UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNITED PATENTS, LLC

Petitioner

- v. -

VL COLLECTIVE IP LLC

Patent Owner

IPR2022-01086

U.S. Patent 8,605,794

Deposition of IMMANUEL FREEDMAN, PH.D.

Conducted Remotely

Wednesday, July 19, 2023

10:03 a.m.

Reported by: Matthew Goldstein, RMR, CRR

DIGITAL EVIDENCE GROUP

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Deposition of IMMANUEL FREEDMAN, PH.D., conducted remotely:

Pursuant to Notice, before Matthew Goldstein, RMR, CRR, Notary Public in and for the State of Maryland.

A P P E A R A N C E S

ON BEHALF OF THE PETITIONER:

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C O N T E N T S

E X H I B I T S

(Retained by Counsel)

P R O C E E D I N G S

Whereupon,

IMMANUEL FREEDMAN, PH.D.,

being first duly sworn or affirmed to testify to the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

EXAMINATION BY COUNSEL FOR THE PATENT OWNER

BY MR. CARDENAS-NAVIA:

Q. Good morning, Dr. Freedman.

A. Good morning.

Q. Do you have any materials around you, any papers or anything like that related to this IPR proceeding?

A. Nothing at all. I'm very careful about such things.

Q. Okay. And do you have any files open on your computer or any applications running other than this Zoom proceeding we're on?

A. I have my time-logging software so I can log the time for this deposition.

Q. Okay. And anything else?

A. Nothing, nothing at all.

Q. Okay. Thank you.

And in case we need it, this is more just an administrative thing, would it be easier for me to drop, you know, exhibits from the deposition -- or from the IPR into the chat box or do you have access, could you access your declaration if you needed to?

A. I believe that the correct and best procedure is that you drop the documents into the chat box so I can be absolutely certain we are both looking at the same document.

Q. Okay. I'll be sure to do that then.

And you understand that you're testifying under oath here today?

A. Indeed I do.

Q. And you understand that means that you need to provide testimony that is truthful and complete?

A. Yes.

Q. Is there any reason why you cannot provide testimony today that is truthful and complete?

A. No.

Q. Okay. Great.

I will go ahead and drop Exhibit 1016, which is your supplemental declaration, into the chat.

(Deposition Exhibit 1016 previously marked for identification and retained by counsel.)

THE WITNESS: Okay.

BY MR. CARDENAS-NAVIA:

Q. And so that you have it handy, I will also drop Exhibit 1001, the '794 patent, into the chat, as well.

(Deposition Exhibit 1001 previously marked for identification and retained by counsel.)

BY MR. CARDENAS-NAVIA:

Q. And can you let me know when you've had a chance to download those and open them on your computer?

A. Sure. I'm trying to do so right now. The response is a little bit sluggish. Please

stand by while I try to access this.

Q. Sure.

A. I have Exhibit 1016 open, please stand by while I try and access the other one.

Q. Sure.

A. Yeah, I'm having some challenge with the computer here. It doesn't seem to be behaving properly. I have 1016 open, but I don't -- and your image appears to be frozen.

Q. Well, why don't we do this. Let's go ahead and proceed with 1016, and if we need 1001 for some reason, we can either address the computer issue at that time or I can also share my screen with Exhibit 1001 and direct you to the pertinent place.

So can we go ahead and proceed, Dr. Freedman?

A. Hold on one minute while I try and see what has happened here. For some reason the screen appears to be going black, and I do not know why. I have not seen this before.

I'm getting it connecting and

disconnecting almost at random, and I can't see what is taking place. The screen is going black. It says the display is connecting and disconnecting at random.

Q. Why don't we take a break then and --

A. Take a break. Let's say ten minutes. I'll reboot the computer, and let's see if that's what the issue is. I've never encountered this before. So it's unknown territory for me. Ten minutes, let's say.

Q. Okay.

MR. CARDENAS-NAVIA: Can we go ahead and go off the record?

MR. BOWSER: Yes.

(Recess from the record.)

BY MR. CARDENAS-NAVIA:

Q. Welcome back, Dr. Freedman.

A. Okay.

Q. And before the break, I had dropped Exhibit 1001, which is the '794 patent, and Exhibit 1016, which is your supplemental declaration, into the chat box.

