In the Matter Of:

COMCAST CABLE COMMUNICATIONS, LLC

vs

PROMPTU SYSTEMS CORPORATION

DAVID CHAIKEN

November 30, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COMCAST CABLE COMMUNICATIONS, LLC,

Petitioner,

vs.

PROMPTU SYSTEMS CORPORATION,

Patent Owner

Case IPR2018-00340
Case IPR2018-00341
Case IPR2018-00342
Case IPR2018-00343
Case IPR2018-00344
Case IPR2018-00345
Patent No. 7,047,196
Patent No. 7,260,538
Patent No. RE44,326

EXAMINATION OF

DAVID CHAIKEN

FRIDAY, NOVEMBER 30, 2018

REPORTED BY: HOLLY THUMAN, CSR No. 6834, RMR, CRR

(WDC-201119)

I N D E X

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EXHIBITS MARKED FOR IDENTIFICATION

(Exhibits, cont'd)

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Examination of DAVID CHAIKEN, taken by the Petitioner, at FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP, 3300 Hillview Avenue, Palo Alto, California 94304-1203, commencing at 2:24 P.M., on FRIDAY, NOVEMBER 30, 2018, before me, HOLLY THUMAN, CSR, RMR, CRR.

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PALO ALTO, CALIFORNIA; FRIDAY, NOVEMBER 30, 2018

2:26 P.M.

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DAVID CHAIKEN,

called as a witness, who, having been first duly sworn, was examined and testified as follows:

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EXAMINATION BY MR. CALLAWAY

BY MR. CALLAWAY:

Q. Thank you. Good afternoon, Dr. Chaiken. My name is Dan Callaway.

Can you state your full name for the record?

A. David Chaiken.

Q. Can you give your address for the record?

A. 1036 Sonoma Avenue, Menlo Park, California.

Q. And you understand the oath that you've just given to tell the truth?

A. Yes.

Q. Is there any reason that you cannot give complete and truthful answers today in your deposition?

A. No.

Q. Are you under the influence of any medication?

A. No.

Q. Okay. Have you had your deposition taken

before?

A. No.

Q. Okay. I will do my best to ask clear and well-phrased questions. I won't always succeed. So if you don't understand a question, please just ask me to clarify it. Okay?

Otherwise, if you do answer a question, I'll assume that you understood the question. Is that fair?

A. Yes.

Q. Okay. If you provide a nonverbal answer to a question, that can result in an unclear or incomplete record. So can you provide verbal responses to my questions?

A. Yes.

Q. If you need a break at any time, just let us know. We'll try to take a break about every hour or so. Hopefully we won't be here for too long.

I would just ask that if you need to take a break, wait until there's no question pending to make the process more direct. Is that okay?

A. Yes.

Q. Okay. During any breaks, do you understand that you're not allowed to discuss the substance of your testimony with anybody else?

A. Yes.

Q. Okay. Are you being paid today to testify?
A. No.
Q. Were you paid for providing any declarations in the IPRs underlying this matter?
A. No.
Q. Okay.
A. Sorry. IPR?
Q. IPR stands for inter partes review. I should note that we're here to discuss your declarations in six inter partes reviews in the Patent Trial and Appeal Board: IPR2018-00340, IPR2018-341, IPR2018-342, IPR2018-343, IPR2018-344, and IPR2018-345.
Do you recognize those case numbers?
A. I don't recognize the case numbers.
Q. Are you familiar with the concept of an IPR in the Patent Office?
A. No.
Q. Okay. Why don't I then mark as Exhibit 14 and let you take a look at that.
(Deposition Exhibit 14 was marked for identification.)
BY MR. CALLAWAY:
Q. Do you recognize Exhibit 14?
MR. SCHROEDER: And Counsel, can I have a copy of that as well?

MR. CALLAWAY: Yes, I'm sorry.
MR. SCHROEDER: Thank you.
THE WITNESS: Yes, I do.
BY MR. CALLAWAY:
Q. Did you sign this declaration under penalty of perjury?
A. Yes.
Q. Who contacted you about providing this declaration?
A. It was Scott Mosko of Carr & Ferrell.
Q. When did he contact you?
A. It was earlier this year, sometime over the summer. I think it was in August, but it could have been earlier in the summer, or maybe a little bit later.
Q. Okay. And you've communicated with Mr. Mosko as well as the counsel that are present here today, Mr. Schroeder and Josh Goldberg?
A. So I've communicated with Mr. Schroeder. I just met Josh today.
Q. Okay. With respect to Exhibit 14, do you recognize this declaration as something that was prepared for an inter partes review proceeding in the Patent Trial and Appeal Board?
A. Yes. When we prepared the declaration, I was

focused on the content of the declaration, and I didn't look closely at this line that said "Case Number IPR" or ask exactly what "IPR" meant --

Q. Understood.

A. -- at the time.

Q. Just to take a brief moment to sort of describe the context of this document, you were employed at one time by Promptu. Is that right?

A. Yes.

Q. And is it your understanding that Promptu was the owner of certain U.S. patents that are being challenged in these IPR proceedings?

A. Yes.

Q. You can see on the front of Exhibit 14 that Comcast Cable Communications, LLC is the petitioner. Right?

A. Yes.

Q. Okay. And that Promptu Systems Corporation is the patent owner?

A. Yes.

Q. So is it your understanding that Comcast Cable Communications, LLC, is challenging the validity of patents owned by Promptu Systems Corporation in the Patent Office?

A. Yes.

Q. And that the outcome of this IPR proceeding and the six IPR proceedings in which you entered declarations could determine the validity or invalidity of the underlying patents?

A. Yes.

Q. Do you have any financial interest in the outcome of Promptu's case against Comcast in federal district court?

A. No.

Q. Did you draft your six declarations yourself?

A. No.

Q. Can you describe the process by which the declarations were drafted?

MR. SCHROEDER: And I'll caution the witness not to reveal the contents of any communications you had had with counsel. But you may otherwise respond.

THE WITNESS: These documents were prepared with counsel. Counsel drafted -- came up with a first draft of the declarations and the attachments for the declarations, and then I reviewed the contents for accuracy and through several different drafts converged on something that I believed was the truth.

BY MR. CALLAWAY:

Q. Okay. And the final declarations that you signed which were entered into the IPR proceedings, do

they represent the truth as far as you're concerned?

A. Yes.

Q. When you received the first draft from counsel, had you already done some analysis of the underlying patents?

A. No. I hadn't analyzed the underlying patents.

Q. Had you seen the underlying patents?

A. I had seen the underlying patents when I worked at Promptu. And then as part of reviewing the declaration, I also saw the patents.

Q. Okay. How long had it been when you first saw the draft of these declarations since you had seen the patents prior?

A. I saw the -- I'm going to -- if it's okay, I'm going to talk through that time period.

So I saw the patents when I worked at Promptu, and I was at Promptu until 2006. And then the declaration happened in 2018 this year, so that would have been at least 12 years.

It could have been a bit longer, because I saw the patents certainly earlier in my employment with Promptu, so it's somewhere -- and I started at Promptu I think in 2000. Right? So I can definitely bracket it between -- somewhere between 12 and 18 years. That's probably about as specific as I can get.

Q. Okay. So to boil that down a little bit, at least 12 years elapsed between when you reviewed the patents and when you next saw the draft declaration given to you by counsel?

A. Yes.

Q. Okay. Did you provide any input on declarations drafted and signed by anyone else in these IPR matters?

A. No.

Q. Not a declaration by a Mr. Tinsman?

A. No.

Q. Okay. I'll hand you what's been marked as Exhibit 15.

(Deposition Exhibit 15 was marked for identification.)

BY MR. CALLAWAY:

Q. This is a copy of United States Patent 7,260,538 with the listed assignee of Promptu Systems Corporation.

Do you recognize this document?

A. Yes.

Q. Did you have any role in the preparation of the application that led to this patent?

A. I understand the question. I don't remember. I was at the company before Harry Printz came to the

company, so I assume that I was the chief architect of the company when this patent -- when the application -- you asked about the application. Correct?

Q. Yes.

A. -- when the application was prepared.

So I was certainly collaborating with the inventors on implementing the technology at the time. I don't remember collaborating with them on this specific application, but it wouldn't be -- it -- that certainly wouldn't have been impossible.

Q. When you say "this specific application," with respect to the '538 patent, what are you referring to?

A. So let me make sure I understand the question.

So you're asking me whether I participated in preparing the application for this patent.

Q. Yes.

A. And so I'm talking through the likelihood of whether I -- I don't remember.

Q. Okay.

A. I was just talking through the likelihood of whether that could have happened --

Q. Okay.

A. -- in the -- in an effort to give you the truth here.

Q. Well, I don't need you to speculate.

A. Okay.
Q. If you don't know, then the answer can be that you don't know.
A. Yeah, I don't remember whether I participated in preparing the application for the '538 patent.
Q. Okay. Have you reviewed the claims of the '538 patent?
A. At some point in the past, yes.
Q. Okay. So with respect to Claim 1, have you reviewed that claim?
A. So let me just make sure I'm clear on this. Claim 1.
MR. SCHROEDER: I'm going to object as beyond the scope.
THE WITNESS: Just to make sure I totally understand, the invention claimed is: A method for providing voice recognition processing at a cable television head-end unit for a plurality of voice-controlled television cable set-top boxes in a cable television network comprising of a set of steps. Correct?
Yes.
BY MR. CALLAWAY:
Q. Okay. Have you performed an analysis of whether this claim covers any product of Promptu?

MR. SCHROEDER: Objection. Scope.
THE WITNESS: So when you say have I performed an analysis, what do you mean by performing an analysis?
BY MR. CALLAWAY:
Q. Sure. Have you compared the limitations of this claim -- and by "limitations," I mean the semicoloned clause of this claim -- to aspects or parts of any product by Promptu?
MR. SCHROEDER: Objection. Scope.
THE WITNESS: So what I've done is, I reviewed this set of semicolon statements and -- and also I have a pretty good memory of what we actually developed and brought to market at Promptu. And this set of statements represented what we brought to market at Promptu.
BY MR. CALLAWAY:
Q. Okay. Did you perform that same style of analysis with respect to Claim 2?
MR. SCHROEDER: Objection. Scope.
THE WITNESS: I'm just refreshing my memory of Claim 2 here.
Yes.
BY MR. CALLAWAY:
Q. With respect to Claim 1, the claim begins, as

you noted, "A method for providing voice recognition processing at a cable television head-end unit."

