28 it's talking about, you know, C1 to Cn, which is part of a signal, but not across all the signals.

There has to be some sort of selection, right?

MR. HENDIFAR: It is Your Honor -- so is Your Honor's point that what goes in Zhang is satellite and cable and whatnot? And C1 through Cn selects one of those, just satellite or just cable?

JUDGE WORMMEESTER: Is that right?

MR. HENDIFAR: Is that Your Honor -- no, it's not. That’s not how Zhang works. I just want to best understand you, to make sure I understand Your Honor's question.

JUDGE WORMMEESTER: That's my question. That's how it reads to me.

MR. HENDIFAR: There is -- honestly, there's nothing in Zhang that would suggest that. Give me one moment.

JUDGE LANEY: Well, 23 saying that the Zhang system can handle satellite systems or RF signals that are sourced from a variety of different systems.

MR. HENDIFAR: Right.

JUDGE LANEY: Right?

MR. HENDIFAR: And that's neither here nor there because it just says --

JUDGE LANEY: Well --

JUDGE WORMMEESTER: I don't think it's not neither here nor there because it says "one or more multichannel signals."

MR. HENDIFAR: Right.

JUDGE WORMMEESTER: So there's a multichannel signal that includes C1 to Cn, right? And then there's got to be another one that Zhang doesn't talk about. So there must have been some sort of selection.

MR. HENDIFAR: So if Zhang receives – I think I understand the question. So I believe, if I understand Your Honor correctly, you're reading it as the RF input for -- if it's from satellite is one signal band, the input for cable is one signal band as Zhang --

JUDGE WORMMEESTER: And it doesn't have to be that way. It could be multiple signal bands with mixed channels. I don't know, but there's multiple signals, and each signal has multiple channels.

MR. HENDIFAR: Okay. And in Paragraph 27 --

JUDGE WORMMEESTER: And then C1 to Cn is one subset.

MR. HENDIFAR: Okay. If that was the case, that selection would've been done in the analog digital converter because Paragraph 27, you are converting that signal bandwidth and channels from analog to digital. So there is nothing in Zhang that -- maybe I'm not quite understanding.

JUDGE WORMMEESTER: So then by the time you get to selecting C1, C2, all the way to Cn -- you know, it is selecting the desired channels, I guess, is my point. You're saying it's selecting all the undesired and desired channels. But by the time, in Zhang's system, we are at the C1, C2, Cn, it is all the desired channels because the other signals aren't mentioned.

MR. HENDIFAR: So why would Zhang receive cable signals if it's not going to demultiplex everything out of it?

JUDGE WORMMEESTER: Because they're not selected by the user. The user didn't select them.

MR. HENDIFAR: I'm sorry. I'm struggling to --

(Simultaneous speaking.)

JUDGE LANEY: So, look, she's -- it says that you have multiple channel analog RF signals. RF signals.

MR. HENDIFAR: Correct.

JUDGE LANEY: So those are going to get converted, right?

MR. HENDIFAR: Yes, correct.

JUDGE LANEY: Okay. And those RF signals could be satellite, terrestrial cable. It could be a bunch of different things.

MR. HENDIFAR: Right.

JUDGE LANEY: And I think the point is, what Zhang allows or teaches is a system that could pick out the signals that have been converted

from RF that are specific to cable, or the signals that are specific to satellite, or the signals that are specific to terrestrial.

MR. HENDIFAR: I see your point.

JUDGE WORMMEESTER: Thank you, Judge Laney.

MR. HENDIFAR: Okay. Let me answer that. I'm going to go through Zhang and provide the citations, but, so, what Zhang is allowing is, you don't only have to source your input from the cable. You can source it from multiple things. But if you are sourcing it from multiple things, you are still demultiplexing everything, that it -- the way it would work, and I'll provide the citation during the break, is you would essentially assemble everything together, you could digitize everything together, you would extract all the channels, and then you select the desired channels.

JUDGE LANEY: The reason that's a hard sell for me is the way you describe does not give any credit to the language, that are selected or desired or are used by the subscriber, as it's describing C1. You seem to be describing to me, personally., C1 through Cn as being things that are completely indiscriminate. No selection, no use, no desire. It's just everything coming in, coming out. And I appreciate the argument, and if you can overcome that hurdle, there may be some --

MR. HENDIFAR: That's what I'm trying to do

JUDGE LANEY: But that's -- but you don't seem to be going to at least what troubles me the most, because you keep pushing it to C1 through Cn is indiscriminate, isn't selected or used by a subscriber. I need you to figure out -- I mean, or help me understand, how are you getting from your argument of indiscriminate, and how's that consistent with Zhang expressly

teaching me or a skilled artisan that C1 to Cn is, in fact, something that's selected or used by a subscriber?

MR. HENDIFAR: And I will do that.

PARTICIPANT: Your Honor, may I have a moment to confer with Counsel?

JUDGE LANEY: Sure.

PARTICIPANT: I think I might be able to help --

JUDGE LANEY: Sure.

(Pause.)

MR. HENDIFAR: Let me, if I may, point Your Honor to Figure 6 of Zhang.

JUDGE LANEY: I'm sorry. Say that one more time?

MR. HENDIFAR: Figure 6 of Zhang.

JUDGE LANEY: Figure 6 of Zhang?

MR. HENDIFAR: Correct. I'm going to put it on the screen, as well. That is the embodiment I was trying to find the citation. You see you have two analog digital converters.

JUDGE LANEY: Just one second. Okay.

MR. HENDIFAR: So I think this would be an example where you have two different inputs coming in, you digitize them separately, but then you still assemble them together, and your extract everything. But I will provide the detailed citations for this.

JUDGE LANEY: Well, real quick, I don't think I fully appreciate why you brought up Figure 6. One more time.

MR. HENDIFAR: Allow me to -- I'll do it after the break. I want to find the citations. Let me go back to the slides. I'm going to answer Your

Honor's questions about the satellite versus cable TV input in our rebuttal time.

JUDGE LANEY: Okay. But, again --

MR. HENDIFAR: I'm going to address Your Honor's question.

JUDGE LANEY: It's a big thing for me. Okay.

MR. HENDIFAR: Yes. So, back to Slide 11.

JUDGE LANEY: Okay.

MR. HENDIFAR: I'm going to do it in reverse. Even if Zhang Channels C1 through Cn are a subset of all the input channels, Petitioner can still not rely on those channels as the desired channels because, as we will prove, but summarize in item number Roman numeral III on Slide 11 in the left, then they cannot show Limitation 1E.

So I'll draw your attention to the claim language. So the claim requires Limitation 1[D], that you select the desired channels. And then 1E says your output said selected channels to the demodulator. And we will prove, as should be self-evident once we go through Zhang, is that in Zhang, it's undisputed. What's sent to demodulators are channels D, as in David, 1 through F, not Channels C1 through Cn.

So even if we assume that Channels C1 through Cn are desired channels and a subset of all the input channels, then Petitioner failed to show Limitation 1[D], which is why I said you are correct that the dispute is about Limitation 1[D]. But part of why they failed to show that is that their mapping contradicts other limitations.

JUDGE LANEY: So is your position that what has to be outputted --

(Simultaneous speaking.)

JUDGE LANEY: When it says output said selected plurality of television channels to a demodulator as a digital data stream, that those selected plurality of television channels, every single one that has been selected has to be output? It can't be a subset of what was selected?

MR. HENDIFAR: Correct. It says, "said selected." It doesn't say a subset. It's said, and there's a body of other -- I'm sure Your Honors are familiar. It's the same select -- same channels that are selected and output.

JUDGE WORMMEESTER: Doesn't Zhang say you could select one or more of C1 to Cn, which would include all of C1 to Cn?

MR. HENDIFAR: So, we have explanations about that. In that case, it's down happenstance case law, which is, if it happens that in one specific instance you may happen to select all the channels, would that disclose a method? Clearly, it does not, and I have case law for that.

JUDGE WORMMEESTER: I didn't catch the last part. I'm sorry.

MR. HENDIFAR: I apologize. We have specific slides on that. But, in summary, Zhang never discloses that it's all the channels. But, two, there are cases that -- I think that the Board has also mentioned that the happenstance doesn't disclose a claim. So Zhang's architecture is that you extract more channels than you send to the demodulator. You can dispute whether it will extract all the channels or some of the channels, but it extracts more channels, as an architectural matter, than it sends to the demodulator. It may happen that, once in a blue moon, all the channels that are extracted happened to be selected to be sent to demodulators, but happenstance does not disclose the claim.

JUDGE LANEY: Well, if it discloses -- if it invalidates it part of the time, it invalidates it all the time. I mean, if it says that it -- if it

contemplates and teaches that it'll disclose all or one or any variation thereof, doesn't that -- isn't that enough?

MR. HENDIFAR: No.

JUDGE LANEY: Why would that not be enough?

MR. HENDIFAR: We have Federal Circuit cases, which I'll get to momentarily when we get to this point. Okay, so I'm going to skip this because we already discussed that. I understand Your Honor disagrees with Paragraph 27. There is no dispute that Paragraph 27 has this -- the variable and refers to both desired and undesired channels.

Now, this is Paragraph 28. And I have -- I don't have the portion that Your Honor relies on, but I have the balance. But it answers Your Honor's point, too. So, Paragraph 28 starts with, "A channel demultiplexer then demultiplexes." It doesn't say extracts. It doesn't say selects. It doesn't say -- demultiplex is a well-known term of art. When you demultiplex a signal, you're just separating out its constituents. It clearly says, a demultiplexer 230 demultiplexes the input RF signal into separate digital RF channels C1 through Cn.

The same language is also in what Zhang (inaudible). A digital channel demultiplexer receives the multichannel digital RF signal from the ADC and demultiplexes the multichannel digital RF into separate digital RF channels.

So Zhang is using the term demultiplexer and demultiplexing in the way that it's always used in this field, which is locating the signal. And all you do is that you separating it out into its constituent parts.

JUDGE LANEY: Let me give a hard example of that. As we were talking about before, RF signals could be satellite, or it could be cable.

MR. HENDIFAR: Uh-huh.

JUDGE LANEY: Okay. So it could -- so it would separate the satellite from the cable?

MR. HENDIFAR: I don't think there's any disclosure in Zhang that actually says that. So there is nothing in Zhang that says your inputs are both satellite and cable, and this is the part in Zhang where we are separating satellite and cable. Also, I'm only going to focus on the cable part.