Do you have access to those exhibits, or should I provide them again?

A. I do have access to those exhibits, and I have them open in another window.

Q. Okay. Great.

Could you please then look at your supplemental declaration, Exhibit 1016?

A. Yes.

Q. And please turn to paragraph 1.

Are you there?

A. Yeah, I'm scrolling. It unfortunately takes a little while to do the scroll.

Q. Okay. Please let me know when you have paragraph 1 of your supplemental declaration in front of you.

A. Yes, it's in front of me now.

Q. And I'm going to read starting at the end of the third line. It says, "I am being compensated at my usual and customary rate for the time I spend in connection with this IPR."

Do you see that?

A. Yes, I do.

Q. And we discussed this -- a similar sentence at your deposition last time.

Do you recall that?

A. Yes, I do.

Q. Okay. And you do not have a usual and customary rate; correct?

A. I have a usual and customary rate for various clients. My usual and customary rate for matters that stem from Unified is currently about $270 per hour. I would have to check to make sure. There are times in which I'm engaged by other counsel in other types of cases, and I tend to charge a different rate, typically the median rate for such -- for such experts in those cases, if I'm negotiating it directly.

Q. Okay. And so when you're hired as an expert by Unified, you have a rate that's about $270 per hour; is that correct?

A. That's correct. And this matter stems, I believe, from Unified.

Q. And when you're hired by companies other than Unified, you have a higher rate; is that

correct?

A. I typically base my rate on the median rate for expert witnesses in video technology as defined by the SEAK, S-E-A-K, an expert witness survey. That number is currently for most cases about $400 an hour.

Should I be hired through an external agency, I may receive the order of 400 to $450 an hour. However, retaining counsel may have to pay an additional fee, a surcharge, to that expert witness agency to retain my services.

Q. I see.

So you worked through an agency, and so you were compensated when you're hired by companies other than Unified around 400 to $450 an hour; is that correct?

A. I sometimes work directly with law firms, I sometimes work through agencies, and I sometimes work directly and indirectly with Unified and its external counsel. So now you see the full picture.

If I'm working with Unified right now,

the number is about 270 an hour for matters that stem from Unified. If I'm directly negotiating a retention agreement with a law firm and I'm directly negotiating that with retaining counsel, the number will be typically in the order of 400 to $450 an hour as of this time.

And should I be working through an expert witness agency, of which there are -- I have worked through a number of them, I would then still seek to receive 400 to $450 an hour, and retaining counsel would have to pay that agency a markup, whatever that agency charges.

Q. Okay. Understood.

And so this sentence where it says, "I am being compensated at my usual and customary rate," it should add when working for Unified Patents, and then that would make it correct?

A. That would make it explicit. It's correct as it stands, but it would make it explicit.

Q. Well, you have multiple usual and customary rates -- or you have multiple rates;

right?

A. I'm being compensated at my usual and customary rate for the time I spend in connection with this IPR. The time I spend in connection with this IPR is in support of Unified, and, therefore, I'm compensated at my usual and customary rate for Unified. We are discussing the best use of language. The statement is correct on its face, but it can be made more explicit.

Q. Okay. Well, I think we have some context to assess that at least. Thank you.

Could you please turn to page 15 of your declaration, the page with paragraph 26 on it.

A. Okay. Hold on one moment.

Yes, I see paragraph 26.

Q. And do you see paragraph 26 has Footnote No. 3 as part of it?

A. Yes.

Q. Okay. And figure -- and Footnote 3 says, "FIG. 1 shows a device performing the method according to an embodiment of the invention." Then there's a cite to the patent, to the

'794 patent.

A. Yes.

Q. Then it goes on to say, "I note that the '794 Patent does not describe any device other than the device in Figure 1."

Do you see that?

A. Yes, I do.

Q. In your view, what is the device in Figure 1?

A. The device in Figure 1 is a device for fragmenting a -- what is likely a video data file and an audio data file, according to fragmentation rules governed by a bit stream syntax description file and producing segments that corresponds to those fragments.

Q. Is the device in Figure 1, is it software, hardware, a combination of the two?

MR. BOWSER: Objection; form.

THE WITNESS: Are you asking me what did it say in the patent or whether I discuss this in the declaration, or are you asking my general opinion as to how this may be implemented?