Do you see those words?

A. Yes.

Q. What do the words "cable television head-end unit" mean to you?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: So that -- it's an interesting question. My background is computer science, and so although I was working on a product that went through the cable industry, I wasn't a deep expert in the terminology used by the cable industry.

So what it -- in general, what it means to me is there's equipment that customers have, set-top boxes and TVs and so forth, and then there's the other side -- then there's the actual cable typically for cable networks that goes somewhere else, and that somewhere else was at -- seemed referred to as the head-end.

BY MR. CALLAWAY:

Q. Okay. Later in the claim, also in Column 9, at about line 35 --

A. Line 35. So we're still on Claim 1?

Q. Still in Claim 1, yes.

A. Okay.

Q. One of the semicoloned clauses of Claim 1 starting at line 35 reads, "the head-end unit driving a set-top-box-compatible command function corresponding to said voice command."

A. Yes. I see that.

Q. Do you see that?

A. Yes.

Q. Are you familiar with that limitation of Claim 1?

A. Objection. Form and scope.

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: I'm not entirely sure what you mean by "limitation."

BY MR. CALLAWAY:

Q. Sure. I use "limitation" consistently with semicoloned clause.

A. Oh, okay. So your question was, am I familiar with this clause?

Q. Right.

A. Yes.

Q. What does the term "set-top-box-compatible command function" mean to you?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: This gets into how the system worked. So the way the system worked is, a processed

form of the -- let me step back.

A human pushes a button and says something into a microphone, and somewhere in the home of the cable customer, that voice is processed. And that voice goes through a network and goes somewhere else. And there's a computer there that receives -- that receives that -- that voice command. And then what happens is the computer decides, oh, here's what the person meant, and I'm going to send a command back to the set-top box to do something.

So, for example, I say -- I hit a button and I say, "Scan movies," or I say, "Jimmy Fallon." Right? And so that text "Jimmy Fallon" goes up to the -- to a computer, and then the computer understands, Oh, this person must have meant that they want to see the program that's on right now with Jimmy Fallon and sends a command to the set-top box. And that command would be something like change to Channel 4, because that's where that program is showing.

So that set-top box command is something that the set-top box can do. It could also be displaying some sort of information or providing some sort of feedback, either audio or visual, to the -- to the cable subscriber who issued that command.

BY MR. CALLAWAY:

Q. When you say providing information, what type of information are you referring to?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: So I think I just said providing information to the cable customer. I mean, that's -- I was thinking pretty broadly about that in terms of anything that -- anything that we can see with our eyes or hear with our ears that can come through a -- at the end of the day what we think of as a TV set; you know, screen and audio.

BY MR. CALLAWAY:

Q. So when you analyzed Claim 1 to determine whether it corresponded with the technology of Promptu, you interpreted the words "set-top-box-compatible command function" broadly to include any information that could be sent to the screen for display to the user?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: I was thinking about the outcome of a command that might be sent to a set-top box. The actual set-top-box-compatible command function is -- when we built the product, that consisted of some sort of digital information that went to software sitting on the set-top box that would cause it to do a number of different things, from change the channel or display

information.

The effect of that ultimately for the human sitting in front of the system could have been any of these different things that the customer could see.

BY MR. CALLAWAY:

Q. So speaking with respect to the Promptu system, when the head-end would send a command function to the set-top box, was it a necessity that the command function consist of executable code?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: Can you say what you mean by "executable code"?

BY MR. CALLAWAY:

Q. Sure. Would the set-top-box-compatible command function have consisted of or included instructions that could be immediately executed by a microprocessor; that is, with an opcode?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: That is an interesting question. It -- so I'm putting on my computer science hat here.

We tend to -- in the exam computer science world, we tend to separate code from data. In this case, I don't think that the intent was to be that specific about exactly what the set-top box was doing -- would do. So internally, when we taught this

methodology to the people who implemented the product, that information coming from the computer that somehow recognized what the human being -- what it thought the human being meant was translated into -- we didn't restrict the engineers on what they could send to the set-top box. It could in principle have been code that would execute on a set top. I don't remember that actual implementation. But I don't think that we were trying to constrain the implementation.

BY MR. CALLAWAY:

Q. Okay. All right. Let's look back at Exhibit 14, which is your declaration. I'll just ask you a few questions about that.

In paragraph 12, which starts on page 4, you write:

"For most solutions using the AgileTV technology, the voice recognition functionality was implemented in an AgileTV platform (referred to as the Agile engine, which was initially envisioned as being powered by a supercomputer and later powered using x86 processors)."

Do you see that?

A. Yes.

Q. What is the Agile engine?

A. So I just discussed in general how the system worked.

The voice goes through a network to a computer that somehow understands what the human said and then sends a command back to the set-top box to tell the set-top box to do something.

The Agile engine was the name we used at Promptu for that computer.

Q. What voice recognition software was running on the Agile engine?

A. The -- the core of the -- let -- let me just ask you to make that question more clear, because I'm not sure whether -- exactly what part of the software you're referring to.

Q. Sure. As I understand it, the Agile engine consisted in some part of a piece of software that would take in a digitized audio file representing a voice command by an end-user and that piece of software would render a command function, for lack of a better word.

A. Okay.

Q. And I'm curious as to, was that a commercial voice recognition package? Was it software that Agile developed itself?

A. I see. It was a pretty complicated stack of

software, and I don't -- you can correct me whether or not this is relevant.

It wasn't actually -- computer science hat on again -- an audio file. If it's relevant, we can go back and clarify exactly what it is. But that's -- that's kind of good -- if that's good enough for you, it's good enough for me.

So the -- it was a complicated set of different interoperating software systems, almost entirely written by AgileTV or by Promptu. The core software that actually took a -- ultimately a form of that audio and converted it into an understanding of the words that the -- that the human says, that was from a company called SpeechWorks.

So there was a lot of software that was written by AgileTV to kind of convert the understanding of what the human said into something that would be appropriate to understand what to send to the set-top box ultimately. All the way in the middle of this, there was a core of the speech recognition technology that was sourced from another company.

Q. And that company was SpeechWorks?

A. Yes. I -- I think I have the name of the company right. I -- I may be misspeaking. It may have -- that company may have had a different name. It

was since acquired by another company called ScanSoft.

Q. ScanSoft. Okay.

Are you aware of any other piece of software that took the function of this SpeechWorks or ScanSoft voice recognition software?

A. Sorry. Say that again?

Q. I'm sorry. It was poorly worded.

Was there any other voice recognition software that was ever included in the Agile engine that was sourced from another company?

A. In the Agile engine. I don't remember any other software. I do remember early in the history we had a choice of which technology to use for that purpose. By the time the software was deployed in production, it was single-sourced from a single company.

Q. Do you recall what the other potential sources of that software were?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: I don't remember which companies were considered at that time. There -- it -- I could speculate on the companies that were building speech recognition software at the time. That would just be speculation.

BY MR. CALLAWAY:

Q. Now, you were the chief architect of Promptu from -- in what time frame?

A. From 2000 until I became CTO of the company, which I -- I have to admit, I can't remember the year. It was probably around 2004, 2005.

Q. Okay. And was it your decision to source software from SpeechWorks?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: I was a stakeholder in that decision. I would say that the decision-maker at that time was Mark Foster, who was the CTO.

BY MR. CALLAWAY:

Q. Do you have an understanding of the reasons for AgileTV's decision to source software from SpeechWorks?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Sorry. Repeat the question again?

BY MR. CALLAWAY:

Q. Do you have an understanding of the reasons for AgileTV's decision to source software from SpeechWorks?

A. Yes.

Q. And what were those reasons?

A. First -- first of all, there's a decision about whether to build or buy with just about any technology decision. And so in the context of a startup, it's important to understand where to invest. We in principle could have developed that software but decided for the sake of making the product work that we would source that software from another company.

With respect to SpeechWorks, again, I would be speculating about -- there are a number of factors that apply to build or buy that have to do with the licensing terms and the relationship between the companies. That I could only speculate about. I don't think I was involved in that.

The one thing that I do remember is SpeechWorks was willing to work with us on developing that -- that software. So although the core of the software that recognized the speech was from SpeechWorks, there was the -- kind of the very core of that software that -- that we thought that we could optimize for the systems that we were running.

And so that was a factor in the partnership. So I'm -- I'm now speaking -- because I was the chief architect at the time, I was motivated primarily by technology. So that aspect of being able to work with SpeechWorks on making their software run as fast as

possible was -- was one of the factors.

I wouldn't say it was -- it's the factor that I was aware of. I wouldn't say that it was the deciding factor.

Q. Okay. Fair enough.

(Deposition Exhibit 16 was marked for identification.)

BY MR. CALLAWAY:

Q. Handing you what I've marked as Exhibit 16, it's a copy of a declaration that you entered in IPR2018-341.

Do you recognize that declaration?

A. Yes.

Q. And does your signature appear at the end of that declaration under penalty of perjury?

A. Yes.

Q. Okay. I'll have you set that aside if you would.

A. Just to be clear, this is a virtual signature, not a handwritten signature.

Q. Understood. You authorized the signing of this document by an electronic signature.

A. Yes.

Q. Okay. I'll hand you what I've marked as Exhibit 17.

(Deposition Exhibit 17 was marked for identification.)

BY MR. CALLAWAY:

Q. This is a declaration you entered in IPR2018-342.

Do you recognize this declaration?

A. Yes.

Q. And does your signature appear at the end of this declaration under penalty of perjury?

A. Yes.

Q. Okay. I'm going to hand you what I'm marking as Exhibit 18 --

(Deposition Exhibit 18 was marked for identification.)

BY MR. CALLAWAY:

Q. -- which is a copy of U.S. Patent RE44,326.

Do you recognize Exhibit 18?