JUDGE LANEY: Well, the very -- I'm looking exactly where it says -- the paragraph that says that the demodulator -- the multichannel digital RF signal into separate digital RF channels C1 to Cn.

MR. HENDIFAR: Right.

JUDGE LANEY: So isn't that separating terrestrial from cable?

MR. HENDIFAR: No, no, no. It's having -- you have an RF input with multiple channels, multichannel RF input. You're separating out those RF channels. So C1 is an RF channel. C2 is an RF channel.

JUDGE LANEY: Right, but -- okay. You have RF channels that could be terrestrial. You have RF channels that could be -- signals that could be cable.

MR. HENDIFAR: Right.

JUDGE LANEY: So the cable , it's separating out the terrestrial from the cable, and the cable would have C1, C2, C3, as we've talked about the fact that, yes, you would have, even within that, channels within the cable, just like if you were taking out the cable but just looking at terrestrial, you would still be separating terrestrial into different ones. But you're still separating cable from terrestrial.

MR. HENDIFAR: Is Your Honor's point that each of cable and terrestrial have a C1 through C35, or C1 through C35 is half cable, half terrestrial? Which --

JUDGE LANEY: No, I guess it -- I don't think it -- let's go with that it's cable is C1 through C35. Terrestrial would say -- they would use maybe the acronym T1 through T --

MR. HENDIFAR: But then there's no disclosure for that.

(Simultaneous speaking.)

JUDGE LANEY: Again, Paragraph 23 tells us that it could be satellite, terrestrial, cable, a variety of different things. Yes, in the exemplary embodiment in which they're teaching they're using cable as the example, but they're saying it could be any one of these different things. Here, we're separating the cable from the terrestrial. Or you're saying, no, we're separating --

MR. HENDIFAR: Different cable channels.

JUDGE LANEY: Different cable channels. Okay.

MR. HENDIFAR: So, Your Honor's reading of Zhang, I respectfully disagree. You're reading so much into it and it just changes what Zhang does. There is no disclosure in Zhang that even suggests you get cable and satellite coming in and you are going to separate out cable and then just do all the cable channels as separate from satellite and then do all satellite channels. There is just -- there is no disclosure that says that. There is a disclosure that the input can be one or more of those, but everywhere in Zhang you digitize everything, and then you separate all the channels.

JUDGE LANEY: So when you -- your reading of Zhang -- Patent Owner's reading of Zhang is, if it does have terrestrial TV systems, or if it

has satellite system, terrestrial TV, that all these RF signals from all these different systems come in, then C1 to Cn is going to be all of those different systems. You're saying that it can't distinguish between terrestrial, cable, or --

MR. HENDIFAR: I'm not saying it can't or it can.

(Simultaneous speaking.)

MR. HENDIFAR: I'm just saying that the disclosure of what it does.

JUDGE LANEY: No, I know. But the disclosure of Paragraph 23 talks about that this system can handle these different things, right?

MR. HENDIFAR: Correct.

JUDGE LANEY: And so I'm trying to understand what Patent Owner is saying. And the Patent Owner's position is that what Zhang teaches is if in the example of which it is using multiple different ones, cable, terrestrial, satellite, that this digital demultiplexer 230 is going to just simply do all of them. That it's not going to be it's not going to distinguish between terrestrial, between cable -- I mean, between cable.

I mean, what I understand the Petitioner to be saying is it naturally would because the whole point is to change this band so I can filter out everything that I don't want, right? I'm going to multiply it so that that shift is going to shift my desired, for example, cable, I'm going to shift that down so that everything else gets --

MR. HENDIFAR: That's not the purpose.

JUDGE LANEY: Okay.

MR. HENDIFAR: That's why I started with that slide. So let me go here. So I'm on Slide 83 of Patent Owner. So you have a bandwidth with 20 channels, and in order for you to extract the 20 channels the way Zhang

1 does, you would have to bring each one to baseband. So, remember, the
2 baseband is the lower frequency. Let's say you want to -- you have the Fox,
3 CNN, NBC, ESPN channels in that incoming signal, and you want to extract
4 or -- so you want to demultiplex the way Zhang does. The way you do that,
5 you have to do them one by one.
6 JUDGE LANEY: But how am I multiplexing? So I'm with you so
7 far. But adding to that, what --
8 MR. HENDIFAR: How does the multiplexer communicate?
9 JUDGE LANEY: No, no, no, because you keep -- I mean, earlier, I
10 understand you to accuse me of -- not accuse -- to understand me of trying to
11 read in things that weren't there. I'm just trying to flesh things out, so I'm
12 presenting hypotheticals.
13 I don't want you to believe -- I don't want you to understand that I'm --
14 everything I'm questioning you is necessarily a way that I'm understanding
15 it. This is my opportunity to --
16 MR. HENDIFAR: I understand that. Please.
17 JUDGE LANEY: But that being said, even when you keep going to
18 this duplexer and talking about 1 through 20 and all this stuff, how are you
19 bringing into play what Zhang expressly says, which is, C1 to Cn is content
20 channels that are selected or used by a subscriber? Again, your examples
21 keep going back to indiscriminate, without any selection. I'm asking you to
22 tie that in, because I -- that's expressed. That's clear. That's unambiguous
23 that Zhang says that. I need you to help me get from that language to your
24 indiscriminate argument.
25 MR. HENDIFAR: Yes. Go up to Slide 15. So, I concede that the
26 sentence Your Honor read from Zhang's Paragraph 28, that channels C1

through Cn -- I couldn't recall the specific verbiage, it used -- contain all the channels used --

JUDGE LANEY: It says selected --

MR. HENDIFAR: But they user, contained --

JUDGE LANEY: -- or used by a subscriber.

MR. HENDIFAR: Correct. So our contention is, if you read that sentence, which on its own may be suggestive either way, if you read that in the context of the entirety of Zhang's architecture and Zhang's own prosecution history, it would be clear that what that sentence means is that channels C1 through Cn include or contain all those channels, but it's not exclusively those channels. Otherwise, you wouldn't need a selector.

So, going to Slide 16, if Channels C1 through Cn were only the channels used or selected by the user, then there will be no point for Zhang to have a selector after the demultiplexer to select the channels that would be sent to demodulators, because if the user selects or uses a channel to watch TV or whatever it wants to do, it would have to demultiplex the channel. So if the demultiplexer 230 in Zhang only extracted channels -- content channels that are used or selected by the user, then it would just send all of those to demodulators. It wouldn't need a selector to select which one would go to the demodulator.

JUDGE LANEY: Why?

MR. HENDIFAR: Okay. Because, well, your channels C1 through Cn are channels that are used or selected by the user, for the user to use them, it would have to be demodulated.

JUDGE LANEY: Okay. But what if you don't want to demodulate all the ones that -- look, I mean, the same reason why you're -- just because I

want to make sure I'm clear with -- set this out because I'm sensitive to you suggesting that I --

MR. HENDIFAR: I didn't mean to do that. I'm so sorry.

JUDGE LANEY: No, I know. No, and I'm not sensitive to you saying it. I'm sensitive to I want to make sure that I'm speaking more clearly, not that you said it. So why isn't it just like your argument, where you're saying you wouldn't do it because they're getting the ones that the user has selected or has used? So you wouldn't need the selector.

MR. HENDIFAR: The selector, right.

JUDGE LANEY: You're not pointing me to anything in Zhang that says that. You're giving me kind of a common sense type of argument. This is what he uses. This is what he selected. Why do you need the selector? That's what I understand you talking about.

(Simultaneous speaking.)

JUDGE LANEY: Okay. My question is, isn't it just as plausible that you would, in fact, still have it because the demodulator -- time, bandwidth, there's a lot of different factors -- may not always want to take -- if a user has used 100 channels in the last 30 days, maybe the demodulator wants to say 100 is still too much. Let's do the top ten, right? Or the selector. The selector would still make a further criteria. Why isn't that just as reasonable of an explanation as your suggestion that, well, if it's already picking what is used or selected, why do you need the selector layer?

MR. HENDIFAR: So, you don't demodulate just top ten for the sake of having it ready in case the user wants to watch it. We have testimony and arguments to that point. I don't believe that's disputed. You demodulate channels are actually going right now. If I want to watch the channel, it will

be demodulated. If I don't watch it, it'll not be demodulated. If I DVR it, it will be demodulated. If I don't DVR it, it will not be demodulated. It will not be demodulated for the sake of it being there in case somebody wants to watch it. So, that's the point.

So then that's why the demodulation is a good proxy for what is desired. I understand part of the discussions we had, but the demodulation is what's going to be watched, DVR or whatever the user -- picture-in-picture. But you don't just demodulate things for the sake of demodulating things.

JUDGE LANEY: Demodulating was what's actually getting produced --

MR. HENDIFAR: Exactly.

JUDGE LANEY: Okay.

MR. HENDIFAR: And what the demodulation means is that you are actually taking the content out.

JUDGE LANEY: Okay.

MR. HENDIFAR: You don't do that unless the user is watching it. So my point was, Slide 16 of our demonstratives, Zhang says you have a selector that selects one or more RF channels, D1 through Dm, from the digital RF channels, C1 through Cn. If channels C1 through Cn were just the channels that the user selected or used, then you would just send those to demodulators.

JUDGE LANEY: So how about this understanding? In light of what you said, and as what Judge Wormmeester brought up earlier, that maybe "selected or used by the subscriber" is referring to the fact that the user uses cable, doesn't have satellite; uses satellite, doesn't have cable. So it is, in

fact, selecting and distinguishing the RF signals that are coming in, to only take out cable or to only take out satellite.

MR. HENDIFAR: So, I respectfully submit that -- so, there is no disclosure in Zhang that you are going to have a system that somehow receives both cable and satellite, because they need separate input systems.

JUDGE LANEY: Okay. But I'm trying to --

(Simultaneous speaking.)

JUDGE LANEY: Look, I'm trying to understand the "selected or used." You're just -- you've just told me that if selected and used is as what I've been suggesting, that it makes --

MR. HENDIFAR: The selector --

JUDGE LANEY: -- 240, the selector, redundant and unnecessary. I do not, and will not, if I at all can, interpret Zhang in a way that makes it where it says things for no reason at all, or what it's saying is wrong or superfluous. It teaches and it speaks for a reason, okay? So, so far, all you've told me is that the part that I keep focusing on really doesn't have any meaning or reason, that I just need to ignore it, because if I look at the context of everything, it doesn't mean what it says it means. So far, that's what I understand your argument today.