BY MR. CARDENAS-NAVIA:

Q. I'm asking you for what your opinion of the device is in Figure 1 of the '794 patent, if you have one.

A. Well, I don't think I opined on that in my declaration as such. And I don't recall the patent being explicit about how it can be implemented. From general knowledge, such systems can be implemented sometimes in software, sometimes in firmware, and, if necessary, at very high -- for very high-speed applications, they can be implemented in special purpose hardware.

Q. Why did you note in this Footnote 3 that in your view the '794 patent does not describe any device other than the device in Figure 1?

A. Because so far as I can see, there's no other -- there's no other explicit description, no other embodiment that has been described in the patent, in the specification of the patent other than that device. I would have to check to be specific, and perhaps I should indeed look at the patent, Column 3 at lines 46 to 47, so I can be

sure that we are literally on the same page.

Q. And my question was directed at whether this statement impacts the other parts of your analyses in your declaration?

A. Well, let's first make sure that we're both speaking about the same --

Q. What are you --

A. Figure 1 shows a device for performing the method according to an embodiment of the invention.

Figure 2 shows the contents of the description file and so on.

The impact on the opinions is really in terms of how the fragmentation takes place, what is the source of the first and second data segments and what is the output of this fragmentation operation. So this indirectly parlays into my understanding of first and second files and content-related data segments.

Q. Could you turn to paragraph 27 of your supplemental declaration? Let me know when you're there.

A. Yeah, I'm trying to. Hold on.

Okay. I see paragraph 27.

Q. I'm going to start reading from the second sentence. It says, "Patent Owner's proposed construction suggests that the content-related data segments themselves dictate how they will be ordered 'when rendered sequentially' because the data segments are 'ordered in a file' so that 'the file's contents' [will be] in their intended presentation order when rendered sequentially."

Do you see that?

A. Yes, I do.

Q. What do you mean when you say that -- when you suggested it's patent owner's view that the content-related data segments themselves dictate how they will be ordered?

A. So according to one of patent owner's filed documents, it may have been the reply or contingent motion to amend, I cannot recall offhand, patent owner appears to favor a construction in which the order of the segments is

determined directly from the order of the information in the file.

In other words, the patent owner's proposed construction is that the content-related first and second data segments are alternate files such that they will present the file's contents in their intended presentation order when rendered sequentially.

Q. Right. And so what I want to understand is what you mean when you say the data segments themselves dictate the order. I don't know what that means. And I'll offer something as maybe a way to give you a sense of what I wonder if you might mean. And that could be maybe if you think that the construction requires that the data segments themselves have metadata about their order or how it is that you believe the data segments would themselves dictate their order?

MR. BOWSER: Objection; form.

THE WITNESS: I believe that patent owner's proposed construction suggests that the order of the content-related data segments

perceived as a sequence of content-related data segments precisely corresponds to the order in which those segments should be rendered.

BY MR. CARDENAS-NAVIA:

Q. So it's your view that -- it's your view that the ordering is set by how the segments are ordered within the data file?

A. No, it is my view that that is the patent own- -- that is the meaning of the patent owner's proposed construction.

Q. Okay. Is it your view that patent owner's construction required that the data segments have metadata that indicates their order within a data file?

A. I did not read it that way. I read it that patent owner's construction seems on its face to say that because -- or imply that because the data segments themselves have an order of storage in a file, that the order in which they're stored in the file corresponds directly to the order -- to the sequential order in which they should be rendered.

Q. Okay. I just wanted to make sure I understood you on that.

Could you turn to page 34 of your supplemental declaration -- or sorry, paragraph 34 of your supplemental declaration?

A. Okay.

Q. It's on page 21.

Please let me know when you're there.

A. Yeah, there's a little bit of an overshoot here. For some reason it's being a little hard to control.

This is proving difficult to control. Hold on one moment, please. I want to try and avoid the overlay between the video of the Zoom and the Acrobat.

I'm not certain -- oh, there we go. Okay. I've got page 21 up.

Q. Okay. And I'm going to direct you to the last sentence of paragraph 34. It says, "A POSITA would understand the meaning of the term 'syntactical meaning,' as used in the definition of content-related' in Exhibit 1001" -- which is

the '794 patent.