A. Yes.

Q. Okay. And this is also a patent assigned to Promptu Systems Corporation. Right?

A. Yes.

Q. Promptu Systems Corporation is the same as AgileTV?

A. Right.

Q. It was just a name change?

A. Yes.
Q. Okay. Let's go back to Exhibit 17, the declaration from the 342 IPR. And keep Exhibit 18, the RE44 patent, close at hand.
Can you go to page 15 of Exhibit 17, please?
A. Paragraph 15 is the bottom of the page 6. Well, it says page 6 of 15.
Q. Okay. So paragraph 15 begins with the sentence:
"By 2003, the AgileTV system architecture used a first network path to transfer speech information to a speech recognition engine, which recognized the speech information and affected what is delivered via a second network path."
Do you see that?
A. Yes.
Q. Do you recognize the term "a first network path"?
A. Yes.
Q. Okay. And going to Exhibit 18, let's index to Claim 11.
A. What page is Claim 11 on?
Q. Oh, it's on page 67.
A. Okay.

Q. Which is the same as Column 52.
A. Okay. And sorry. Which claim are you asking about?
Q. Claim 11. So there's some word soup going on here, but Claim 11 begins at, like, line 12 of Column 52.
A. Yes.
Q. Did you analyze this claim in preparing your declaration?
MR. SCHROEDER: Objection. Form. Scope.
THE WITNESS: The word "soup" is kind of tripping me up here in the sense that --
BY MR. CALLAWAY:
Q. Yeah, I read you. Claim 11 is difficult for a patent lawyer to read. So let's set aside the '326 patent for a moment and just go back to your paragraph 15 --
A. Yeah.
Q. -- in Exhibit 17, the declaration, and let's return to those words, "a first network path to transfer speech information to a speech recognition engine."
Do you see that?
A. Yes.
Q. What does that term mean to you, "a first

network path to transfer speech information"?

A. So there's the network between the customer premises and the Agile engine that we were talking about. And that network can be implemented in various ways. In -- there's one implementation of that where the first network path -- let me step back.

It -- it kind of depends on the specific implementation. So there was one implementation on the older set-top boxes where the network path consists of a cable that goes to what was called a return path demodulator, and then that went into a piece of network equipment called an NC1500, and that went to the Agile -- went through -- by the -- once you get on the other side of the -- that NC1500, it's essentially the Internet. Right?

Ultimately going to the Agile engine, then the command came back from the Agile engine and went through -- back through the NC1500 through a -- what was called an out-of-band modulator, I think, that -- the initials were OM -- and that was transmitted back to these older-style set-top boxes.

So that's one way to interpret first network path and second network path.

But the Internet becomes a complicated place, and so that could -- could refer to -- it -- it can

refer to other kinds of implementations using Internet technologies. So to have two network paths, you can have -- that can be virtual, where there is a connection that goes up to some computer and then the command comes back, you know, possibly through a different set of computers that are between that -- the Agile engine and ultimately the customer's house.

Q. Understood. Well, some of it.

A. The Internet -- the Internet gets complicated. I understand that.

Q. All right. Let's set aside Exhibit 17 for now. And I'm going to mark as Exhibit 19 your declaration in IPR2018-343.

(Deposition Exhibit 19 was marked for identification.)

BY MR. CALLAWAY:

Q. Do you recognize that declaration?

A. Yes. I have to admit, I'm flipping through these declarations pretty quickly, and they look pretty similar. But yes, I recognize this declaration.

Q. Okay. And this one was signed under penalty of perjury?

A. Yes.

Q. Okay. Let's put that one aside.

I'm marking as Exhibit 20

U.S. Patent 7,047,196, called the '196 patent.

(Deposition Exhibit 20 was marked for identification.)

BY MR. CALLAWAY:

Q. Do you recognize Exhibit 20?

A. Yes.

Q. I'll hand you Exhibit 21, a copy of your declaration in IPR2018-344.

(Deposition Exhibit 21 was marked for identification.)

BY MR. CALLAWAY:

Q. Do you recognize that declaration?

A. Yes.

Q. Take a look at paragraph 15 of Exhibit 21.

A. Yes.

Q. Does paragraph 15 represent the sum total of your analysis to compare the claims of the '196 patent with AgileTV's product?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Can you just say a little bit more about what you mean by "the sum total"?

BY MR. CALLAWAY:

Q. Let's withdraw the "sum total" question, and I'll ask you this:

You note in paragraph 14 that the embodiments

described in the '196 patent describe the foundations of the design of the AgileTV solution.

Do you see that?

A. Yes.

Q. What did you do to reach that determination?

A. I looked through the '196 patent, and I remembered that the '196 patent contained information that some combination of Ted and Paul and Mark, especially Mark, explained to me about how they intended the system to work when I joined the company and remembered that as the job of one of the people who was implementing the system, essentially what they taught me, based on what they had written in the patent, was essentially what we built.

Q. Okay. All right. Let's set aside Exhibit 21.

The last of these declarations will be Exhibit 22.

(Deposition Exhibit 22 was marked for identification.)

BY MR. CALLAWAY:

Q. It is your declaration from IPR2018-345. Take a look and let me know if you recognize that declaration.

A. Yes.

Q. And you signed that declaration also under

penalty of perjury?

A. Yes.

Q. Okay. Let's set that one aside as well.

A. Just to be clear, each time you say "under penalty of perjury," I'm taking that to mean that I signed a document. And the last paragraph of this document starts, "I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true."

That's what you mean. Correct?

Q. Absolutely.

A. Okay.

Q. I'm just trying to elicit your oral testimony --

A. Yes.

Q. -- that you signed these he declarations --

A. Yes.

Q. -- with a full understanding --

A. Correct.

Q. -- of that last paragraph.

A. Yes.

Q. Okay. I don't mean to be --

A. I'm a computer scientist. I know how the Internet works, but not so much about all of the terms.

Q. Yes. And because of the hour, I'm restraining myself from asking you questions about Pinterest or computer science or anything else that might interest me and just stick to the matters at hand.

A. We can do that afterwards.

Q. Let me then mark for you Exhibit 23, which is a copy of U.S. Patent 6,513,063, to Luc Julia and to other inventors.

(Deposition Exhibit 23 was marked for identification.)

BY MR. CALLAWAY:

Q. Do you recognize Exhibit 23?

MR. SCHROEDER: Objection to form. Scope.

THE WITNESS: I -- this one I don't remember as -- this one I don't remember.

BY MR. CALLAWAY:

Q. I'll represent you to that this patent is one of the prior-art references tendered by Comcast to challenge the validity of Promptu's Patent 7,260,538.

A. I see.

Q. Does that refresh your recollection at all as to having ever reviewed Exhibit 23?

A. When I made the declarations, I don't think I -- I reviewed -- I don't remember reviewing any of the prior art when I -- when I made the declarations.

Q. Okay. So putting aside the subject matter or the specifics of Exhibit 23, I'll point you to the upper left of the front of Exhibit 23, where we see that the assignee is SRI International.

Do you see that?

A. Yes.

Q. And do you recognize that company's name?

A. Yes.

Q. Are you aware of any relationship between Promptu and SRI International?

MR. SCHROEDER: Objection. Form. And this is way beyond the scope as well.

THE WITNESS: Well, when I went to work every day, it was on the campus of SRI International, because the buildings of AgileTV were at -- on the SRI campus. And I also knew that Paul was -- I forget what they call the head of SRI, but I believe that Paul Cook was the head of SRI at some point in time.

BY MR. CALLAWAY:

Q. Was AgileTV renting space from SRI for its offices?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Our buildings were on the SRI campus. I don't know what the financial relationship there was.

BY MR. CALLAWAY:

Q. Okay. Did technology of SRI International play any role in the implementation of AgileTV's technology?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Sorry. Ask that -- ask that again?

BY MR. CALLAWAY:

Q. Did AgileTV's technology, their voice recognition solution, leverage any technology of SRI International?

MR. SCHROEDER: Same -- same objections.

THE WITNESS: Leverage technology of SRI International.

We built a complicated system. So Douglas Engelbart worked for SRI and invented the mouse at SRI. So SRI -- and I think that SRI may have invented fundamental parts of the Internet in the '60s and '70s time frame. So it's a very hard question to answer about SRI technology.

BY MR. CALLAWAY:

Q. Well, let me cabin it a little bit more narrowly to speech recognition technology of SRI.

Did speech recognition technology of SRI play any role in AgileTV's product?

MR. SCHROEDER: Objection. Form and scope.
THE WITNESS: Did speech recognition technology. Sorry.
And you are specifically asking about our product? I'm just trying to clarify the question here.
BY MR. CALLAWAY:
Q. In Exhibit 14, at paragraph 12 -- sorry. It's probably further into your stock.
A. Yeah. It's pretty far back. Okay. I've got Exhibit 14.
Q. In paragraph 12, you mentioned the Agile engine, which we discussed a little bit earlier.
A. Yes.
Q. Did the Agile engine comprise any software written by SRI?
MR. SCHROEDER: Objection. Form. Scope.
THE WITNESS: So like many companies, we developed a combination of proprietary software and open-source software. That open software -- open-source software included, for example, the Linux operating system. The Linux operating system comes from many, many companies, one of which could have been SRI.
So it's just -- I think you're asking a very broad question. And within the context of such a broad

question and the way we develop software in the modern world, it -- it's just very hard to answer.

BY MR. CALLAWAY:

Q. Sure.

A. I -- did some part of the Linux operating system come from SRI? I would have -- to answer your question, I would have to answer that question, and I just don't know.

Q. As part of the Agile engine, did Promptu specifically source any software from SRI that performed speech recognition?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: I don't recall -- okay. So let me just clarify what we mean by speech recognition software. That -- it's often a confusing term.

So can you -- can you tell me what you mean by speech recognition software?

BY MR. CALLAWAY:

Q. So really I -- to be candid, I'm referring to -- I have in mind your earlier testimony about a company called SpeechWorks --

A. Yes.

Q. -- from which Promptu sourced some core speech recognition technology.

A. Yes.

Q. Is that still your testimony that --
A. Yes --
Q. -- Agile, Promptu, sourced technology from SpeechWorks?
A. Yes.
Q. Okay. Did Agile similarly source any software from SRI for the same function that the SpeechWorks swear performed?
MR. SCHROEDER: Objection. Form. Scope.
THE WITNESS: I only remember speech recognition software from SpeechWorks.
BY MR. CALLAWAY:
Q. Okay. All right. Let's put Exhibit 14 back in the boneyard here.
A. Let me just think about that for a minute. I'm -- I'm trying my best here to remember.
We spent a lot of time with the SpeechWorks guys and spent a lot of time making that software work. I just don't remember deploying on the Agile engine anybody else's software.
Q. That's perfectly fine.
Should we take a break for a few minutes?
MR. SCHROEDER: Yes. Now is a good time.
MR. CALLAWAY: Okay.
(Recess from 3:30 P.M. to 3:39 P.M.)