MR. HENDIFAR: That's not correct. Can I clarify?

JUDGE LANEY: So when I go to try to find a different meaning, which is, okay, so you don't like that part; you don't like the fact that it's selecting the particular channels. This person watches HBO, History Channel, whatever. You're saying it's not that, because then selector doesn't really have any purpose.

So now, okay, well, I have this specification. Maybe a different understanding is the fact that, okay, used and selected is not referring to the particular channel, History, HBO, whatever. It's talking about the type of RF signals, whether it's terrestrial, whether it's cable. And now you're saying that it doesn't mean that, either.

So I guess I'm asking for help. What does it mean? Give it some meaning in your argument to help me get to where you are.

MR. HENDIFAR: Sure. So I have Paragraph 29 of Zhang on the screen.

JUDGE LANEY: Okay.

MR. HENDIFAR: And I'm going to go through it sentence-by-sentence, but I'll tell you the overview of what we think it means so you know what the target is. What that sentence is saying is that channels C1 through Cn include all the content channels so that a selector can select from whatever the user chooses. So, imagine if Zhang's channels C1 through Cn did not include all the content channels that the user could select from. Then the user may want to watch ESPN, and there is no ESPN extracted for the user in the selector 240 to select from. And we have a demonstrative for that, as well.

But let me read through Paragraph 28 of Zhang sentence-by-sentence, because that seems to be the most important paragraph from Your Honor's perspective. So Paragraph 28 starts with, "A digital channel demultiplexer then demultiplexes the multichannel digital RF signal into separate digital RF channels C1 to Cn." So, this sentence on its own is suggestive that the demultiplexer does what a demultiplexer does, which is separating out the

channels that are coming in, C1 through Cn. And then the specific implementation depends on other factors.

Then we go to -- still referring to Figure 2. An n-by-m digital selector receives all the demultiplexed digital RF channels C1 to Cn, and then selects one or more of the RF channels D1 to Dm from the one or more of the digital RF channels C1 to Cn. And then you have a selector that actually selects certain channels. So a subset of those are selected.

RF channels C1 through Cn contained content channels that are selected or used by the subscriber. So you call out the immediate preceding sentence. You have a selector that selected channels D1 through Dm. And what the next sentence is saying is that those initial set of C1 through Cn contain the content channels that the user is selecting from. So it's not -- it's containing all the content channels the user can select from, because once you continue that paragraph, it says, "channel-search capabilities of the digital selector 240 renders it much faster than traditional analog channel switching through RF tuners."

JUDGE LANEY: Okay.

MR. HENDIFAR: Now, both experts have interpreted this sentence. And what it's saying is -- and we have a cite for that as well -- that Zhang -- the fact that it's extracting everything and it's having it selected is by design. And the reason it's doing that is that it wants to have all the channels extracted so a user can flip between channels, Fox to CNN to MSNBC. Whereas, if all Zhang did is that it extracted desired channels, like what the patent does, then if the user wanted to switch a desired channel, it would have to reset that mixer to bring in a different channel to baseband.

JUDGE LANEY: Okay. So you -- so that part that I've been harping on, the "selected" or "user described," you're saying that's referring to what the 240 is choosing from the Cs?

MR. HENDIFAR: Correct. It immediately appears after that sentence.

JUDGE LANEY: Okay. Now I understand your point. And what that selector then does is send that stuff --

MR. HENDIFAR: To demodulator.

JUDGE LANEY: -- to the demodulator.

MR. HENDIFAR: Because those are the actual desired channels, because demodulator is what is done to a desired channel because the user then can watch DVR, whatever they want to.

JUDGE LANEY: So then, with that description, how is it that the combination of 230 and 240, what's output from that, is not the selected plurality of television channels to a demodulator?

MR. HENDIFAR: They are. For the D channel, the issue would be they are not selected from the same frequency as Limitation 1. I'll get to that momentarily.

JUDGE LANEY: Okay.

MR. HENDIFAR: Okay. So, going to Slide 17, because I want to make sure -- the understanding of Paragraph 28 of Zhang appears to be an important issue. I want to make sure I provide all the evidence that Your Honor may review.

JUDGE LANEY: You've answered my question on that.

MR. HENDIFAR: Yes, Your Honor. So I'm at Slide 17. This is Petitioner's expert, and I want to point out that Petitioner's expert at

deposition provided testimony that was all over the spectrum. And it seems like there was a declaration, but at deposition, sometimes he read from the declaration, but sometimes he skipped that and gave more straightforward answers, which were more favorable to us.

But, Slide 17, Petitioner's expert at deposition explained that desired -- and if you get the whole context, it's clear -- that the desired and undesired channels come in the selector. And then the desired channels are output the demodulator as a digital data stream. This is Petitioner's expert at deposition.

Now, going to Zhang's prosecution history, so that's what Zhang's applicant design inventor itself taught what Zhang does, which I believe that's pretty -- should have a lot of weight, what Zhang itself taught the system does. So this is Slide 18. Zhang had a European patent application which claimed a digital channel demultiplexer which demultiplexed channels C1 through Cn. And it also claimed a selector, which selected channels D1 through Dm from those.

Now, there was a rejection. There was an office action. Going to Slide 19, what matters is the following. This is how Zhang distinguished its system from the prior art. Zhang's own applicant, the inventor of Zhang, said, "unlike systems which demodulate all of the RF channels" -- and, in context, it's referring to C1 through Cn. What Zhang does is that it has a selector that only demodulates desired channels.

So, in context, if you read what Zhang's applicant is saying, is that my prior art sends all the channels C1 to Cn to demodulators. I have a selector in between. I only send some. But what is clear is that Zhang is saying C1

through Cn are, quote, all of the RF channels. Not some, not a subset, not just what the user wants, but all.

Now, going to Slide 21, Petitioner doesn't have a substantive response to Zhang's prosecution history. What they come back and say is, well, Patent Owner didn't actually provide all the documents from Zhang's prosecution, and didn't provide the prior art that Zhang was distinguishing from. But that's neither here nor there. They don't put that in the record to say if that's any different.

And going to Slide 22, Petitioner's own expert at deposition, I asked him, well, you said there are other European prosecution documents that were not in the record. Did you look at anything? Did you try to look at anything? And he said no. So this whole argument about there are other prosecution documents is really a red herring and there's no substantive response to the point.

Now, going to Slide 23, I already pointed it out that Zhang's -- the fact that it extracts all channels and has a selector to then select the desired channel is not some technical, like, small issue. It's a design philosophy. Now, I have Petitioner's expert's deposition transcript on Slide 23, at the bottom, and he explained that the reason Zhang extracts all channels is that the selector can quickly switch which ones are the desired channels. This is Petitioner's expert deposition. "The new desired channel that may be going from an undesired to desired channel." This is Petitioner's expert.

So he also explained that the reason Zhang extracts everything, but has a selector to then quickly flip through what is desired, is so that the user can quickly select the desired channel from -- switch what the desired

channel is that the user wants to watch. And the example would be going from Fox to CNN or vice versa.

JUDGE LANEY: So, just because you only have five minutes, and I do --

MR. HENDIFAR: I'm going to go over my time. That's fine.

JUDGE LANEY: Yeah. But the question I have is -- so, ultimately, what you're saying is, okay, you have select said plurality and desired television channels from said digitized plurality of frequencies. What I think I'm hearing and understanding is you're saying, well, in Zhang, you have the frequencies come in. You then turn them -- you basically pick out channels, C1 through Cn.

MR. HENDIFAR: Demultiplex.

JUDGE LANEY: Yeah, the demultiplexer does. You have now channels. The selection that is being made in Zhang is from channels. It's not from frequencies. And it's the selection of channels that is then sent to the demodulator. However, the claim requires something different. The claim requires you to identify the channels from the frequencies and send those channels to the demodulator. So what the invention has done is basically cut out one step that's in Zhang.

MR. HENDIFAR: Exactly. So the patent couples those steps; Zhang decouples those steps. And --

JUDGE LANEY: But did you agree with my characterization of what the argument is?

MR. HENDIFAR: With a minor addition that if you add up Zhang's channels C1 through Cn, they will not add up to the input frequency of that demux.

JUDGE LANEY: Why is that important?

MR. HENDIFAR: Okay. The reason that's important is --

JUDGE LANEY: And I ask that because what I'm seeing -- right now, what I'm seeing the distinction, what I'm seeing in your argument, is the fact that you're picking channels from frequencies and then outputting that channel to the demodulator. What you're saying the difference is with Zhang is they are creating channels and making a selection of channels to send to the demodulator.

MR. HENDIFAR: So, why that matters is the following. So, we skipped a lot of stuff. I'll go back, but -- so, I'm on Slide 65 of Patent Owner's deck. Limitation 1[C] says you digitize said plurality of frequencies. 1[D] says you select the desired channels from said digitized plurality of frequencies. So the same plurality of frequencies should be digitized in 1[C] and then selected from in 1[D].

Going to Slide 66, for 1[C], as in Charlie, the plurality of frequencies that are digitized in 1[C], Petitioner relies on what's shown in yellow, input to the demux 230 in Zhang.

Going to Slide 67, channels D, as in David, are selected from channel C, not from the input to the channel demux.

Now, why does that matter?

JUDGE JURGOVAN: So we're on 67?

JUDGE LANEY: So that arrow and your Slide 67, the claims, where should that be? You're saying this is different?

MR. HENDIFAR: Correct.

JUDGE LANEY: In the claims, where should that blue arrow down be?

MR. HENDIFAR: Thank you. So --

JUDGE LANEY: If you can, just go back to that one and just tell me where that blue arrow should be. Should it be pointing to the C1?

(Simultaneous speaking.)

MR. HENDIFAR: So that channels D should be selected from the yellow -- from the output of the yellow.

JUDGE LANEY: Okay. So that's where it -- it should be making that out of 220?

MR. HENDIFAR: Correct. Output of 220. The selection should be from the output of 220. And the reason, again, is -- so, Petitioner, for 1[C], pointed to the output of 220 as the plurality of frequencies that are digitized for 1[C].

Now, 68, the plurality of frequencies that channels D are selected from is not the same plurality of frequencies that is out from the ADC. And this is undisputed by the expert. So both experts agree that the plurality of frequencies that is yellow is different from the plurality of frequencies if you add up channels C1 through Cn.