A. Correct.

Q. -- "such that it is unnecessary to further define what the term 'syntactic meaning' would mean."

Do you see that?

A. Yes, I do.

Q. What do you understand "syntactical meaning" to mean?

A. Well, "syntactical meaning" has a meaning in the context of this art as being in accordance with defined syntactical rules. So there are two levels which are particularly relevant for this patent. Excuse me.

One is the syntax of the underlying video codec -- excuse me -- things like NAL blocks, network access layer blocks, which determine the allowed syntax of data elements such as bytes or blocks or macroblocks that are encoded in the video codec.

And the syntactic meaning, that is defined by the XML according to the bit stream

syntax description which provides the rules that the fragmentation module applies to select the audio and video data segments from the video and -- from the video file and the audio file.

Q. Anything else?

A. Well, we need to keep within the context of the patents. As far as I can understand, these are the only statements about "syntax" and "syntactical meaning" that are explicitly made in the patent. I would have to search to make sure that those are -- that this is the only meaning that is implied or explicitly discussed in the '794 patent.

Q. Well, one of the syntax -- syntactical meanings you identified was the syntax that is defined by the XML; correct?

A. It's defined by an XML script, yes.

Q. And this XML script would include information about the ordering of segments that are part of a data stream; correct?

A. It can do -- it can do so. At the time that the bit stream description syntax was being

developed, there were related and ancillary concepts in MPEG-7 and MPEG-21 that related directly to this. But I think that the -- that the choice of segments from the video and data files, the fragmentation is made by the fragmentation module, but the order in which the segments are to be rendered is the results of the application of the assignment rule, which matches identifying numbers.

So my understanding of how '794 is intended to work is that the fragmentation module provides information about which of the segments are to be extracted from the video file and the audio file, and the assignment rule matches identifying numbers in order to decide what the sequential order is in which they should be rendered.

Q. And what is the relationship between the fragmentation module and the XML script?

A. I believe that the XML script provides the rules or instructions on which the fragmentation module implements. To make an

analogy with reading a book, the fragmentation module could say -- rules could say, I want to read Chapters 1, 6, 19, and 31.

But the assignment rule will say, Well, actually, I'd like to read Chapter 31 first, then Chapter 6, then Chapter 19, then Chapter 1, if that analogy makes it somewhat clearer.

Q. In your view, does the assignment rule determine the order in which the data segments are sequentially output?

A. Yes, I do.

Q. The segments are required to be output in chronological order; correct?

A. If that is what is claimed in the patent. One has to be careful about that because chronological has a number of meanings. So it would be entirely possible that -- let's consider a video file. Perhaps one scene was captured in 2001, another scene was filmed in 2011, another scene was filmed in 2023. They may have been stored in the order in which they were captured, but that does not mean that that is the order in

which they should be output. Perhaps the 2023 scene is -- should come first, and maybe the 2001 and the other scene should be presented in a different order. So one should be very careful about the concept of chronology here. Sequence and chronology are not the same.

Q. And to make sure I understand, in your view, the -- in your view, part of the syntax is an XML script and the XML script has an order for the data segments, but the assignment rule can dictate that the data segments are output in a different order than specified by the XML script; is that correct?

A. The XML script can specify many things. It depends what the script is and what it is bound to. Although there is a more fundamental XML syntax, the -- whoever uses the syntax or defines the rules can define a set of elements. The set of elements are not necessarily stored in a particular order, but they can be retrieved and they can be accessed. And the order in which they're rendered, that is the order in which

they're sequentially output, is determined by an assignment rule.

There's not necessarily, and I would emphasize "necessarily," there is not necessarily an intrinsic order to the way these elements are stored.

To bring in another analogy, html, which many people are familiar with, on a page -- on an html page, there are many links. The links may be defined, and the order in which they are rendered can also be defined, but it doesn't mean that the contents to which those links link -- content to which they point is necessarily stored in sequential regions of storage.

Q. Are you aware of any examples in the '794 patent where the syntax does not include an order?

A. Let me look at the patent. There are a couple of figures that explicitly -- I think Figure 2 is one of them that explicitly show the syntax.