(Deposition Exhibit 24 was marked for identification.)

BY MR. CALLAWAY:

Q. Mr. Chaiken, I'm going to hand you what I've marked as Exhibit 24, a copy of U.S. Patent 7,013,283, to Murdock.

Do you recognize Exhibit 24?

A. No.

Q. I'll represent to you this is another patent that Comcast has tendered in its challenge of Promptu's U.S. Patent 7,260,538. It's discussed in the underlying IPR petition.

This patent is assigned to Sarnoff Corporation. Do you see that?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Yes, I see that.

BY MR. CALLAWAY:

Q. Earlier, I asked you whether Promptu had sourced any speech recognition technology from SRI.

So I'll ask you, in this instance, did Promptu source any speech recognition technology from Sarnoff Corporation?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: So during the break I spent some more time thinking about speech recognition technology.

I only remember SpeechWorks.
BY MR. CALLAWAY:
Q. Understood.
Can you flip to Figure 1 of Exhibit 24, please?
A. Exhibit 24. Figure 1.
Do you recognize the block diagram of Figure 1.
MR. SCHROEDER: Objection. Form. Scope.
THE WITNESS: When -- I'm -- when you say recognize it, I don't remember seeing this patent before.
Do you mean recognized in some other sense?
BY MR. CALLAWAY:
Q. Yes. More broadly, does Figure 1 bring to mind the topology of any particular network system to you?
MR. SCHROEDER: Objection. Form. Scope.
THE WITNESS: Other home entertainment processors -- I'm just going through the different units here and thinking about this thing that says "Back Channel Multiplexer" and "Other Home Entertainment Processors," because, you know, a lot of network diagrams start looking similar.
I'd say that there -- there is a -- at least a

superficial similarity to -- in terms of pieces of it that look like AgileTV's network architecture, but I can't quite tell whether that's -- I mean, so at least superficially I'd say I recognize it.

BY MR. CALLAWAY:

Q. And superficially, what aspects of Figure 1 lead you to say that?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Well, earlier I talked about a television display. And I talked about a -- a computer, and we talked about how -- well, there's back channel multiplexer -- there -- there is -- there are things that I don't recognize. Right? So there's this thing called a program control device. And we haven't talked about DVDs or VCRs, and we haven't talked about other home entertainment processors. So those things don't look familiar.

So I'd say that -- that when I was talking earlier about old set-top boxes as opposed to new set-top boxes, you know, there are elements in the middle that look like the same kind of division of responsibilities in a cable network, but there are things that I described earlier that aren't the same.

So, for example, this shows a remote server computer that's directly connected to a forward channel

and directly connected to a back channel. So that -- that part isn't as familiar.

BY MR. CALLAWAY:

Q. And why do you say that?

A. I guess I'm just viewing this as a computer scientist and thinking about the underlying implementation and at -- at a high level, things may kind of look similar when they're described at this level. But when you actually look at how you build them, they may not be an actual representation of how things work.

So I just -- I just kind of find myself as an engineer speculating about what these things could mean and some interpretation of what they could mean, and -- so I'm good at kind of looking at a diagram and kind of quickly recognizing, okay, what might these things be?

But I'm not sure if I'm interpreting it correctly, especially because I don't understand this thing called a program control device or other home entertainment processor. So as I keep looking at this, I understand it less and less.

Q. Sure. I don't want you to speculate about what the diagrams mean.

A. Yeah.

Q. Okay. Take a look at Column 1 of Exhibit 24.

A few pages after the figure.

A. Yeah, Column 1.

Q. Around line 15, it reads:

"In current television systems, a user may order programming content from a service provider. For example, if a user decides to select and order a pay-per-view cable program, sporting event, or some other entertainment package, the user is required to view or select a particular program or package with a remote control."

Do you see that?

A. Yes.

MR. SCHROEDER: Objection. Counsel, I've allowed this to go on. This is far beyond the scope of the witness's declaration. He testified previously he had not seen this before, and it's not cited or referenced in his declaration.

If you don't stop asking questions about this, I'm going to have to object as well beyond the scope of this deposition, and we're going to have to cut it short then.

BY MR. CALLAWAY:

Q. So given the passage that I've just read from Column 1, is it fair to say that Exhibit 24 relates to

cable television programming?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: In current television systems -- so you're asking whether the passage you just read relates to cable television. It specifically says, "pay-per-view cable program." And so -- does it also say "television"? Yes. Current -- in the same passage, it says "television systems," and then it says "cable program."

So yes. This -- I -- this sounds like cable television.

BY MR. CALLAWAY:

Q. Okay. And with that understanding, going back to Figure 1, is Figure 1 consistent --

MR. SCHROEDER: Counsel, we're going to go ahead and stop this. This is well beyond the scope of the witness's declaration.

If you want to ask him about his declaration or the contents therein, that's what you're entitled to ask. But otherwise, we're going to have to end this deposition. This is not a fishing expedition.

MR. CALLAWAY: So this is a reference that was tendered in the IPR. I'm asking him questions about his basic interpretation of the figures.

MR. SCHROEDER: And the witness testified he

has no foundation to testify upon this because he's not seen it before he walked in today. He didn't offer any opinion on this reference in the IPR, and it's not cited or referenced or even alluded to in his declaration. So this is entirely beyond the scope of his declaration and his deposition.

And so if you're going to continue this line of questioning, we're going to have to cut this deposition off, and you can call the Board and ask if you want to continue beyond the scope.

MR. CALLAWAY: Well, why don't we pause this for now. But I'm not waiving the opportunity to ask questions about the exhibit. I just -- it's improper to cut short a deposition that's -- you know, there's nothing wrong with the line of questioning. But I'll agree to table the exhibit for now.

MR. SCHROEDER: The witness submitted a declaration, and you may ask him about the contents of his declaration. And that's the confines of this deposition today.

MR. CALLAWAY: Are you finished?

MR. SCHROEDER: Yes.

BY MR. CALLAWAY:

Q. All right. Let's take a look at what I've marked as Exhibit 25.

(Deposition Exhibit 25 was marked for identification.)

BY MR. CALLAWAY:

Q. This is U.S. Patent 5,774,859?

MR. SCHROEDER: And Counsel, I'm going to make the same objection. This exhibit also is not cited or alluded to or referenced in Mr. Chaiken's declarations.

You may can ask him questions about if he's ever seen this before today. But otherwise -- or if he considered this in preparing his declarations. But otherwise, questions about this are beyond the scope of his declaration and the deposition itself.

BY MR. CALLAWAY:

Q. Mr. Chaiken, have you seen Exhibit 25 before?

A. No.

Q. Do you see that the assignee of the patent of Exhibit 25 is Scientific-Atlanta, Incorporated?

A. Yes.

Q. Do you know of any relationship between Scientific-Atlanta and Promptu?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Do I know of any relationship between Scientific-Atlanta and Promptu.

What kind of -- any relationship. So as part of selling in the cable industry, we certainly had

conversations with people from Scientific-Atlanta over the years.

BY MR. CALLAWAY:

Q. And what were the nature of those communications?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: We were in the business of selling a system that integrated with cable systems. The two major providers of technology in the United States were -- at the time were Motorola and Scientific-Atlanta, with Motorola having the -- having more installations than Scientific-Atlanta, so we spent a lot more time with Motorola. But in the interest of building our business over time, we had conversations with Scientific Atlanta about how our -- how we might work together from a business perspective.

BY MR. CALLAWAY:

Q. Okay. Did those discussions with Scientific Atlanta ever broach the realm of patents?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: I wouldn't have participated in those conversations, so I don't know.

BY MR. CALLAWAY:

Q. Let me ask you this: Were you aware of prior technology, technology developed prior to Promptu's

solution, in the cable industry in which a set-top box could be responsive to voice commands?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Yes.

BY MR. CALLAWAY:

Q. Were you aware of any such technology by Scientific-Atlanta?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Was I aware. I -- I just don't remember.

BY MR. CALLAWAY:

Q. So I'll represent you to that this Houser patent of Exhibit 25 concerns speech recognition, broadly speaking. And I'd like to ask you to look at some parts of the Houser patent and determine whether they represent prior implementations of speech recognition with which you would have been familiar in the industry.

MR. SCHROEDER: And Counsel, we're not going to allow this anymore. This is well beyond the scope.

Yeah. So this is limited to the scope of his declaration, and his declaration nowhere talks about this reference. The witness testified that he has no foundation upon which to testify about this exhibit. And, you know, if you want to continue asking these

questions, we really -- we're going to stop the deposition immediately. This is just harassment and a waste of time.

MR. CALLAWAY: Well, I don't think that's right. The declaration is directed to secondary considerations of non-obviousness, and it speaks about the state of the industry, the praise that Promptu's system received, and the differences between Promptu's system and what was perceived to have come before.

So the witness has now said he's familiar with prior technology in the field, and I'm asking him questions about the Houser reference to see if that jogs his memory.

It is a patent by a set-top box manufacturer, which comes well before the timing of the Promptu inventions. So I think it's well within the scope of his declaration and the purpose of his declaration.

MR. SCHROEDER: But Counsel, this is a 47-page document, two-column patent, that you're going to ask the witness about that he admitted and testified under oath that he has never seen before today, and that it was not mentioned or considered in preparing his declaration.

That's the scope of this deposition. You can ask him about the praise that the Promptu and Agile

systems received and the things that he actually put in his declaration. That's valid. You may ask about those. But he testified that he has not seen this before today, so he's got no foundation on which to testify on this exhibit.

And so this isn't an opportunity for you to ask him questions about Exhibit 25.

MR. CALLAWAY: So your representation is that you will refuse to allow the witness to answer questions, and you will, in fact, terminate the deposition before allowing the witness to answer questions on a patent by a set-top box manufacturer that concerns speech recognition.

MR. SCHROEDER: Yes.

MR. CALLAWAY: Okay.