Why it matters is that channels D are selected from channels C1 through Cn, not from the output of ADC. So channels D1 through Dm are selected from a different plurality of frequencies than the Petitioner mapped for Limitation 1[C]. And that's the actual claim language on Slide 70.

I just want to make sure --

JUDGE LANEY: Yeah. I got you.

MR. HENDIFAR: Okay. So, going back, because there were a few points --

JUDGE JURGOVAN: Just so you know, you're going into your --

MR. HENDIFAR: I'll go through it. That's fine. Thank you.

Okay. So on Slide Number 49 of Patent Owner, here we were discussing Petitioner's mapping for channels C, as in Charlie. So when Petitioner mapped Zhang channels C, as in Charlie, to the desired channels of the claim. So what we showed was channels C, as in Charlie, are all the channels --

JUDGE WORMMEESTER: And what slide are you on?

MR. HENDIFAR: 49.

JUDGE WORMMEESTER: Okay.

MR. HENDIFAR: Thank you. So we have shown that channels C, as in Charlie, are all the channels in the entire signal band, and there is no selection. So, Slide 49, Petitioner's reply comes back with a construction for selection to make Zhang fit.

If you recall that, in the petition Petitioner said selection -- all claim terms have plain and ordinary meaning. In the reply, as shown in Slide 49, Petitioner says, "selection is simply extracting a channel from the plurality of frequencies..." So, based on their construction of selection, requiring extracting a channel from frequencies -- extracting channel frequencies.

Now, why does that matter? It matters because, if we go back --

JUDGE LANEY: You said channel frequencies?

MR. HENDIFAR: No. Extracting channels from -- extracting a channel from frequencies.

JUDGE LANEY: Okay. Yeah.

MR. HENDIFAR: So, they provide that construction to make Zhang's demultiplexing of all channel Cs to be selection, to say, well, each of them is

extracted, so, therefore, each of them is selected. So, first, this construction is untimely, but, beyond that, Zhang doesn't just extract a channel from frequencies. Based on our view, Zhang indiscriminately extracts all channels from the frequency.

I asked Petitioner's expert at deposition, on Slide 51 of Patent Owner's deck, if you have a receiver system that takes that input, that has a bunch of channels, and what it does is that it indiscriminately separates out that input signal into its constituent channels, is that selection under --

JUDGE LANEY: Oh, this is 51? I'm sorry.

MR. HENDIFAR: Correct. 51.

JUDGE LANEY: Okay.

MR. HENDIFAR: So, this is Petitioner's expert deposition. So I asked him, under Petitioner's new construction of "selecting," which requires extracting a channel from frequencies, if you have a receiver system that takes an input signal and indiscriminately separates that into its constituent channels -- which is pretty much what Zhang, in our view, does -- is that selection under Petitioner's construction? And he refused to answer. He said he does not have an opinion. And the reason he doesn't have an opinion is that no ordinary person would look at a system that extracts everything and call that a selection. And that's --

JUDGE WORMMEESTER: How is that -- but don't some of the channels have, like, multiple content channels, right? So aren't -- isn't there -- how is that indiscriminate? They're selecting specific content channels per C1 --

MR. HENDIFAR: No, the C1 through Cn are RF channels. And what Zhang does, it just separates out all of the RF channels --

(Simultaneous speaking.)

JUDGE WORMMEESTER: But each RF channel has content channels, right?

MR. HENDIFAR: Correct.

JUDGE WORMMEESTER: So they're selecting certain content channels for each RF channel, right?

MR. HENDIFAR: Not at the demux stage, no. So, Zhang demultiplexer 230, all it does -- it doesn't know what content channel the user wants to watch, or there's no system in Zhang that describes that. What it does, you have 1 to 1.5 gigahertz inputs. And let's say each channel is 50 megahertz. So it has 10 channels, just separates out the 10 RF channels.

Now, each of those RF channels may have one or more content channels. That's fine. But all Zhang's demux has done is that it has demultiplexed those 50 RF channels into 50 separate channels. And then the selector would select which of those contain content channels that the user actually wants to watch to then send that to the demodulator.

JUDGE LANEY: So how would C1 be picked?

MR. HENDIFAR: C1 would have --

JUDGE LANEY: How would it decide C1? How would it decide C2?

MR. HENDIFAR: So I have a receiver, which -- receivers are generally manufacturer-specific, meaning the provider. So if you have Time Warner, you get a Time Warner receiver. I can't the DISH satellite receiver --

JUDGE LANEY: Yeah, I get that.

MR. HENDIFAR: So you have the receiver, so let's say Time Warner. Time Warner knows that my input cable has channels that are 10 gigahertz -- 10 megahertz in width. And I have channels at these frequencies because that's my cable system, that's what I send. So the receivers I give my users have set their demux 230 to extract those channels that are already --

JUDGE LANEY: So how does it pick C1 versus pick C2 versus pick C3?

MR. HENDIFAR: Okay. Okay. So you have -- so going to Slide 28, you have n chains. Each of them are set for one of C1 through Cn. So, at Time Warner, I know I have n channels that are sent to my users. I know Channel 1 is at this frequency. Channel 2 is at this frequency. I know the frequency of the channels I send to my users. So when I send the receiver to a user -- do you see the purple? The --

JUDGE LANEY: Yeah.

MR. HENDIFAR: Okay. So the purple sets the frequency of the channel that this chain is extracting. So Time Warner would set the frequency of the first purple to the frequency of its channel C1. And then it would set the frequency of the second purple chain to the frequency of its channel C2. And so Time Warner would set those purples to the frequency of its channels so each of those chains would extract one of the Time Warner channels.

JUDGE WORMMEESTER: Well, could there be a channel coming from a non-Time Warner that doesn't make it into C1 to Cn?

MR. HENDIFAR: So, not that Zhang has explained. Hypothetically, they would have two separate receivers. Zhang does not explain how it would address that.

JUDGE LANEY: So, as I understand what you're saying, you're saying it doesn't do any selection, it's just based -- you're saying, like in Figure 3, it's not doing any selection, it's just basically defining Channel 1, defining Channel 2, defining Channel 3, defining Channel 4 --

(Simultaneous speaking.)

JUDGE LANEY: Et cetera, et cetera.

MR. HENDIFAR: Correct.

JUDGE LANEY: It's not choosing between the RF signals coming in. It's not choosing one from the other.

MR. HENDIFAR: Correct.

JUDGE LANEY: Okay. But let's test it for a second. You agree what's coming in the yellow on Slide 29, which is Figure 3 from Zhang, that's been annotated by Patent Owner, the yellow is all the RF frequencies.

MR. HENDIFAR: So, let's say n is 35, but -- yes, yes.

JUDGE LANEY: Just, can you answer my question?

MR. HENDIFAR: Yes. Yes.

JUDGE LANEY: Is the yellow all RF frequencies?

MR. HENDIFAR: That are digitized, correct.

JUDGE LANEY: Okay. Why isn't -- for C -- why isn't it making a selection of what's C1 by creating the multiplier in order to pull out C1, to pull out C2? I mean, it is making a distinction --

(Simultaneous speaking.)

JUDGE LANEY: -- between C1, C2, and C3. Why isn't that selecting a desired channel?

MR. HENDIFAR: Got it. So, going to Slide 31, so from the perspective of that chain 1, if you were sitting inside that chain 1 and Zhang Figure 3, C1 is your desired channel because that's the channel you are tasked with extracting. But, going to Slide 32, Petitioner hasn't just relied on one chain of Zhang's demultiplexer as the claimed circuitry that does the selection. So on Slide 32 we have the petition. They point to the demultiplexer 230, as a whole, as the claimed circuitry that selects n desired channel C1 through Cn, okay?

Now, going to Slide 33, what that circuitry outputs is all of channels C1 through Cn. It doesn't output a subset, it doesn't output one of them. So the circuitry they point to as the circuitry that selects the desired channels is all of those, not just one.

JUDGE LANEY: So, your point being, on one level, you can argue that, sure, that's desired, but that's not a desired one that you want to output -- it's not necessarily a desired one that you would want to output into the demodulator. We don't know what that's going to be until you get to the selector 240.

MR. HENDIFAR: Correct. And they point to all of this. So, Slide 33, they point to all of Zhang's Figure 3 as the claimed circuitry that does the selection. But even if -- going back to Slide 20 -- 31, I'm sorry. Even if C1 is desired channel for one element of that circuitry, just because that element happens to be tasked with extracting that one channel, that circuitry, as a whole, as shown in Slide 33, extracts all channels C1 through Cn.

So the circuitry they point to sends out all channels C1 through Cn, even though each of those channels C1 through Cn may be desired from the perspective of that one circuit element that within that circuitry is tasked with extracting.

Does that answer your question?

JUDGE LANEY: Yeah. Okay. You're now --

MR. HENDIFAR: I have 20 more minutes, I believe.

JUDGE LANEY: I think it is stopped, actually.

MR. HENDIFAR: I'm at 100 minutes, based on what --

JUDGE LANEY: Well, I think this --

MR. HENDIFAR: No. On my timer, too, it's 100 minutes.

JUDGE LANEY: You sure? You sure you've used 100?

MR. HENDIFAR: Yes. Well, there was -- yes. Pretty much, yeah. But even if I leave only 10 minutes for my rebuttal, I think it's important that we -- because these are a lot of conceptual issues that I want to make sure I convey and answer all Your Honors' questions.

JUDGE LANEY: Okay.

MR. HENDIFAR: So I'm going to Slide 53, and I alluded to this. So, Slide 53, even if you assume Zhang channels C1 through Cn are a subset of all the input RF channels, even if you assume that, Petitioners still cannot rely on channels C1 through Cn because there they failed to show Limitation 1[E].

So, as we have in Slide 53, Limitation 1[E] -- and we have case law in our papers that "said" means you're referring to the same thing; I'm sure Your Honors are familiar with that -- but Limitation 1[E[said you output

said selected. So the same channel that you select in 1[D], you output to demodulators in 1[E].

Now, going to Slide 54, the problem is, if for 1[D] Petitioner relies on channels C1 through Cn as the desired channels, then those are not the channels that in Zhang are output to demodulators as channels D output. So then they failed to show limitation 1[D].

JUDGE LANEY: I mean, but aren't they?

MR. HENDIFAR: Yes.

JUDGE LANEY: But, I mean, aren't they sent to the demodulator?

MR. HENDIFAR: Cs? Not all of them, no.