Okay. So I'm looking at Figure 2. So,

for instance, the header is a syntactic label. MV4:V0, V0 else, where it starts, what its length is, gBSD unit starts, where it starts from, what the marker is. VOP, where it starts, how much -- how much data from that starting position. And for P_VOP starting at 2903 length equals 64.

So I believe that there is no formal requirement for these gBSD units in syntactical labels to be formally stated in the order of their starting addresses. They really could, in my view, be in any order at all.

Q. My question was whether there's any embodiments in the '794 patent in which the syntax does not have an order?

A. My understanding is that the assignment rule dictates the order in which the content-related data segments are rendered. The -- as I repeatedly tried to state, the XML dictates what is being retrieved, but the assignment rule decides what order it should be rendered in.

Q. Dr. Freedman, I'm going to ask my

question one more time.

Are there any embodiments in the '794 patent you can point me to in which the syntax does not have an order?

MR. BOWSER: I'm going to object; asked and answered.

THE WITNESS: Yeah, I believe that I've answered this. If we looked at the BSD files, I do not see a requirement for there to be an order of the starting addresses. I see that in Figure 2, it was convenient to list them in the order of their starting addresses. But to the best of my knowledge, I'm reading the paper by Panis to which this relates, I do not see a formal requirement for that order in the BSD fragmentation file to be enforced.

BY MR. CARDENAS-NAVIA:

Q. Okay. And, Dr. Freedman, I don't believe you have directly answered my question. I do believe you've indirectly answered it by not identifying any embodiments in which the syntax does not have an order, but unless you have

anything further to add, I'm going to go ahead and move on.

A. No, I have nothing to add to that.

Q. Okay. You can turn to page 24 of your declaration -- of your supplemental declaration, it's paragraph 37.

Please let me know when you're there.

A. It's a little difficult to control this Adobe for some reason.

Okay. I've seen it. I've got it.

Q. Are you there?

A. Yes, I'm there.

Q. The first sentence says, "Second, Patent Owner's proposed negative limitation renders Claims 1 and 9 indefinite because it uses the relative and undefined term 'exact timing information.'"

A. Correct.

Q. Do you see that?

What don't you understand about the words "exact timing information"?

A. Okay. So "exact timing information" is

a somewhat nebulous concept. And I can point out its indefiniteness from a couple of angles. The first angle, though, is very simply exact timing information is impossible; that is, it is actually impossible to take -- dictate a 100 percent precise exact time at which anything is rendered. The laws of physics do not allow you to specify time with infinite precision.

And the second part of that is that I do not see any requirement for exact timing information or even less exact timing information, such as a timestamp with a finite precision to be -- to be implemented if the assignment rule can dictate the order.

In other words, such a timestamp is really superfluous. It's really not absolutely necessary if you have an assignment rule. It doesn't matter how long the segments are. So if you have Segment 1, let's say a normal length, 5 second segment, to a normal length, 20 seconds, 73 of normal length one hour, the assignment rule can determine the order in which they're output

without there being necessarily any imprecise, of course, timestamp information or any exact timing information, a concept which is actually physically impossible to implement.

Q. Okay. So in your view, exact timing information just does not exist?

A. Exact timing information as such is a concept that does not exist and is superfluous to the claims and to the patent if the assignment rule is implemented.

Q. Okay. But certainly you would agree that some times are more exact -- are more precise -- some timing infor- -- let me ask that again.

Certainly you agree that some timing information is more precise than other timing information; right?

A. In situations where timing information is provided or must be provided, and I don't think it's the case here, then there are -- then time can sometimes be presented to more or less -- and superfluously rendered to more or less precision.

Q. And in the context of aligning video, audio, or metadata data segments together, a certain amount of timing precision is expected; correct?

A. However, the assignment rule can do this very nicely. So if you, for example, have an audio segment that corresponds -- Segment 1 that corresponds directly to a video segment, Segment 1, you do not need to know the precise timing information so long as you know that they correspond to each other and should be sequentially rendered in a synchronized manner. Very often, especially historically, the video actually started a little bit before the audio because of latency of rendering and transmission.

Q. I'm glad to hear you're a fan of the patent and the assignment rule. So you sort of got at my question. I guess my question is: You know, historically and at the time of the invention, people working in this field of synchronizing audio and video had a sense of what timing accuracy was needed for consumers; right?