Q. Let's go back to Exhibit 14, probably toward the bottom of your stack, Mr. Chaiken.

And let's go to paragraph 7 of your declaration.

A. Oh, paragraph 7. Yeah.

Q. Yes, sorry. Paragraph 7.

A. Yep.

Q. And you write in that paragraph:

"At the time I joined AgileTV in 2000, there were not any known competitors

attempting to incorporate voice recognition technology into cable television network systems for accessing digital content such as television programs or videos on demand."

Do you see that?

A. Yes.

Q. Okay. And what was the basis for that statement in your declaration?

A. The basis for my statement was that we would go out into the industry, and we would sell our product. And we'd go to very big trade shows, and we wouldn't see anybody else demoing the same kind of product. And so when I -- when I declared about competitors, what I meant was companies that were actively trying to sell essentially the same product.

And so there were -- a lot of that was the response that we got. So I would personally go to the trade shows, and I would personally have a lot of people come to our booth at the cable television trade shows. And as far as I remember, all of those people who came to us said, "I haven't seen anything else like this." Or certainly, "There is nothing else like this at this -- at this show."

Q. So what I'm hearing is that when you say in the declaration there were not any known competitors

attempting to incorporate voice recognition technology into cable television networking -- network systems for accessing digital content such as television programs or videos on demand, those words are intentionally limited to the present tense and not the past tense. Is that right?

MR. SCHROEDER: Objection. Form.

THE WITNESS: Intentionally limited to the present tense. They were -- I was focused on the word "competitors," and I was thinking about, for the period of time that we were selling to the cable industry, there was nobody else who was doing -- were doing the same thing.

BY MR. CALLAWAY:

Q. Can you say whether companies had worked prior to the time of the year 2000 when you joined AgileTV on incorporating voice recognition technology into cable television network systems?

MR. SCHROEDER: Objection to form.

THE WITNESS: Into cable television network systems. So the one that I recall was a company called OpenTV that had done some work in the context of speech recognition and set-top boxes. I -- what I don't remember was whether they ever actually attempted to get that into a cable television network. I just -- I

don't remember that.

BY MR. CALLAWAY:

Q. What did OpenTV do in your recollection?

A. In my recollection -- in my recollection, so -- my recollection is that we had meetings with various -- with various providers to the cable TV industry, and there was -- at the time, there was TV Guide and OpenTV and Liberate. So we naturally had conversations with them.

And I remember meeting with a -- I remember that we met with Vincent Dureau, who was the CTO -- I'm pretty sure he was the CTO of OpenTV at the time. And he told us that their company had been trying to do such a thing. But we were investigating business relationships, so they seemed to be open to a business relationship, because they weren't pursuing that direction. I just don't remember -- so at the time I don't think that they were attempting to -- I remember that they had put together some kind of technology. I don't remember what that was.

And again, when we were working on the AgileTV solution, at least my belief was that they weren't working on the speech recognition aspects anymore, which is why we were in talks with them.

That's -- that's what I remember about the

interactions around speech recognition at that time.

Q. Okay. Had OpenTV earlier been working on speech recognition and cable television?

MR. SCHROEDER: Objection. Form.

THE WITNESS: So -- so I don't remember the state of the technology. I don't remember whether they kind of put together a prototype in a lab or whether they had actually tried to bring that to a cable television system.

They were a company in the cable industry; we were talking to them. I knew that they had developed some sort of speech recognition solution, but I don't know -- I just don't remember how far they got. I don't remember whether they ever took that solution out of a laboratory and put it into a cable television system.

BY MR. CALLAWAY:

Q. Okay. So when you initially authored paragraph 7 of Exhibit 14, did you consider whether to include any remarks about OpenTV in considering whether there were known competitors attempting to incorporate voice recognition technology into cable television network systems?

A. So I didn't consider mentioning OpenTV because we talked to them, and the nature of those

conversations indicated to me that they were not trying to compete with us in that particular area, and that there might be some natural synergy in -- between the two companies, because at -- at the time, we were not competitive.

These things can always change over the course of time, but I remember the nature of those conversations.

Q. Were you aware of any IP or patents by OpenTV?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: I was -- I seem to remember OpenTV telling us, and maybe it was Vincent himself, that they had a patent in the area, but I never -- I never confirmed that for myself.

BY MR. CALLAWAY:

Q. Okay.

A. We ...

Q. So with respect to the -- again, the first sentence of paragraph 7, where you write, "There were not any known competitors attempting to incorporate voice recognition technology into cable network television systems for accessing digital content such as television programs or videos on demand," was it your understanding that OpenTV had some technology, whether laboratory technology or in the field, that

performed those functions?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: So when you said "performed those functions," which functions?

BY MR. CALLAWAY:

Q. Voice recognition technology in cable television network systems for accessing digital content.

A. Voice recognition technology -- okay. So ask the -- sorry. Ask the complete question again? I'm kind of losing track here.

Q. Sure. At the time that you joined AgileTV in 2000, were you aware of OpenTV having any technology that incorporated voice recognition technology into cable television network systems for accessing digital content?

A. So -- so here's -- here's the issue. I -- I was -- I was not aware of OpenTV trying to incorporate that technology into cable television network systems. I knew that they had done something with speech recognition in a set-top box. And maybe I'm overly being an engineer here, but there was a long way from getting stuff to run on a set-top box, sometimes years of work involved, to actually getting it working in a cable television network system. That's -- there's a

lot of hard work there, and I just don't know whether they had -- I -- I don't know whether they had done that work, and we certainly didn't encounter them at any trade shows or -- there was nothing that would have indicated to me that they were successful, or even going in that direction.

Q. So you're saying OpenTV had voice recognition technology on a set-top box?

MR. SCHROEDER: Objection. Form.

THE WITNESS: That is what -- I have a memory that in the conversations with OpenTV, they said something about that.

BY MR. CALLAWAY:

Q. Do you have a recollection of whether the purpose of that voice recognition technology on an OpenTV set-top box was for the purpose of accessing digital content?

A. I -- I don't -- I don't think I ever saw a demo of their system or a specification of their system, so I don't know.

Q. So let's go at it this way:

At the time you joined AgileTV in 2000, were you aware of any prior technology in which a set-top box could recognize commands such as "go to Channel 5" or "volume up"?

A. So those specific -- those specific commands for a set-top box, I don't remember seeing that.

Q. What about, more generally, voice commands to a set-top box to change channel, change volume, turn the TV off, things like that?

A. I'm hesitating, because at some point in the history of Promptu I seem to remember seeing a remote control that within the remote control you could kind of program it to do those very simple commands. I just don't remember when I first saw one of those devices.

I'd -- I seem to remember seeing some -- somewhere in that time frame at AgileTV seeing some sort of simple device. It's pretty easy to create a device to recognize things like "go to Channel 5" and "channel up" and "channel down." And when I saw those devices, it seemed to me that they didn't actually provide the same value that we were providing at AgileTV, so I didn't spend a lot of time thinking about them.

So I -- I've seen systems that do that. I just don't remember the time frame, and they were never really important to me.

Q. Okay. So in paragraph 8, you write:

"Before AgileTV's solution, no one had addressed speech recognition for the cable

industry from a comprehensive systemwide perspective, from microphone through transport and to the server-side speech recognition engine."

Do you see that?

A. Yes. Sorry. Before -- yes.

Q. Is that sentence a fair characterization of AgileTV's technology?

A. It's a fair characterization of part of AgileTV's technology. We were also able to -- for example, we were also able to use the technology for mobile phones. So it was part of what we did, but not all of what we did.

Q. Sure. So with respect to a cable TV implementation of AgileTV's solution, is this sentence a fair characterization?

MR. SCHROEDER: Objection. Form.

THE WITNESS: "No one had addressed speech recognition for the cable industry."

Again, it was part of what we did. There were other things that we did, including a lot of work on the user interface so that consumers would be able to use this solution. So I -- what I'm not sure is, are -- it kind of seems like you're saying this is all -- all we did. And that's -- that's not completely

accurate.

I don't know. Maybe you could ask the question again, and I can try again.

BY MR. CALLAWAY:

Q. Why don't we table this for now, 'cause I think your counsel is going to -- is going to want to weigh in, so maybe he and I can talk on the break about that sentence, and I'll keep going along with other less controversial things for now.

A. Okay.

Q. Okay. Let me hand you what's been marked as Exhibit 26.

(Deposition Exhibit 26 was marked for identification.)

BY MR. CALLAWAY:

Q. Do you recognize this document?

A. Yes.

Q. And what is this document?

A. What is this document. It appears to be a presentation about AgileTV. I'm sorry. Let me be a little more specific. I certainly recognize some of the information here. And we gave a lot of presentations -- we gave a lot of presentations about AgileTV over the years. It -- I can tell it's an earlier document, because on page 26 I see an old

version of what we called the VoiceLink.

Oh, it also talks about cell phones. And then, there appears to be the -- a repetition of some of the material starting on page 32.

So I -- there's a lot of information here, and I don't remember -- and I don't remember the exact context of this particular document.

But certainly some of the information in here is familiar to me.

Q. Okay. Do you know who authored Exhibit 26?

A. I would suspect that Exhibit 26 was authored by a number of different people, some of whom had technology expertise, some of whom had financial expertise. Likely people at -- it would likely have been people at AgileTV, but perhaps with consultants involved. I'm not quite sure. There's a lot of material in this exhibit.

Q. Okay. I -- I don't want to have this take longer than it has to, so let's look specifically at page 23. I'm, frankly, trying to figure out when this document was authored, and I'm hoping we can narrow that down.

But let's look at page 23.

A. Yeah.

Q. What does page 23 show?

A. Okay. Page 23 -- we're on "Subscriber Deployment by Quarter." Correct?

Q. Right.

A. And the vertical axis shows digital subscribers in thousands, and the horizontal axis shows time in quarters of years 2004 to 2006.

Q. Now, can you tell from this slide when the slide was created or when the slide was intended to be current?

A. I -- all I can tell is from -- all -- I see the dates 2004 to 2006. I -- I would not have been the person to generate this kind of chart. It -- it's not -- it -- yeah. I wouldn't have been the person to generate this chart, so I -- again, I -- I think I'd be speculating if -- I don't think that my speculations on this would be any more valid than anybody else's.