JUDGE LANEY: Okay. Again, you're saying not all of them, but all the ones of C are sent to the demodulator?

MR. HENDIFAR: No, no. Not all the ones that are C -- all the ones that are sent to the --

JUDGE LANEY: All the ones that are C are sent to the modulator. It's just not -- how do we phrase this so it's clear?

MR. HENDIFAR: A subset of C.

JUDGE LANEY: So, all the ones that go to the modulator are Cs. It's just not all Cs are sent to the demodulator?

MR. HENDIFAR: That's true.

JUDGE LANEY: Okay.

MR. HENDIFAR: But it -- going back into Slide 54, the claim says, "select said plurality" and then "output said selected plurality." So our contention is, what you select is what you output to demodulators.

(Simultaneous speaking.)

MR. HENDIFAR: Okay. So this is Slide 58. That's the summary of our view of why Zhang channels C1 through Cn are not the claimed desired channels. So, based on at least our interpretation of Zhang that I explained to Your Honors, C1 through Cn are all the channels, not just the desired channels. That's supported by Paragraph 27 in Zhang that says an entire signal band in the channel. That's supported by Zhang's architecture, which has a selector. A selector would be superfluous if channels C1 through Cn are already the desired channels.

Zhang's design goal, which was to allow the user to quickly flip between different desired channels, so one desired, one undesired. And Zhang's prosecution history in Europe.

Also, C1 through Cn, in our view, are not selected based on two reasons. One is that they are not selected based on Petitioner's own construction. Their expert refused to opine that indiscriminately multiplexing is selecting under that construction. It's also not selected because all Zhang does is that it indiscriminately multiplexes all the channels, at least based on our view.

And, finally, even if all of that were not true, in the last box, Petitioner would fail to show Limitation 1[E] if they relied on channels C1 through Cn for Limitation 1[D].

Going to Slide 59, this is Petitioner's ultimate argument, where they rely on channels D, as in David, as the claimed desired channels. And that fails for two independent sufficient reasons. The first one is that it is undisputed that, based on Petitioner's reply construction of select channels, D1 to Dm are not selected. That's based on their own construction. Now, why is that?

Going to Slide 60, the claim requires selecting said plurality of desired channels. Petitioners provided a construction of "selected" in their reply that says "extracting a channel from a plurality of frequencies."

Going to Slide 61, you would recall that channel --

JUDGE LANEY: What do you mean by extracting?

MR. HENDIFAR: I'm sorry? Oh, extracting?

JUDGE LANEY: Distinguishing?

MR. HENDIFAR: No, no, no. Extracting is -- okay. Going to Slide 29, each of those chains extracts a channel. What that means is, you have frequencies, 1.5 to 2 gigahertz, that come in, and channel C1 is at the top 50, so you just extract that 50 from the rest. And then the second channel is the next 50 you extract. You just separate it and extract each one. So imagine if I have a pipe of water that comes in --

JUDGE LANEY: No, I've got it. Appreciate it.

MR. HENDIFAR: Okay. Now, Slide 62, we asked Petitioner's expert, under your construction of selecting that you have provided in that reply, that selecting requires extracting a channel from frequencies, does selector 240 perform a selection? And he said no. So he agrees with us, that under Petitioner's construction in the reply the selector doesn't select, which is odd. It shows that their construction is really odd, but that's the import of their construction.

Which should be sufficient to deny the alternative based on D, going to Slide 63, because Petitioner would then have failed to show that channels D are selected based on Petitioner's own construction of what selecting requires. But even without the construction, Petitioner's reliance on channels D, as in David, fail because -- and we've already touched on this,

Slide 65 -- channels D, as in David, are not selected from the same plurality of frequencies that Petitioner relies on for Limitation 1[C]. And the claim requires that the same plurality of frequencies are digitized in 1[C] and selected from in 1[D]. And it's undisputed by the experts.

So, going to Slide 69, both experts agree that the plurality of frequencies that go into the channel demux, that's the yellow, is a different plurality of frequencies that comes out of the channel demux. That's channel C1 through Cn.

Okay. So, going to answer your question about, okay, what about if you look at both circuits together? So that's Slide 71. Petitioner comes back and says, well, we relied on both Zhang channel demux 230 and selector 240 together as the claimed circuitry that performs selecting channels D1 to Dm from the input to the demux.

But, going to Slide 32, the fact that Petitioner is trying to draw a black box around the inner workings of Zhang doesn't change the fact that Zhang selects channels D1 through Dm not from the yellow input, but from channels C1 through Cn. So you can't hide the inner workings of Zhang and say ignore that, because, going to Slide 73, Petitioner's argument is premised on the assumption that it necessarily follows -- their argument is an assumption that it necessarily follows that what's output from the black box is selected from the input of the black box. And there's no support to show why that's the case. It's not the case, if I have a black box with an input signal and a bunch of output signals, that the output is necessarily selected from the input signal.

Furthermore, going to Slide 74, their argument renders the "select" limitation superfluous because if output of the desired channels would mean

that those are necessarily selected from the input of that receiver, then you wouldn't need a selecting limitation that would select desired channels.

I also want to address this annotation at Slide 77. In the reply, for the first time, they draw a box around just two of Zhang's mixers, multipliers, as opposed to all of them. And they somehow suggest that the Zhang multipliers in purple just extract desired channels that are sent to demodulators. And that's not accurate.

Going to Slide 78, this annotation is wrong because the demultiplexer 230 on the left doesn't select any two channels. It demultiplexes all channels C1 through Cn. The demultiplexer doesn't know what's going to be selected, doesn't care what's going to be selected. There is no circuitry in Zhang that somehow says there is a feedback loop that allows the selected -- the demultiplexer to just extract desired channels. The demultiplexer just multiplexes everything, and the selector subsequently selects desired channels.

I'm going to wrap up quickly in a moment, but I want to go to Slide 80, and I want to highlight that Petitioner groups together all the claims into one argument, but the claims have distinct languages, so we don't believe it's appropriate. So if Your Honors were, for instance, come to a conclusion about the '362 patent, that conclusion doesn't necessarily follow for the '866 patent, because there are materially different characteristics in these patents.

I want to briefly also touch on --

JUDGE LANEY: I think it's probably best -- we only have ten minutes left --

MR. HENDIFAR: I'll keep it for the --

JUDGE LANEY: I think we can save it for the surrebuttal.

MR. HENDIFAR: Okay. Thank you very much.

JUDGE LANEY: Petitioner, would you like to take a --

MR. MEEKER: Yeah, if we could take just --

JUDGE LANEY: -- maybe one- or two-minute break? And we can get back --

MR. MEEKER: A two-minute break, that would be great.

JUDGE LANEY: Two-minute stretch. Okay. So it is now 12:23. We'll come back at 12:25.

MR. MEEKER: Thanks, Your Honor.

(Whereupon, the above-entitled matter went off the record at 12:23 p.m. and resumed at 12:29 p.m.)

THE REPORTER: On the record.

MR. MEEKER: Thank you, Your Honor. In the direct, Judge Jurgovan asked a question that -- I answered the question, but I don't think I answered the question you asked, and I'd like to correct that issue now.

You asked about whether there are -- whether Zhang discloses there are noncontiguous channels between the channels being selected. I think that's what you asked me about. And Slide 28 of Petitioner's demonstrative addresses that. So what's highlighted in yellow says, because the swath of channels is not contiguous, this swath includes the desired channels as well as the undesired channels.

So, that's the '362 patent. So they define noncontiguous channels as the undesired channels. Well, the television channels as the desired channels, and the noncontiguous channels between the television channels is undesired.

Now, if you look at Zhang Paragraph 48 -- so what I didn't refer you to was Zhang Paragraph 48, upper left. It says, "For example, the RF channels can be in different frequency bands. Also, the RF channels need not be contiguous." So that same disclosure that we have in the '362 defining desired and undesired channels being contiguous to noncontiguous also is in Zhang.

So, I don't know if -- I think I've addressed your question now.

JUDGE JURGOVAN: Yes, you did. Thank you.

MR. MEEKER: Okay. So, Judge Wormmeester, you asked a question about Paragraph 23 and 24. And I want to address your question specifically. So can you bring up Paragraph 24, Craig?

In Paragraph 24 of Zhang, it says in here -- let me just get my notes here. At the very bottom of Paragraph 24, it says, accordingly, one RF channel can provide a variety of data streams, some of which are selected by a subscriber, e.g., audio, video, et cetera. And in the previous sentence, it says, a given RF channel carries one or more content channels.

So an RF channel could be the entire content channel, or it could have more than one content channel, which are data streams that are superimposed on the channel's carrier frequency and intended to be accessed by a subscriber. So now we know that those RF channels, the C1 to Cn, are the ones intended to be accessed by a subscriber. We also know that some of those, some of the total channels, are selected by a subscriber.

Then it says, other data streams might be pre-programmed or selected by a program provider, e.g., conditional access. So some of those streams for conditional access programs may be selected by the program provider

and provided as an option to the subscriber. Some may be selected by the subscriber and displayed on the screen.

So, there are -- when we talk about desired programs, there are two categories. The subscriber can select some. The provider can select some. And we know that there's some, not all. In each case, it's some of the data streams being selected.

Then, Judge Laney, you asked a question. You said, what is desired? Is it desired is something you want? And I agree with that construction. I think it's the only construction that covers all of their embodiments. So if you look at Patent Owner's construction, he said Zhang --

JUDGE LANEY: So on that point --

MR. MEEKER: I'm sorry. Go ahead.

JUDGE LANEY: On that point, I think, as I understand Patent Owner, they would kind of tweak it to say desire is something you want to send to a demodulator.

MR. MEEKER: I understand. Let me show you why that's wrong.

JUDGE LANEY: Okay.

MR. MEEKER: It doesn't cover all their embodiments. So if you look at the embodiment of Figure 4 -- can you put that up, Craig? So, in the opening, I discuss Figure 4 and how it basically reorders the channels and then sends them downstream. It's not sending them to a demodulator.

I don't need Demonstrative 4. I need, actually, Figure 4 of the patent.

So, Zhang has an alternate embodiment where it takes all these channels, and all very disparate channels, and it reorganizes them, reorders them, and gets rid of all the noncontiguous channels and then sends the channels that the -- that they want, like the channels somebody wants,

downstream to be processed by other devices, including other tuners, et cetera. But it groups them together so those tuners are cheaper to make and build.