A. Yes. Yes, they did. And it was very relevant to development of video codecs at that time. So a rule of thumb would be that you really should synchronize video to the order of a video frame. You've got to get the frame right. And that the audio, I seem to recall that a canonical rule of thumb was about a quarter of a second. If you were half a second behind, that latency was far too long.

But that was roughly where one was in terms of audio/video synchronization at that time. And I recall that much work was done by manufacturers to reduce those latencies.

Q. And at the time of the invention of the '794 patent, timestamps were used for synchronizing an audio and video; correct?

A. The concept of timestamps and the extended concept of normal playtime came in, if I remember, from DAVIC, the Digital Audio Video Council, and was subsumed into the various MPEG standards. So timestamps existed, but my reading of this patent appears to suggest that they are

superfluous as such provided an assignment rule can match up the audio and the video, which piece of audio goes -- which data segments of the audio go with which data segments of the video.

Provided they've been matched up in some way, whether it is through formal timestamps or application, normal playtime or assembled by hand, you know, in a studio one segment at a time, the assignment rule determines how they match each other and the order in which -- so far as I can see, the order in which they must be rendered.

Q. You don't view the word "timestamp" as indefinite; do you?

A. I'm sorry, I didn't hear what you said. Speak louder.

Q. Do you believe the word "timestamp" is indefinite?

A. No, that's a really good question. If I was to make it precise, I would say "timestamp" in the context of the systems layer of MPEG or something like that, I'm thinking of things like the packetized elementary stream, "timestamp"

is -- "timestamp" can be defined and be a definite concept.

Exact timing information, on the other hand, is something that just doesn't exist, and the -- I perceive no need for such precision of timing information to implement this patent if an assignment rule can be provided.

So, for example, let's -- for example, one might consider a sequence of audio segments and a sequence of video segments. And let's say an individual in an editing system literally matches them up segment for segment. No formal timestamps will be needed to do that.

You know, even deeper, historically recording information on a film, the audio track and the video track would have been aligned literally by cutting, using the scissors to cut the film into the segments.

So while timestamps are convenient and useful and widely implemented, it's the matching up of the segments by the assignment rule that really ultimately dictates the order. And I

perceive timestamps as being superfluous to the main claims, the independent claims of this patent.

Q. Can you turn to page 29 of your supplemental declaration?

A. Yes.

Q. Please let me know when you're there.

A. Sure.

Q. I'll blow my nose real fast.

A. I'm on page 29 now.

Q. Could you look at paragraph 43?

A. Yes, I am.

Q. And I'm going to direct you to the last sentence of paragraph 43. It says, "The fact is that the bodies of Claims 1 and 9 do not require the first and second data files."

Do you see that?

A. Yes, I do.

Q. Okay. The body of Claims 1 and 9 do have the term "content-related first data segments"; correct?

A. I recall that that's correct, but I

should check it by looking at the patent.

Okay. I'm looking at Claim 1 here. The bodies recite content-related first data segments and content-related second data segments.

Q. Okay. And the term "content-related data segments" is defined in the specification of the '794 patent; correct?

And let me do something to help a little bit. Let me go ahead and share my screen, and I'm going to be showing Exhibit 1001, which is the '794 patent.

A. Okay. Very good. I see it.

Q. Okay. And I'm going to direct you to Column 4, starting at line 14. Do you see what I've highlighted there?

A. Yes. Oh, I see, yes.

"The term 'content-related' is understood to mean that first and second data segments have a syntactical meaning within the respective data file..."

Q. And you agree that this is defining the term "content-related data segment"; correct?

A. That the applicant is defining the term "content-related," specifically.

Q. Okay. And this definition includes a reference to the "respective data file" of data segments; correct?

A. To the respective data file. However, this is -- this is related to the fragmentation of the input video file and the input audio file. And my understanding of syntactical meaning in this context, as we've discussed already in questions you've asked and which I have answered, relates to the operation of the fragmentation module according to the definitions in the bit stream syntax definition files.

Q. Dr. Freedman, my question was: Does the patent's definition of "content-related" include a reference to a data file?

A. It states a syntactical meaning within the respective data file.

Q. So I'm going to now scroll to Claim 1. And the body of Claim 1 references "content-related first data segments" and

"content-related second data segments"; correct?