Q. Okay. In 2004 -- well, was AgileTV profitable in Q3 of 2005?

A. Again, it's -- it's kind of not up to me to talk about the finances of the company, but I don't think so.

Q. I'm trying to determine whether this was a forward-looking slide or an entirely backward-looking slide. And specifically, I'm trying to determine if the figures, the digital subscriber numbers for Q4

2005, Q1 2006, Q2 2006, Q3 2006, and Q4 2006 -- are those forward-looking projections, do you know, or are they actual numbers?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Given the numbers, it must have been a forward projection.

BY MR. CALLAWAY:

Q. And why do you say that?

A. Well, so Q4 2006, it says 650,000 digital subscribers, if I'm reading this correctly. And I don't -- and we never reached 650,000 digital subscribers. So it must have been forward-looking.

Q. To the best of your recollection, how many digital subscribers did AgileTV reach?

A. I don't remember the exact numbers.

Q. Was it fewer than 650,000?

A. Yes. It was fewer than 650,000.

Q. Fewer than 580,000?

A. Yes.

Q. Fewer than 490,000?

A. Yes.

Q. Fewer than 410,000?

A. Yes.

Q. Fewer than 200,000?

A. Yes.

Q. Fewer than 85,000?
A. Yes.
Q. So is it your testimony that the bars on page 23 of Exhibit 26 with respect to Q3 2005, and forward are all likely projections?
MR. SCHROEDER: Objection. Form.
THE WITNESS: Are all likely projections. I -- I'm just thinking about what the word "projection" means. So whoever created this slide put together -- so the way you've taken me through this, right, I know how many subscribers -- I know that we never achieved 85,000 subscribers. Right?
So someone put this slide together, and they were attempting to forecast the -- no, I can't even -- I'm just speculating here. What do know I about this slide? Sorry. Again, thinking like an engineer.
BY MR. CALLAWAY:
Q. Understood.
A. A projection sounds kind of mathematical. Right? So what I don't know is whether there was some mathematical model that predicted this or potential sales commitments or contracts that may have predicted it. I -- I just don't know.
So someone put together the slide. And if they were attempting to tell the truth, as part of --

in this material, then they would have been -- they would have been creating a forecast somehow. Right? Whether that was a projection or some other way of creating numbers --

Q. Sure.

A. -- I don't know.

Q. So fair to call Q3 2005, and forward a forecast?

MR. SCHROEDER: Objection. Form.

THE WITNESS: Yes. I just said the word "forecast," didn't I?

All of these words are -- can be taken to mean something specific.

BY MR. CALLAWAY:

Q. I'm just looking for the broader statement of, like, a forward-looking statement or, you know --

A. Yes.

Q. -- something other than a causal representation of a fact that occurred.

A. Right. So yes. So the number -- certainly the numbers from -- certainly the numbers that are -- start with Q3 2005, are -- are not a backward-looking statement at what actually happened.

Q. Okay. What about Q2 2005?

A. 5,000. I -- I -- I just don't remember. Over

all of our deployments. I -- Q2 2005. Did we hit 5,000 in Q2 2005.

Given what I know about our deployments, I would say that that Q2 2005, was similar to Q3 2005. I don't think that in -- I don't think that in Q2 2005, we had 5,000 subscribers.

Q. Okay. So it sounds like the numbers for Q2 2005, and forward are forward-looking statements. Is that right?

A. I -- that -- that sounds reasonable.

Q. Okay. And then are the -- are of the numbers for Q1 2004, through Q3 2004, a different set of numbers?

MR. SCHROEDER: Objection. Form.

THE WITNESS: I -- I don't know. What I would -- what -- I don't remember the exact time frames of our deployments. However, what I would say is that Q1, 2004, number of 6 is small enough that it -- it certainly could have happened, and probably the 10. Maybe the 500. I just don't remember the exact time frames.

BY MR. CALLAWAY:

Q. Okay. So when the graph says "Actual trial units" over Q1, Q2, and Q3 of 2004, do you take that to mean that we should not multiply those numbers by a

thousand as we should later numbers?

MR. SCHROEDER: Objection. Lacks foundation. Calls for speculation.

THE WITNESS: Again, speaking as an engineer, that number 500 there, if -- there's the 580 later. Right? And the size of that five -- if that 500 was meant to be on the same scale as Q2 2006, and Q3 2006, then I would expect that -- the height of that bar to be somewhere between these other numbers.

So again, just looking at the -- looking at the numbers and looking at the height of the bars, I -- I just -- I -- I see what you mean there.

BY MR. CALLAWAY:

Q. So it's my understanding that at some point in 2006, the relationship between Comcast and AgileTV ended. Is that right?

MR. SCHROEDER: Objection. Form. Beyond the scope.

THE WITNESS: In 2006, the relationship between Comcast and AgileTV ended.

That sounds correct. That sounds correct.

BY MR. CALLAWAY:

Q. Do you have a sense of when in 2006 that happened?

MR. SCHROEDER: Objection. Form. Beyond the

scope.

THE WITNESS: So what I remember is I resigned as CTO of the company in mid 2006, and I returned as a consultant. One of my responsibilities was to recover some of the installed equipment. And my memory may be -- may not be accurate, but I think that one of the systems that I removed equipment from was a Comcast system. So now we get into -- now we get into, well, what's the definition of relationship? Right?

BY MR. CALLAWAY:

Q. I'd rather not go there if we don't have to. I can --

A. Okay. I -- that -- that sounds -- sounds accurate. But depending on the meaning of "relationship" -- I wasn't -- I wasn't -- at some level, the actual nature of the relationship was fairly closely held by Paul Cook and the business executives of the company. So for the exact time frame of what happened when, I don't exactly remember.

Q. Have you reviewed Paul Cook's prior testimony in this matter?

A. Have I reviewed Paul Cook's prior testimony. I don't remember reviewing -- so when you say "prior testimony," what time frame would that testimony have been? Are we talking about something that happened in

2006?

Q. We're talking about something that happened this month, I believe --

A. No.

Q. -- 2018.

A. No. No.

Q. Okay. So broadly speaking, do you have -- do you have a familiarity with AgileTV's subscriber deployment by quarter other than the graph that we're looking at right now?

MR. SCHROEDER: Objection. Form.

THE WITNESS: The reason why I'm hesitating is, when I was the chief architect and then the CTO of the company, I would have had that information in my head probably on a quarter-by-quarter basis, and I could -- in 2006, I likely could have told you.

BY MR. CALLAWAY:

Q. Sure.

A. 12 years later, that information just isn't in my head anymore.

Q. Okay. That's fair. Let's leave it there.

Let's take a look at page 24 of Exhibit 26. Do you have that page?

A. Page 24 -- oh, we're still on Exhibit 26, page 24. "Revenue & Pre-Tax Profit"?

Q. Yes.
A. Yes.
Q. Do you recognize this slide?
A. No.
Q. Do you have reason to doubt that this was authored by someone at AgileTV and that it was accurate?
A. I -- I have to admit that I did not pay close attention to the finances of the -- of the company.
Q. But as a -- as a record of AgileTV, you know, given the context in this slide deck, do you have reason to doubt the authenticity or the accuracy of page 24?
MR. SCHROEDER: Objection to form.
THE WITNESS: Okay. Speaking as an engineer, I'm looking at the vertical axes of these graphs. And again, just as -- just as an engineer confronted with this information, I don't see any units here.
It says dollars. I don't know whether the intent was thousands of dollars or some other unit. So I -- now that -- you know, 12 years later, now that I know a lot more about running a business and running an organization and so forth, I probably would have asked the person who generated this graph to be more specific. So --

BY MR. CALLAWAY:

Q. Well, suspending disbelief on those points --

A. Yeah.

Q. -- let's come to some common ground about what we see.

A. Okay.

Q. In 2004, AgileTV had no revenue. Right?

MR. SCHROEDER: Objection. Form.

THE WITNESS: No revenue. In 2004. Yeah. That seems -- that seems reasonable.

BY MR. CALLAWAY:

Q. And it had a negative pretax profit?

MR. SCHROEDER: Objection to form.

THE WITNESS: Okay. So here's where -- here's where I'm -- negative pretax profit. So I'm not an accountant; I don't play one on TV. But pretax profit.

BY MR. CALLAWAY:

Q. I'm --

A. Yeah. So the question is, were we making money in 2004. And the answer is no.

Q. What about with respect to 2005? Were you making money in 2005 at AgileTV?

A. No.

Q. Now, the revenue appears to be in the graph on the left. Is that your understanding?

MR. SCHROEDER: Objection. Form.

THE WITNESS: Now you're kind of putting words in my mouth here. Right?

So there's a title here that says "Revenue & Pre-Tax Profit." Again, as an engineer, I would ask somebody generating plots -- and I do this all the time -- to put a caption under the plot that says which is which, what are you talking about.

So I -- I'm -- I just don't feel like I'm the best person to be talking about these -- these slides. But --

BY MR. CALLAWAY:

Q. Yeah, that's fair enough. I --

A. I mean -- right.

Q. Let's look at page 34.

Do you recognize this slide?

A. It looks -- the information on this slide looks familiar.

Q. Okay. So is it your understanding that AgileTV raised $37.5 million in funding?

A. Right now, my only reference point is this document. I -- I don't -- I don't know whether that was actually -- I don't know whether that was actually true or when that was true.

Oh, but one thing that this does help with is,

it does, I think, confirm that I was correct about the name SpeechWorks earlier. I was a little bit unsure about that. This makes me more sure about that statement.

Q. SpeechWorks was an investor in AgileTV?

A. No. Remember earlier when I said I was sure that we sourced speech recognition technology from another company, and I just didn't remember whether that company was SpeechWorks?

Now I'm more confident that I've got that company's name right.

Q. And why does this document enforce your recollection that SpeechWorks provided --

A. I -- because I -- because I only -- because I wasn't 100 percent sure that 12 years later I got the exact name right, and then seeing the name on this slide reminds me that, oh, yes, it was -- it was definitely SpeechWorks.

Q. So you're saying that with respect to the name, but not necessarily the corporate relationship.

A. Yeah, I -- I don't remember the -- based on the information of this slide that I'm seeing on this slide, I would assume that SpeechWorks -- that the funding of 37.5 million came from SpeechWorks.