JUDGE LANEY: I have Figure 4 up, and I --

MR. MEEKER: Okay. I'm sorry. So, yeah, in Figure 4 of the challenged patents, you'll see that, on the lower left, there are bands, and there are four bands that are labeled desired channels, F1, F2, F3, and F4. It extracts those four bands, reorganizes them, and then outputs them, not to a demodulator, but downstream to another tuner so someone can tune in on one of those four channels.

So, in this example -- and I think, if you look at the claim language, which Your Honor pointed out, if desired channels included the demodulators, it would make the claims redundant. Like, there would be no reason for the extra elements in those claims, the claim sending it to a demodulator, because that would be in the definition of desired channel already.

JUDGE LANEY: And I don't -- so, just to push that a little bit, just to make sure I'm clear, I'm not so sure they're saying it had to include the demodulator. It's just channels that would be sent to a demodulator.

MR. MEEKER: Okay. I understand. So, in Figure 4, they're not sent to a demodulator, not all those channels. They are sent downstream to a tuner, which, you know, can demodulate them or not. We don't know what happens to them downstream.

JUDGE LANEY: They're still called desired channels?

MR. MEEKER: They're still called desired channels.

JUDGE LANEY: Even though they may or may not be demodulated later.

MR. MEEKER: Correct. That's why your construction is more correct than what the Patent Owner put forth for his construction of that.

And then I thought I heard some representations about Time Warner systems. And, now, maybe it's a hypothetical, but I -- you know, there were comments about 10-megahertz channels. Like, Time Warner uses 6-megahertz channels, and that's the North American standard. That's what Zhang teaches. And I think the '362 patents have that as well. Europe uses 8 megahertz. I'm not aware of anyone using 10 megahertz.

And Time Warner, like, just -- it's incredible to believe that there's any set-top box manufacturers selling to hundreds of millions of users, or tens of millions of users, that is demultiplexing, that has a different multiplier at this timeframe for every conceivable channel coming in on the digital. So I would just say that is not an uncontested fact by the Petitioner. We think C1 to Cn is already a selection. It's a smaller subset of channels. And then D1 to Dm can be even smaller than that or the same as C1 to Cn.

Okay. If we can go to our rebuttal slides for our rebuttal, I plan to use both Patent Owner slides and Petitioner slides. So, Your Honor asked Patent Owner if the contested issues are all the selection limitations, and the answer is yes. Like, this slide shows that the only limitations in dispute in the independent claim are the independent claims and those limitations related to selecting.

JUDGE LANEY: Can I push that just a little bit? Because what I understand you saying is, yes, that's true. But they say it's part of the story, only in the sense that, if what you're saying -- what you're relying on does

qualify for select, then it doesn't satisfy the output said selected plurality of television channels to a demodulator as a digital data stream.

In other words, while they're not necessarily disputing the last element, they are, to the extent that you're relying -- whatever Petitioner is relying on for this element, if it satisfies it, then it runs afoul or the last element. Does that make sense?

MR. MEEKER: It does. So --

JUDGE LANEY: So I would like to press that a little bit.

MR. MEEKER: I think it doesn't for two reasons, right? So, first of all, the disclosure is, n can equal m, right? It's some, or it's one or more than one. And then, secondly, if we go to Slide 4 -- go to our -- actually, to Petitioner Slide 13. Here, you'll see that they're trying to say that they claimed the selection being done by the multiplier, right? C1 to Cn. They're --

JUDGE LANEY: Well, let's use the claim language, because I think it's a little bit more helpful.

MR. MEEKER: Okay.

JUDGE LANEY: I think what they're saying is that that's where the frequencies exist. I think what they're saying, once you start talking about C1, C2, C3, we now have channels, right? So, frequency comes in, you then produce channels, and selection is selecting frequencies to channels. And I think what they're saying, the reason why 240 doesn't come in the plan or why it runs afoul, if you try to rely on 240, is because 240 is making a selection from channels. It's not making a selection from frequencies.

MR. MEEKER: But what is making that selection from the channel? What is the claimed element making that selection?

JUDGE LANEY: So, I mean, let me put up the language, because I do want to --

MR. MEEKER: In every case, it's the digital front-end or the digital down-converter. So if you go to -- back to our slide, Craig.

The physical element either isn't specified at all, or it's the whole big box, digital front-end. So there is no doubt that 230 and 240 are the digital front-end. And it's the thing between the demodulator and the A-to-DC. In every case, that digital front-end, taken as a whole, selects the channels from the A-to-DC and outputs them to a demodulator.

JUDGE LANEY: So what you're -- just to make sure I'm understanding what you're saying. You're saying we're kind of -- it's kind of why -- as it is always in electronics, it's kind of, where are we going to start drawing these boxes?

MR. MEEKER: It's a box-drawing exercise. That's exactly right.

(Laughter.)

JUDGE LANEY: All right. And so we got the front-end, which is 230, which is the entire box that includes --

MR. MEEKER: The parallel serial converter, which is 240.

JUDGE LANEY: And so you're saying the frequencies are coming into box 230?

MR. MEEKER: Yes.

JUDGE LANEY: And the selected channels are getting output to the --

MR. MEEKER: Demodulator.

JUDGE LANEY: To the demodulator.

MR. MEEKER: Yes.

JUDGE LANEY: Okay.

MR. MEEKER: And their whole thing is the digital front-end. And what the claim claims is a digital front-end or a digital down-converter, but it's the box that includes the serial-to-parallel. This claimed output is a serial line. So inside of that is a serial-to-parallel converter, which is 240.

JUDGE LANEY: Okay.

MR. MEEKER: So, no matter how they slice it, we still win. I think we've lost our remote judges, so --

JUDGE LANEY: Which one?

THE REPORTER: Both of them. Oh, the screen just went off.

JUDGE LANEY: Oh, they're still up here, but I don't know why they're --

THE REPORTER: They're probably on timers.

MR. MEEKER: Oh, okay. I'm sorry. Right at my "a-ha" moment.

(Laughter.)

JUDGE LANEY: No. I can see them, but it --

MR. MEEKER: Oh, okay. All right. No problem.

JUDGE LANEY: I don't know why the televisions --

MR. MEEKER: Yeah. Okay. There we go.

JUDGE LANEY: There you go.

MR. MEEKER: All right. So, Craig, could you put back up that claim language?

Well, we have one example claim here, but --

JUDGE LANEY: Yeah.

MR. MEEKER: It's digital circuitry configured to select an output. Well, what is the digital circuitry? It's 230 and 240. It's the digital front-end

or digital-down converter, whatever they want to call it. It literally reads on every claim. If you go back to the claim language, what -- based on what they've admitted, and you apply the claim language, it's just a question of law.

In fact, the Patent Owner, one of the first things he said when he stood up, and I wrote this down as a quote, he said desired channels -- he said, no dispute that all channels come in, and only desired channels come out of Zhang. He said that. That's the -- if you go back to the transcript, you'll see that quote. It's the one thing he stood up when he said there's no dispute, and he admits it. Once he admits that, and you apply the claim language to that admission, and throughout his whole briefing, there is no other issue in this case, you just look at the claim language, apply it to that admission, and this case is done. Every one of these claims --

JUDGE LANEY: So let's just -- I hear your argument. Let me go back into the nuances, because I want to make sure I'm fully getting this.

MR. MEEKER: Okay.

JUDGE LANEY: So it says, select a plurality of desired television channels from said digitized plurality of frequencies. And so I think I misspoke before. I said 230 encompasses everything, but 230 and 240, at least in the figure of Zhang, are -- or are shown as two different things.

MR. MEEKER: They are. But, together, they're the digital front-end. If you look at his dependent claims, he's claimed the demodulators in his digital front-end.

JUDGE LANEY: But I thought Zhang's 230 is defined as the digital front-end.

MR. MEEKER: That -- no. All of Zhang is defined as the digital front-end.

JUDGE LANEY: Okay. So all -- so --

MR. MEEKER: It's 230 and 240. And they have their digital demodulators, which would be 250 in their dependent claims. We've cited the digital demodulators from Zhang as being in the digital front-end.

JUDGE LANEY: Okay. I'm just getting -- you know, there's a lot of --

(Simultaneous speaking.)

MR. MEEKER: Yes. I do have slides on this. If we -- and in our petition, we cited those dependent claims as well, which I can get to. But they have -- Craig, do you want to bring up those dependent claims real quick?

JUDGE LANEY: But in our box-drawing exercises, or exercise, we've described the digital front-end as -- what we're referring to as digital front-end is you would draw the box around both 230 and 240?

MR. MEEKER: Correct. Except, like, in their patent, they also draw it around 250, which is the demodulators.

JUDGE LANEY: Right. But --

MR. MEEKER: Because of their dependent claims. They say the digital front-end includes --

JUDGE LANEY: The demodulator.

MR. MEEKER: -- the demodulator.

JUDGE LANEY: Okay.

MR. MEEKER: So their claims have drawn the box really big. All the way -- not only the serial-parallel interface, but all the way out to the

demodulator. And if you draw the box that big, their admission is going to cover every finding. And they've drawn their own box. I didn't draw it. If you look at their dependent claims, they've drawn the box, in every case, on their dependent claims.

JUDGE LANEY: So -- but then I guess the -- even looking at that big box, we're making -- I guess, the -- the selection of -- I want to set aside even just desired channels. I just want to understand. The selection of channels from frequencies is occurring in the 230 within the -- well, right now, I don't necessarily -- I just want -- I know it's all -- it's a box-drawing exercise, but I want to understand what's happening. So have that -- where frequencies meet channel is at 230.

MR. MEEKER: Yes. So, bring up Slide 3 of Petitioner's demonstratives. So in the -- yeah, in the purple box, that's their digital front-end.

JUDGE LANEY: And that's where frequency meets channel?

MR. MEEKER: That's where frequency meets channel. Like, those frequencies, the A-to-DC, include the entire frequency spectrum.

JUDGE LANEY: Okay. And what about the fact that -- what about the fact that, like, in 240, box 240 -- if we can go back. I just -- for this, I'm just trying to picture some things in my head. I'd like to go to Figure 2.

MR. MEEKER: Okay. So, Figure 2 is shown at the top here. Zhang's Figure 2.

JUDGE LANEY: Well, it is, and it's not. I mean, it's modified, but just --

MR. MEEKER: Oh, okay. You want the original Figure 2? We can put that up. Yes.