A. Oh, I see what statement you're saying. The term "content-related data segment" as such was never defined. It was the term "content-related" that was defined as having a syntactical meaning with respect to the -- with regard to the respective file.

Q. Well, you seem to be drawing a distinction between the term "content-related" versus "content-related data segments," but let me put that to the side for a moment.

You do agree that the term "content" -- well, I should say in your view, the term "content-related" is defined to have a reference to a "data file"; correct?

MR. BOWSER: Objection; form.

BY MR. CARDENAS-NAVIA:

Q. I --

A. So I see -- I understand what question you're asking, and I'm thinking about this very carefully.

Q. Well, my question, Dr. Freedman, to be

clear, was just to confirm, which I believe you've already testified to, that in your view the patentee's definition of "content-related" includes a reference to "data file."

Do you agree with that?

A. It does seem to use the term "content-related" to refer to segments of a data file from which it comes.

Q. And so by using the term "content-related" in Claim 1, it is incorporating that definition and incorporating the reference to "data file"; correct?

A. Only if we -- only if we believe -- okay. Only if we believe that the applicant has acted as his own lexicographer and has defined that term clearly and explicitly. If we believe that that term has been defined clearly and explicitly, then the term "content-related" refers to a file.

But if we don't believe that that is so, then in this claim the first and second data file are irrelevant because the body of the claim can

be fully understood in terms of the reference to the content-related data segments. That is the first and second data file as such recited in the preamble are irrelevant. And, thus, the preamble is, to the best of my understanding and to the best information that retaining counsel has given me, does not make the preamble limiting.

Q. Well, I'm not quite sure why you jumped to the preamble there, but I'm going to pull up -- I'm going to direct you to paragraph 28 of your supplemental declaration, Exhibit 1016.

Do you see my screen here?

A. Yes.

Q. And do you say that, "In my opinion, if the 'content-related...data segments' terms are to be construed, they should be construed to include only the explanation of 'content-related' in the specification of the '794 Patent. The '794 Patent explained that the term 'content-related' mean[s] that first and second data segments have a syntactical meaning within the respective data file."

A. Correct. Yeah.

Q. "Thus, if the terms 'content-related...data segments' are to be construed, they should be construed to mean 'that first and second data segments have a syntactical meaning within the respective data file.'"

A. Correct.

Q. Do you see that?

A. Yeah. Yes, I do see that.

Q. Do you have an opinion, one way or another, on whether the term "content-related data segments" should be construed?

A. I really should not offer any opinion, but as I've stated here, the district court judge construed that phrase to mean segments of content data that have a syntactical meaning within the respective data file, and that to me certainly seems to be a reasonable construction.

Q. Okay. I'll stop sharing my screen.

If you'd turn to page 36 of your supplemental declaration.

Let me know when you're there.

A. Page 36. I'm on page 36 now.

Q. And I'm going to direct you to paragraph 52. Please go ahead and read paragraph 52, and let me know when you're done.

A. Yeah, I'm trying to scroll down to it. I'm not sure why the scrolling is so sluggish.

Okay. I've read it.

Q. And in paragraph 52 of your supplemental declaration, you're describing what you believe to be is the syntax of the data file 1 in Sonohara --

A. Correct.

Q. -- is that correct?

A. Yes.

Q. And what is that syntax?

A. This file is -- results from the -- is produced from two separate files, an image file 11 and a sound file 12.

Q. And my question is: What is the syntax of data file 1 in Sonohara?

A. Well, to understand this, we really should look at Sonohara and the diagram in Sonohara. I think it's Figure 4 on the next page.

And this -- the corresponding operation to fragmentation here appears -- seem to be -- result from a system that reads the file header in Element 16, analyzes data in Element 17, and there is an image and sound data formation and renewal section, Element 13, with two components, a track identifying section and a data identifying section, 2 and 3, and, likewise, another one in 14.

And the whole system essentially compiles, I think, segments or sections from the image and sound files to yield a file containing what I believe corresponding to the first and to the second content-related data segments.

Q. Okay. And, Dr. Freedman, feel free to, you know, look at the proceeding and -- well, feel free to look at portions of your supplemental declaration if you need to kind of refresh yourself on Sonohara and what you contend is the syntax of the single data file 1, but I want to -- I want to understand what you contend is the syntax of single -- of data file 1 in Sonohara.