But I'm -- I'm reading the same document that

you are, and at the moment, I don't have any other memory or recollection of that.

Q. Well, let me ask you this: The 37.5 million, do you understand that to be a reported fact in history or a forward-looking statement?

MR. SCHROEDER: Objection. Form.

THE WITNESS: I -- I don't remember.

BY MR. CALLAWAY:

Q. Okay. So you don't know if AgileTV actually raised $37 1/2 million in funding?

A. I don't remember the exact finances of the company.

Q. Okay. Let's put this one aside.

It's 4:45. Do you want to take a break, or should I continue with a few more exhibits?

A. I'm -- I'm okay keeping going.

Q. Okay.

MR. SCHROEDER: That's fine.

MR. CALLAWAY: Let's continue.

Q. I'd like to show you some videos that were entered as exhibits into the IPR. So I think the way we'll do this is I'll turn my laptop around and display some videos to you, and then -- well, I think I'll play them in their entirety before asking questions, and then I'll ask some questions.

So I will play two videos, each of which is about 3 minutes long, and then we'll talk about them from there. Is that okay?

A. Yes.

Q. Okay. I am playing Part 1 of 5 of Exhibit 2025 in the 340 IPR.

(Video played, 4:46 P.M. to 4:50 P.M.)

MR. CALLAWAY: We'll go on the record now.

Q. So Mr. Chaiken, that's Part 1 of Exhibit 2025 in the 340 IPR.

Do you recognize that video?

A. I recognized -- yes, I recognize that video.

Q. Did it show you?

A. Yes.

Q. Okay. And what generally -- well, where was it filmed?

A. It was filmed in some Comcast facility. Because Jim Potter was there, I assume that that would have been somewhere in the Philadelphia area.

Q. Okay. And what are you shown doing in Part 1 of Exhibit 2025?

A. I -- ironically enough, I was at Comcast, apparently installing a cable.

Q. Full stop?

A. I -- I -- besides that, I don't remember the

exact Comcast -- the exact context of that particular video.

Q. Okay. That's fair. And frankly, I'm more interested in asking you questions about Part 2 of the exhibit, which is another 3-minute video.

A. Okay.

Q. I will show you Part 2 now, but I just want to bring your attention before you watch it to your remarks about TV Guide which you make in this video.

A. Yes.

Q. So let's start the second video.

(Video played, 4:51 P.M. to 4:55 P.M.)

BY MR. CALLAWAY:

Q. Okay. So that's the end of Part 2 of Exhibit 2025.

Did you recognize that portion of the video?

A. Yes.

Q. And were you shown there?

A. Yes.

Q. There was a transition in that video from I think what you earlier testified was a Comcast office to a residential street. Do you agree?

A. Yes.

Q. Okay. And where are you after that transition in the video?

A. I'm in, I believe, a residential neighborhood that's served by the Comcast -- that's in the area that we were deploying to for the trial.

Q. Okay. You made a remark in that segment that I have transcribed as "You know what we call boxes running TV Guide?" and then there was a remark by someone else.

And then you said, "Broken."

Do you agree that you said those words?

A. Yes.

Q. And what did you mean by that remark?

A. What I meant by -- I think -- this was a long time ago, and we don't always say things that we wish we had said. However, putting myself in the frame of mind of those days, we spent a lot of time demoing a television experience with speech recognition versus a television experience without speech recognition. And at the time, the television experience without speech recognition was -- in that particular area, was the TV Guide experience.

So what I meant by "broken" was a system that did not have this great new experience of speech-controlled television. And what I was doing there was installing a new system that had speech recognition on it that fixed that -- the brokenness of

cable TV was all of the buttons that you needed to push to get to your show or to get to video on demand or -- and what I was there to fix was that whole experience being controlled not by a whole bunch of buttons on a remote control. I fixed that by installing our system, where you pressed the button and you got what you wanted pretty much instantly.

So "broken" was in reference -- I'm almost positive that "broken" was in reference not so much to TV Guide, but that experience that we all had in our houses, and that was frustrating to pretty much all of us. And that got fixed by installing AgileTV.

That's what I meant.

Q. Understood. Okay. So in the video, you were holding under your arm a cable box. Right?

A. Yes.

Q. And walking toward a subscriber's house?

A. So I -- yeah. I -- I think that that particular subscriber was also a -- an employee of Comcast, because there was the Comcast truck in the driveway.

Q. But a subscriber, nonetheless.

A. Yes.

Q. The box under your arm had AgileTV software on it?

A. I don't know.
Q. Okay.
A. Because the software was deployed over the cable system, so I don't know whether it did or it did not.
Q. Was AgileTV's system compatible with TV Guide?
A. It depends on what you mean by "compatible." So there's compatible in the engineering sense, and there's compatible in the sense of support. Right?
So TV Guide wasn't a mono -- it wasn't just one installation. It was a bunch of different software that ran on set-top boxes and a magazine and so forth. So at -- so the software that was downloaded on the set-top box wasn't compatible. However, from a support perspective -- you know, I'm on this screen, I press this button, I go here, I go there -- in the -- it was -- there was a spectrum of what we'd call compatible, and it was -- it was fairly compatible in the sense that if a subscriber picked up the phone and tried to get support, a lot of the same kinds of things would work.
So it depends on whether you're talking to a software engineer and getting that definition of "compatible" or whether you're talking to the person who's supporting the -- the customer support for a

cable system.

Q. So let's go at it this way:

If I were that Comcast subscriber, and apparently employee, who had the AgileTV system deployed to him, and if I spoke into the remote and said, "Find CSI," the nature of that question would require to some extent that the AgileTV system query or scan channels to look for CSI. Right?

MR. SCHROEDER: Objection to form.

THE WITNESS: So it was a little more complicated than that. It would require the Agile engine, the computer on the other side, to do a lookup in a database that had information about what was on the system, and then based on understanding -- okay. You said, "Find CSI."

So based on understanding what "CSI" means and then understanding that CSI was a program and looking up that information in a database, it would format some information about when is CSI on and so forth and then send that back as part of a command or a message that went back to the set-top box.

So it's not like it was physically scanning channels. It was -- it was more a software system that did a lookup in a database.

BY MR. CALLAWAY:

Q. Okay. And would that -- who provided that database?

A. So that's a good question, and we -- we sourced that database from different providers at different times. And so one of the companies that we sourced data from was -- it was one of the Tribune companies. I think it may have been called Tribune Media.

I think -- I -- I forget whether we at some point may actually have sourced that information from TV Guide. Right? So this is another definition of this word "compatibility." Right? Could we use the information from the company TV Guide, you know, the same -- effectively the same company that produced the magazine that people have with the TV channels and so forth.

So I believe that that changed over the history of the -- of the company. So it depends on what time you talk about in the -- and I don't remember exactly where we got the information from at any particular time.

Q. So you mentioned TV Guide compatibility.

Is it your testimony that Comcast used TV Guide software on their existing cable boxes at the

time AgileTV was introducing its speech recognition technology?

A. Yes.

Q. And --

A. Okay. That gets complicated, because somewhere in that time frame, Comcast did a joint venture with TV Guide. So I believe at -- and it depends on what you mean by TV Guide software. Right? Was -- was there a TV Guide logo on it? I think so. I don't remember whether the software at that particular point in time was developed by TV Guide or was developed by the joint venture between Comcast and TV Guide.

Q. Okay. Putting aside whether TV Guide itself authored the guide software, at the time when AgileTV was working with Comcast with the hope of deploying AgileTV's system on Comcast's network, was Comcast's existing guide software an impediment to implementing AgileTV's system on Comcast's network?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: An impediment in -- what do you mean by "impediment"?

BY MR. CALLAWAY:

Q. Well, you mentioned that TV Guide was not compatible with AgileTV, and we were exploring the

dimensions of incompatibility. So I'm stepping back a little bit to ask if the TV Guide software or whatever guide software was running on Comcast's --

A. Yeah.

Q. -- set-top boxes was itself an impediment --

A. Yeah.

Q. -- to implementing AgileTV?

A. So speaking as an engineer, as a technical impediment, it -- my recollection is that it wasn't a technical impediment, because we put our software through the same qualification that the TV Guide software was, and we used the same mechanism for downloading the software to the set-top boxes.

So from a -- from an engineering perspective, it -- it wasn't an impediment. Right? It was the same set of processes. It was the -- it -- it didn't kind of look or feel any -- any -- from a technical standpoint, any -- any different.

Q. What about from a more business-oriented standpoint? Was it an impediment?

MR. SCHROEDER: Objection. Form and scope.

THE WITNESS: So that gets into the, kind of, sales and business relationship, and so I remember that there were conversations about that. I remember that Comcast encouraged AgileTV to work with TV Guide to

integrate into their software. I remember going to the TV Guide office in Tulsa, Oklahoma, and installing AgileTV in TV Guide's lab so that they could have our system on site.

So I certainly remember that Comcast encouraged us to integrate with TV Guide, and I certainly remember that we were creating technical plans to do that.

The point of it being an impediment -- I don't know. When you're rolling out a product, there are nice-to-haves and there are must-haves, and there's the axis of scale. Right?

So it was not an impediment at the time that I walked in that house at the scale that we were deploying.

BY MR. CALLAWAY:

Q. When you walked into that house, there was already a set-top box there that was running TV Guide. Right?

A. Right.

Q. And after you left, you had installed AgileTV's system in the user's house. Right?

A. Yeah. So I -- I forget why I had that set top in my hand. It may have been because -- there -- it may have been something about the requirements of the

set-top box itself. I -- I forget what -- or in that first section that you played, I made perhaps a snarky comment about DAC programming. That DAC is the digital access controller. And so we had integrated in with that controller, and that was the mechanism for downloading the software at the time into set-top boxes.

And so I -- at some point, when we -- when we actually went -- not into Comcast employees' houses, but when we went into the actual subscribers' houses, we were able to deploy the software the same way that TV Guide was deployed. I remember that that installation into a Comcast employee's house was before we went to subscribers who were not employees. And so I just don't remember -- it could have been that the state of our integration with our cable system at that time was such that I needed to swap out the set-top box --

Q. Sure.

A. It wasn't the case when we actually -- that would not have been the case when we actually went to -- when we went to customer households.

Q. When you went to customer households and installed the AgileTV system, did the AgileTV system coexist with TV Guide software?