JUDGE LANEY: So, 230, I have frequencies coming in. Now I have channels coming out. Then I have the selector at 240. And as I understand what Patent Owner is saying, again, is that selector is where you're kind of turning channels into desired channels. And just what understand their argument is, and then I want you to address it. But so that's kind of where they're saying the channels are turning into desired channels. And the reason that's problematic, as you look into the claims, is the claims are saying what's selected from the frequencies has to be the channels that are desired that are output to the demodulator.

MR. MEEKER: And I would say it's just a box-drawing exercise. Like, the digital channel coming out of the demux is the exact same, in some embodiments, as the digital channel coming out of the demodulator. That is the same data stream. Whether it goes through the end by end, the selector, and in the D1 and out to the demodulator, it is the same data stream. So it's selected from the analog to digital. And it's output through the demodulator to a transport stream.

JUDGE LANEY: So show me how -- this is what I would understand, perhaps would be of benefit to me, show me why you're saying it doesn't.

MR. MEEKER: Okay.

JUDGE LANEY: Or why it's a distinction without a difference. The long way would be -- you have -- 230 turns into the channels. I now have all these channels. Now, I have to say, okay, now I want Channel 276. That's my desired channels. Now I take those channels and I send those to the demodulator, okay?

MR. MEEKER: Correct.

JUDGE LANEY: What I understand Patent Owner to be saying, but just let's -- even if they're not, this is what I kind of understand. They're saying, well, no, the invention is -- it increases efficiency, because we no longer have to identify the channels and then pick from within those channels to then send to the demodulator. I'm going straight to picking the channels and that's going straight to the demodulator. So there's an efficiency gain right there.

MR. MEEKER: They're saying they're more efficient. But they still have a serial-to-parallel converter. They still have a one by -- n-by-1 selector. Like, they're still going through a selector. They're not getting any efficiency. If it is coming out in serial, in their patent, they're not getting any more efficiency. It's there. They just didn't show it.

JUDGE LANEY: Okay.

MR. MEEKER: There's no efficiency gained there.

JUDGE LANEY: So you're saying --

MR. MEEKER: It's got to have at least two choices. One is --

JUDGE LANEY: In other words, you're saying no matter what, a select -- when you're coming from frequencies to a selected channels, you're having to get those things to channel and then decide from the -- in other words, I think -- so let me back up a little bit more. Maybe this is a way to describe it.

If I have all these frequencies and I can simply pluck out the very specific channels that I want and send those to the demodulators, versus having to deal with all the channels that are coming and then pluck from those channels?

MR. MEEKER: You're still -- he's sending them out on a serial interface. So he's got to pack all of his whatever n is -- if n is 4, he's got to take all four of his channels and put them through a 4-by-1 selector. So all four parallel channels then go out on one serial channel to a demodulator. He has the exact same circuit in there. Now, Zhang's circuit's more sophisticated. But this claim is comprising.

JUDGE LANEY: Right.

(Simultaneous speaking.)

MR. MEEKER: He has an n-by-1. We have an n-by-m selector. Our selector is far more sophisticated than his selector, but he's got to step back in the arc on his selector. It doesn't give him any more efficiency. He's going through a selector. He's got to get down to one channel or it wouldn't come out serially.

He's got four data streams coming out and he's sending them out serially. He has to go through a selector to get those four data streams out on one. He's going to have a 4-to-1 selector. That thing on the right, it says "serial or parallel data interface". In the case of serial, all four have to go to one demodulator. In the case of parallel, all four go to four demodulators. So he's going to have a selector in there. He's not getting away from his selector.

JUDGE LANEY: But you still have a selector, but it --

MR. MEEKER: His selector's simpler than ours.

JUDGE LANEY: His selector's selecting from the frequencies, though, and not selecting from the channels?

MR. MEEKER: No. The frequency has already been selected. Like, it's still coming out as a single stream. And Zhang also selects from the

frequencies. If you look at 230 and 240, Zhang selects from the frequencies. If n = m, it's identical to his device. If it's an n-to-1, then it is identical to his device. Like, we have more options coming out, but a subset of our options are everything he's claimed. Like, it's comprising, so -- and it's the whole box. Not a single claim claims what comes out of that multiplier. Every one of his claims only -- either doesn't mention hardware at all, or it claims the entire digital front-end, which is all the way out to the multiplier.

JUDGE LANEY: I guess that's what I'm -- I guess that's where I'm getting a little bit --

MR. MEEKER: So, bring up the claim language. We summarized it, Your Honor, because we knew it would be a sticking point. And it was harder for me, so I asked for a summary slide. So let me put up our summary slide. And if you apply the claim language, it's now just going to be a question of law over what they've already admitted. So --

MR. KRONENTHAL: On our Slide 13?

MR. MEEKER: Our Slide 13. Petitioner Slide 13. It's strictly a matter of law in this case. And we're not giving up on our argument that we win on C1 to Cn, because we don't believe C1 to Cn is every possible channel.

JUDGE LANEY: Yeah.

MR. MEEKER: Like, that is not something one skilled in the art would believe. But assuming they're right on C1 to Cn is every conceivable, like, then, if you look at the claim language, the '362 Claim 1C, it's just "select said plurality of desired channels from said digitized plurality of frequencies." That's from the A-to-DC. So the selection is just from the A-to-DC, and the output of said selected plurality of channels to a demodulator

is a digital data stream. There's no doubt that 230 and 240 does that. There's no --

JUDGE LANEY: Where's the -- so I think they did -- and I do want to give you an opportunity. I think he did do a good job of responding to that part I was --

MR. MEEKER: He wants to put a special meaning on "select." He wants to rewrite the claim so it says select by the multiplier.

JUDGE LANEY: Well, no, no --

MR. MEEKER: Select using a multiplier.

JUDGE LANEY: I think I'm saying something different. So where it says in Zhang, Paragraph 28, RF channels C1 to Cn contain content channels that are selected or used by subscriber. And I think you pointed out the preceding sentences give that context to indicate that, when it says "are selected or used," it's saying C1 through Cn is a greater -- to the Venn diagram, it's the outside circle. And the selector's taking from in that circle. So the C --

MR. MEEKER: And we disagree with that construction. So he's saying C1 to --

JUDGE LANEY: Well, we're not talking about construction. We're talking about interpretation -- or, you know, what the evidence supports or not.

MR. MEEKER: Yeah. We believe that C1 to Cn is not every channel that exists. And, in Zhang, that's VHF, UHF, all the cable TV channels, and all the satellite channels.

JUDGE LANEY: So you're going to what Judge Wormmeester talked about, which was Paragraph 23. That instance that --

MR. MEEKER: Yes. There are multiple teachings that it can be -- n can be 1, n can be 35, n can be some --

JUDGE LANEY: I agree it can be anything, but what makes it --

MR. MEEKER: So, n does not have to be -- their argument only works if n is every conceivable frequency coming in.

JUDGE LANEY: I see what you're saying. And not just every conceivable frequency, but -- yeah, of every frequency coming in, regardless of whether it's satellite, cable, or --

MR. MEEKER: Correct. And even if that were true, there's still a selection because you're selecting the cable channels from all the other stuff that's in between those cable channels, the noncontiguous stuff. So we say we still win even if it were to bring in every television channel, which he seems to admit it does. Like, that's his position. And then we're saying, further, n does not have to be every possible content channel out there. Like, n doesn't have to be the sum total of all those. Like, if you don't subscribe to satellite, you're not going to be decoding satellite channels.

JUDGE LANEY: Right.

MR. MEEKER: If you don't subscribe to the HBO package, you're not going to be demodulating all the HBO channels.

JUDGE LANEY: But let's just take the TV example, let's say it is all the TV channels. You're saying that still works because you're still -- it may be a different scale, but even what they're describing the advantage of the -- how they're describing the advantage of the invention, i.e., you're grabbing -- you're not having to select from channels; you're selecting from frequencies the channels that you're going to send to the demodulator --

MR. MEEKER: Correct. Zhang still does that.

JUDGE LANEY: Zhang still does that.

MR. MEEKER: It's exactly like their hardware. They're trying to say their big N in their multipliers is different than our little n. They're trying to say, like, n -- their n isn't our n. Like, they have n number of multipliers and they're saying our n number of multipliers is every conceivable channel there could be. And we say that is not -- this is an obviousness case.

Like, it's not there, even if it were an anticipation case, because we teach n can be 1, n can be some, not all. And we teach n can be 35. In every one of those cases, we are selecting from all the channels a subset, and then outputting to the demodulator. And it all occurs within a digital front-end, which they've defined by their dependent claim differentiation as the entire system from that A-to-DC all the way through to what's being put out to the display terminal, all the way through the demodulator.

JUDGE LANEY: And just if you could for me one more time, real quick, what are the best slides for showing that n can be a subset?

MR. MEEKER: I'll put that up. So the -- it's Petitioner's Demonstrative 25. If we look at Claim 17, it says "one or more low-pass filters." That's in Zhang. So, here, n = 1, at least, or more than 1. So Zhang has an express teaching that it doesn't have to be all. So Patent Owner saying Zhang only teaches all, and in the claim it says one or more, that's clearly a teaching that Zhang does not require all.

JUDGE LANEY: And that's because low-pass filters is the n, because that's what you're separating out? In other words, each time there's -- each low-pass filter is going to be separating out a different --

MR. MEEKER: Correct. And their only response to this argument is this only appears in the claims of Zhang. But Zhang was published -- like,

published six years before even their earliest conception date. So this is part of the disclosure. 101 patent law. It is part of Zhang's disclosure, and it's one or more.

And then 21 says it's at least one numerically controlled oscillator, at least one complex multiplier, and at least one low-pass filter. So there is no doubt Zhang contemplates 1 or more than 1. It contemplates 1. Judge Wormmeester pointed out where it contemplated some. And then there's a specific example set at 35.

JUDGE LANEY: Okay. So, to be devil's advocate on that point, while that's true it can be any number, we need to make that connection between any number of a greater whole. In other words, a subset. I understand this establishes that n can be 1 through 10, 1 through 20, but that's not exactly the question we're asking. We're asking, you have 30 and n can be 10 or 20. Not you have 30 and n is 30. You have 10, n is 30. Well, in that example, yes, n is 1 or more. Because if n is 1 -- I mean, if we have 1 for channel and n is 1, then we're not a subset.

MR. MEEKER: Zhang teaches that at the input on the A-to-DC, you can have VHF, UHF, all the cable TV channels.