A. Okay. So we've discussed what syntactical meaning is, and in the concept of extracting video and audio data segments from video and audio -- from video and audio files or, here in Figure 4, image file and sound file. So the process -- so the process with the sequence of elements here that takes information from the header, possibly some external data, identifies, tracks, and, in my view, selects segments from the sound file and the image file and places them into a motion picture file that contains video and audio content-related data segments.

So the syntax here is very probably being -- probably relates to the external data in Sonohara or possibly some data or metadata in a file header in Sonohara.

Q. Anything else in Sonohara that you contend is the syntax for the data file No. 1?

A. I do not recall that Sonohara makes any explicit disclosure of precisely how this activity is carried out. Sonohara does not use this XML-based bit stream description syntax, but it

doesn't mean that Sonohara can't use information in a file header or some external data to decide which content-related data segments to extract from the image file and the sound file.

Q. To the previous question I asked, you said, "So the syntax here is very probably being -- probably relates to the external data in Sonohara or possibly some data or metadata in a file header in Sonohara."

What did you mean when you said "external data in Sonohara"?

A. Actually, looking more closely, I would like to walk back from that -- that statement. Because I do see in Sonohara that the data analyzer acts on information from the file reader and does not appear on the surface to operate on the basis of information provided externally.

I thought for a moment that the arrow led to some external source of information, but looking more closely at Figure 4, it doesn't. It only relates to information derived from the image and sound files and not to an external source of

information.

Q. So thank you for that clarification. I'll just tell you from my reading of your supplemental declaration, it seems that you identify the header and track identification numbers as the syntax in Sonohara.

Do you agree with that?

A. They're both elements of syntax, yes.

Q. Is there anything else that you identify as the syntax in data file 1 in Sonohara?

A. I don't immediately see anything.

Q. Okay. I did not either, for what that's worth.

MR. BOWSER: Objection. Is there a question?

MR. CARDENAS-NAVIA: No, I was checking my notes to see my next question.

I have no further questions.

MR. BOWSER: Give me five minutes. Let me just look over my notes, and we can come back on. So at 3:20 Eastern.

MR. CARDENAS-NAVIA: Sounds good.

THE WITNESS: And that's fine for me, as well.

(Recess from the record.)

MR. BOWSER: Counsel, I don't have any reason questions for Dr. Freedman.

MR. CARDENAS-NAVIA: I believe we're all set then.

MR. BOWSER: Okay.

(Off the record at 3:22 p.m.)

STATE OF MARYLAND)
ss:
COUNTY OF MONTGOMERY)

I, Matthew Goldstein, Notary Public within and for the State of Maryland, do hereby certify:

That I reported the proceedings in the within entitled matter, and that the within transcript is a true record of said proceedings.

I further certify that I am not related to any of the parties to the action by blood or marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 23rd day of July, 2023.

Matthew Goldstein, RPR

Immanuel Freedman, Ph.D., c/o
HAYES AND BOONE, LLP
800 17th Street NW, Suite 500
Washington, DC 20006

Case: Unified Patents, LLC v. VL Collective IP LLC
Date of deposition: July 19, 2023
Deponent: Immanuel Freedman, Ph.D.

Please be advised that the transcript in the above referenced matter is now complete and ready for signature. The deponent may come to this office to sign the transcript, a copy may be purchased for the witness to review and sign, or the deponent and/or counsel may waive the option of signing. Please advise us of the option selected. Please forward the errata sheet and the original signed signature page to counsel noticing the deposition, noting the applicable time period allowed for such by the governing Rules of Procedure. If you have any questions, please do not hesitate to call our office at (202)-232-0646.

Sincerely,
Digital Evidence Group

Digital Evidence Group, L.L.C.
1730 M Street, NW, Suite 812
Washington, D.C. 20036
(202) 232-0646

SIGNATURE PAGE
Case: Unified Patents, LLC v. VL Collective IP LLC
Witness Name: Immanuel Freedman, Ph.D.
Deposition Date: July 19, 2023

I do hereby acknowledge that I have read and examined the foregoing pages of the transcript of my deposition and that:

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ERRATA SHEET

Case: Unified Patents, LLC v. VL Collective IP LLC
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