JUDGE LANEY: And it's that Paragraph 23 that I was just talking about before?

MR. MEEKER: No. Paragraph 23 is one place. It talks about satellite systems, terrestrial systems and cable systems.

JUDGE LANEY: And we should understand that to mean that all that is available for going into Zhang?

MR. MEEKER: It all goes through the A-to-DC.

JUDGE LANEY: Okay.

MR. MEEKER: And Zhang selects from that. And then it goes on. Like, it specifies, you know, all kinds of details on cable systems, et cetera. Like, it's -- it has a bunch of frequencies. Like, that's a lot of channels.

JUDGE LANEY: Okay.

MR. MEEKER: You take a look at all the satellite channels, all the cable channels, all of UHF, all of VHF, it's a huge number of channels. And Zhang has zero sub 35. That's a subset, by any stretch. And it says one or more it has the number n. And their patent has examples of four or everything. Like -- and they say everything's still a desired channel. So even what they say, their patent, one of their examples, is everything being a desired channel, or all the licensed spectrum.

JUDGE LANEY: Yeah. I understand your point, but I'll give you a few, you know, minute or two.

MR. MEEKER: No. No. I know we're out, unless there's any other questions from anyone else.

JUDGE LANEY: Judges, do you have any other questions?

JUDGE WORMMEESTER: None from me. Thank you.

MR. MEEKER: Thank you, Your Honors.

JUDGE LANEY: You have 10 minutes.

(Pause.)

MR. HENDIFAR: So, there are a few points I'd like to respond to. So, first, I'd like to draw your attention to Zhang's Figure 6 embodiments, which starts at Paragraph 41, and I will put it on the screen here.

So, Zhang Figure 6 embodiment is the only embodiment that actually puts the number to its m and n variables. So what it says, and it answers multiple Your Honors' questions, it says Figure 6 is a simplified high-level

diagram similar to Figure 2. It continues to say that the input can be cable, terrestrial TV system, satellite system and whatnot. Then it says that in this specific embodiment, the signal is sourced by a cable system, which suggests if you have satellite, cable, terrestrial, each one would have its own Figure 2. It's not as if the entirety of three different inputs going to one demultiplexer.

Then it continues to say the following, which is important. Paragraph 41 says the bandwidth in that embodiment is 540 to 750 megahertz. That's 220 megahertz of bandwidth. You see that?

JUDGE LANEY: Yeah.

MR. HENDIFAR: Sorry. Now --

JUDGE WORMMEESTER: I'm sorry, can you speak closer to the mic, please?

MR. HENDIFAR: Sure.

JUDGE WORMMEESTER: Thank you.

MR. HENDIFAR: So in Paragraph 41 of Zhang, Figure 6, it does explain that -- or suggest at least -- that if you have multiple inputs, satellite, cable and whatnot, each would have its own Figure 2. But, more importantly, if you continue Paragraph 41 of Zhang, it says that it its Figure 6 embodiments the input frequency band is 540 to 750 megahertz. That's towards the middle of the paragraph. So that makes it a 220 megahertz bandwidth as input into that demultiplexer, okay?

JUDGE LANEY: However, the next sentence does say it can be outside this range.

MR. HENDIFAR: Right. In this embodiment, it is 540 to 750. I'm not saying it's limited. I'm saying that's the numbers that is provided as an example, correct? I'm not saying it's limited to this range. No, not that.

Now, if you look at Paragraph 42, in this embodiment, in this Figure 6, there are 35 channels C, as in Charlie, and 20 channels D, as in David, that are desired. You see C1 through C35 are demultiplexed and D1 through D20 are selected demodulators.

Now, my colleague pointed out that each channel is six megahertz. That's true. Thirty-five channels C times 6 is 220 megahertz, which confirms channels C are all the channels in that entire embodiment. We numerically confirm that and it's the only numerical example in Zhang. 210, I apologize

So that's the only numerical example. Now, furthermore, if you go to your Petitioner's expert declaration in the '432 patent, Exhibit 1003, Paragraph 79, which I will also put on the screen.

JUDGE LANEY: Exhibit? Remind me of the exhibit, the paragraph?

MR. HENDIFAR: Exhibit 1003 in the '432. That's Paragraph 79.

JUDGE LANEY: You mean Exhibit 1002, right? Because three is --

MR. HENDIFAR: I apologize. Two. Yes. In the '432 IPR, Exhibit 1002, Paragraph 79 is also on the screen here. Okay. The sentence that starts on the last line of Page 53, this is Petitioner's expert. A digital channel demultiplexer 230 then separates signals of all the content channels -- all the content channels -- in a digital (inaudible). Example, channels C1 through Cn. While an n-by-m digital selector 240 selects and forwards only signals for a subset of content channels selected by subscriber. Example, channels D1 through Dm.

There may have been a slip of the tongue in this declaration, but that's really, truly what Zhang does. And this is the unfiltered portion, the open declaration before the newer arguments are contributed. So this also confirms the numerical example I pointed to Your Honors as Zhang, that channels C1 to Cn are all of the channels in that entire bandwidth.

Now, the other point was about the meaning of desired channels. The embodiments of the patent do not contradict what are proposed of as construction, and allow me to show that. So if I may refer Your Honors to the '362 patent, column 7, last line, through column 8, which I will now put on the screen.

So I'm going to first give you a highlights of what I'm about to say and then I'll go through the evidence. What Figure 4 does is the following. So, imagine you have a building and each of the units in that building want to watch one of channels. So what the Figure 4 Zhang embodiment does, it says, instead of my Figure 2, which was for one apartment, we may have two viewers, I'm going to do that for the whole building. So I'm going to take all of the channels that come in, I extract all of them, and then I will assemble the channel for each of those units. Whatever channel each of those units are watching, I will assemble those and I will send this to those units that they can demodulate it. So instead of each unit receiving everything, each unit receives just a selection of channels that are desired by all the units.

Now, we can prove that because if you go to the '362 patent, Column 8. I'm sorry, Column 7. In the last paragraph, it says that, even in the Figure 4 embodiment, which my colleague said does not go to the demodulators, it does go to the demodulators. It says the outcome version approach of Figure

4 provides several advantages for a conventional demodulators. First, and then we go to the Column A, Line 1. First, it allows the demodulator to operate the data converter at a lower data rate and the lower resolution, due to the fact that the continuous channels have a narrower bandwidth. So it confirms that even that assembled channels in Figure 4 are still going to demodulators down the stream. The desired channels are still channels that are going to be demodulated.

Now, the last point I want to make, or one of the last points, is the issue of drawing the box around more than one element. So if I may refer to Patent Owner's slide 71. So Petitioner does say, okay, we are going to draw this box, not just around the selector 240, but they on both the selector and the demux. So if you recall this argument, the context for it was, they rely on channels D, as in David as the desired channels. We said that channels D are desired, but they're not selected from the said plurality of frequencies that were digitized. And they come back and say, we are going to draw the box bigger so it includes the demux 230. So now if you look at the black box, the input is a plurality of frequencies, the outputs are desired channels, therefore, necessarily these are selected from.

JUDGE LANEY: Well, I just want to modify this just so you can keep going that. But it's not just that. It's the input's frequencies, the out's the desired channel, and inside the box is digital circuitry?

MR. HENDIFAR: Yes.

JUDGE LANEY: Okay. And I think they're saying the claim says digital circuitry. This goes in. This comes out.

MR. HENDIFAR: It doesn't say that. The claim says digital circuitry, you select desired channels, and the desired channels go out. It

doesn't say digital circuitry where the input is frequencies, the output are desired channels. And that's where the significance matters, because --- I have the claim language in Slide 70. The issue is not whether the black box 230-plus-240 is the digital circuitry. It is. The issue is not whether or not that overall circuitry selects channels. At some level, it does. The issue is whether channels D1 through Dm are selected from the plurality of frequencies that is input to demux.

So it's not that, in the abstract, whether the channels D1 to Dm are selected. It's that whether they are selected from the input frequencies.

So, going back now to Slide 72, even if you try to hide the inner workings of Zhang, Zhang still selects D1 to Dm from channels C. It doesn't select -- it doesn't go back and select D1 through Dm from the input frequencies. And Petitioner's argument, going to Slide 73, rests on the assumption -- so their argument really is this: if you have a black box, you have an input frequency, and you have a bunch of channels going out the other end, the bunch of channels that go out at the other end are necessarily selected from that input frequency.

That's the logic of their argument, is a necessary assumption for that argument. And that necessary assumption is not true for many reasons. One was, going back to Slide 72, if you look at the actual inner workings of the circuits, D1 through Dm are selected from C, not other frequencies. It's not an implementation issue that, oh, we had to filter the channels first or not.

As a philosophy issue, Zhang say I want to channelize everything and I select from those channels so I can quickly flip on it. As a philosophy issue, Zhang doesn't go and select directly from the frequencies.

And my colleague kept saying the patent is not more efficient. It defies logic to say it is not more efficient to extract just desired channels, as opposed to extracting everything and then selecting just desired channels.

Also, Mr. Meeker pointed out that the patent necessarily requires some selector --

JUDGE LANEY: I hope you're not going into -- I need you to start wrapping up. I think your time's up.

MR. HENDIFAR: Okay. So I'll be very quick. I have 30 seconds to go. Now, the Petitioner's --

JUDGE LANEY: No. This is actually the time where you're over. Just so you know.

MR. HENDIFAR: Okay. I'll be very quick. So Petitioner's logic that output necessarily means selection from the input also would render the select limitation superfluous, in Slide 74, because if all that was required was an input and an output, you wouldn't need a selecting step.

Also, the last point was, Slide 75, there are other claims from patents from the same specs that don't require the "from" portion. That just say "select," which means that the "from the frequency" means something.

With that, if there are any questions, I'd be happy to answer them.

JUDGE LANEY: Judges, do you have any further questions?

JUDGE WORMMEESTER: None from me.

JUDGE LANEY: I just would like to extend a great thank you to all the parties. I think you guys were extremely well-prepared. You've really helped us. You've made this extremely difficult and I do want to thank -- I thought this was extremely productive. Thank you all again.

MR. KRONENTHAL: Thank you.

MR. MEEKER: Thank you, Your Honor.

JUDGE LANEY: With that, the case is under advisement, and we're done for the day. We're off the record. Thank you.

(Whereupon, the above-entitled matter went off the record at 1:18 p.m.)

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