A. So it coexisted in the same cable system, so some of the set tops could run TV Guide software, and others could run Agile TV software. But when -- the way it worked was we installed the equipment, and the -- part of the installation process was reconfiguring the services -- you know, like you can buy HBO or not buy HBO or get different packages -- they installed the essentially AgileTV package for that customer, and through a -- through an automated process, the digital access controller would tell that set-top box to -- to run the AgileTV package. Right?

And so if you look at the actual software running on the box, what you would have seen is the TV Guide software -- the software authored by TV Guide or Comcast or whoever would have been removed from the box, and our software would have been installed on the box.

Q. Okay. And --

A. So there's -- so there's compatibility at the system level for the cable system, and then there's -- there's compatibility on the set-top box itself.

Q. So it sounds like what you're saying is that implementing AgileTV in a given set-top box required disrupting the use of TV Guide software in that set-top box.

MR. SCHROEDER: Objection. Form.
THE WITNESS: It -- well, it replaced the TV Guide-authored software with the AgileTV-authored software. However, again -- this goes back to, what do you mean by TV Guide? Right?
So it's TV Guide-authored software, but then, what does TV Guide mean? Right? Does it have the logo of TV Guide on it?
So one of the things -- I'm not sure if we -- one of the things that was customizable about our software was what was the cable -- what was the cable network's logo and what did that look like and -- on the help screens, what was the customer support number. And I -- I think that we either had or were going to say, Okay, well, you can have different logos. Right? So you can put the -- that's more a business question of can you put the TV Guide logo on something.
BY MR. CALLAWAY:
Q. Well, I'm -- what I'm more concerned with is Comcast, you know, as the status quo, was using some kind of guide software package that --
A. Right.
Q. -- I think we're calling TV Guide.
A. Right.
Q. And in order to implementing AgileTV, they

were going to have to introduce a new guide software that would either operate in their network alongside the pre-existing TV Guide software or, I guess, the whole network would have had to migrate over to this new guide software.

A. At -- at that trial scale, that was true.

Q. And my general point is, wouldn't that have been an impediment to large-scale implementation of AgileTV, because it would upset an existing relationship with a software guide provider?

A. Oh, so that --

MR. SCHROEDER: Objection. Form.

THE WITNESS: So that's a business decision. Right? So one -- if the business decision had been that TV -- TV Guide had -- had said, so -- if TV Guide had said This thing from AgileTV can be branded TV Guide, right, then essentially it would have been tied software. Right?

I -- so -- you know, I'm kind of speculating about the business now. Right? And now it gets complicated, because there was AgileTV, and there was Comcast, and there was TV Guide, and there was a joint venture between Comcast and TV Guide.

And so you're asking about whether it would have been an impediment. And essentially I think that,

at least at AgileTV, we had -- we were talking to both Comcast and to TV Guide with the intent of saying, Well, hey, if we can call our guide TV Guide software, doesn't really matter.

So as a technologist, I worked on making it so that from a systematic point of view -- you know, do you have to send a truck to a household? Is it reliable to actually load this software on a set-top box?

None of that was an impediment. And then so there's this whole other area of how is software branded? Right? And I -- that was kind of not part of what I was working on at the -- at the time.

BY MR. CALLAWAY:

Q. Well, speaking about what you're working on in this time frame, which is the declarations entered in these IPRs -- for example, Exhibit 14 -- the declaration takes the point of view that the AgileTV solution was successfully deployed by Comcast on page 11, and that -- in paragraph 33, despite the success of these field trials of the AgileTV solution, I understand Comcast did not exercise its option to license additional rights under the AgileTV patents beyond the scope and duration of the trials in the Comcast cable system.

So what I'm exploring is reasons behind that. And these questions about TV Guide are intended to get at, were there commercial impediments to this software being viable?

It sounds like perhaps there weren't technical impediments based on your testimony, but I'm gathering that you're not able to testify as to whether there were business or commercial impediments to whether the software could be deployed.

MR. SCHROEDER: Objection to form. Scope.

THE WITNESS: Were there commercial impediments. So -- so as a technologist, we understood a number of different paths that we could take to successfully deploy the software and to start proving that the product would be successful.

So our point of view was that we had done what we needed to do to start the process of installing our product into a number of cable systems. And again, as a technologist, we had a number of pathways that if we needed to integrate with cable -- with TV Guide, we could do that by rebranding the guide or by integrating with the actual TV Guide software.

So when rolling out a new product -- when rolling out a new product, there are always different phases of how -- how -- how much functionality the

system has and how fluid it is to -- from a -- how good a match it is from a technical perspective and from a -- from a business perspective.

And so I believe that we were in a position where we would have been able to meet that challenge along each step of the way. Right? It -- an example is the iPhone. Right?

BY MR. CALLAWAY:

Q. Can I stop you?

A. Yeah.

Q. I don't think we need to give examples about hypotheticals.

A. Okay.

Q. I do accept your answer as --

A. Well, I can give examples of real products that have gone through that cycle. I -- it feels a little bit more hypothetical to be talking about AgileTV and which way we could -- we could have gone.

Q. Okay.

A. I'm trying to answer this impediment question, you know, as completely as I can by kind of breaking it down into, well, what could the issues have been and kind of knock down the issues one by one and say, okay, that likely would have happened over some period of time.

(Recess from 5:21 P.M. to 5:28 P.M.)
BY MR. CALLAWAY:
Q. On that note, I will again play a video. This one is Exhibit 2018, from the 340 IPR. It's about 5 minutes long. I'll just play it and then ask some questions about it.
A. Okay.
(Video played, 5:29 P.M. to 5:34 P.M.)
BY MR. CALLAWAY:
Q. Okay. So that's the end of the video of Exhibit 2018. Again, heady times.
I will give you what's been marked as Exhibit 27, which is also an exhibit from the IPR, that's a transcript of that session.
A. Yes.
(Deposition Exhibit 27 was marked for identification.)
BY MR. CALLAWAY:
Q. I have just a couple questions about that.
Do you recall seeing that appearance by Paul Cook and Harry Printz on Kudlow & Cramer on May 13th, 2004?
A. Yes.
Q. Do you recall seeing the program at the time?
A. Yes. Let me be more specific. I mean, in

hindsight, I know I saw it at approximately the same time. It was exciting enough that I assume we would have been in our office watching. I don't 100 percent remember standing in front of the TV set watching that live, but I have certainly seen that segment.

Q. Okay. Did you have any role in preparing Cook and Printz for their appearance?

A. I don't think that I did.

Q. Do you know if AgileTV made preparations for a live demonstration of its voice-activated remote control on that program?

A. I -- I don't know the circumstances of how that CNBC interaction happened.

Q. Okay. Did you expect the system to work when it was shown on live television?

A. I think that the answer is no. And I think that's because -- right. Now -- your questions are reminding -- reminding me that I think we did get a call just before the segment went on from Harry saying, "What's up? Why isn't the system working?"

And I now know why it didn't work, and I am not sure whether -- when Harry called and asked why it didn't work whether I actually knew at that time or whether it was right after that that we figured it out.

Q. Okay. So why didn't it work?

A. It didn't work because of -- this was the second-generation VoiceLink, and it didn't work because of plasma -- the plasma screens that were popular at the time put out IR, infrared-frequency radiation, that interfered with the infrared transmitter for the remote control.

This was actually a -- there were a -- a few at the time kind of high-end remote controls that needed more bandwidth between the remote and the receiver that were -- that had interference from plasma screens. I found this out for the very first time when I was installing at a trade show. And so I was the one who actually diagnosed the issue. And my solution for that at the trade show was, we replaced the plasma screen, which looked really nice, with a more ordinary TV that actually worked in our booth.

I just don't remember whether that -- my experience at the trade show was just before Harry and Paul went on CNBC or just after.

Q. I see.

A. So I don't remember whether Harry called in a panic and I said, "Oh, sorry, dude, it's the -- it's the plasma thing," or whether it was after that.

That was the second generation of our VoiceLink. The cool thing is the third --

approximately the third generation of our VoiceLink had a very clever infrared scheme that avoided -- it was -- this was one of the great technologies that we developed that avoided that plasma interference at approximately -- almost exactly the same cost per unit.

Q. So plasma televisions were becoming popular at that time?

A. Yeah. Yeah. So they were not -- in most places, you didn't find them. We had one at a trade show to make everything look good, but it was very easy for me to find an alternate once I figured out what was going on.

Q. Okay.

A. And in the CNBC -- the problem with the CNBC studio is they had a whole bunch of those things, and so the whole place was awash in that IR.

Q. Okay. And the AgileTV remote relied solely on infrared to transmit the user's voice to the set-top box?

A. That's interesting. The first generation of the VoiceLink used radio frequency transmissions, and the second used a -- a fairly standard -- I think it was a fairly standard infrared transmission. And then the third version was our own proprietary infrared transmission mechanism.

So over the time of the company, it kind of changed from radio to IR and then changed from one kind of IR to another kind of IR.

Q. But in the IR implementations, was the IR code existent with any RF?

A. No.

Q. It was IR only?

A. Well, there were two -- it was two kinds of IRs. There was the IR that went out through the -- what you think of as the front of the remote when you're holding it like a normal remote, and then there was another IR.

But in the -- actually, sorry. In the first version of our remote, that was both radio and -- that was -- I believe that was -- yeah, it was both radio and IR, where the very first version used IR for those normal remote-control things, and then it used -- I think it was -- I think it was -- this was Ted Calderone's brainchild. It was the same kind of transmission that was used for wireless headphones of the day, and so I know that it was -- I know that was radio, because it didn't require line of sight like the third generation did.

The first was IR plus radio; the second was IR; the third was two different IR transmitters.

Q. When you say two different IR transmitters, you're moving your hands in a way that the transcript might not catch, but I'm gathering that when the remote is aimed at the television --

A. Yeah.

Q. -- so that the user could push buttons --

A. Yeah.

Q. -- which were sending signals out a diode on the end of the remote --

A. Yes.

Q. -- and when the user speaks through the remote, because he's pointing that diode at his face, we have another diode?

A. Yes.

Q. Were they sending out the same signal, those two diodes?

A. I don't remember the implementation exactly. It may have been -- to get the transmission right, I think we may actually have had multiple diodes when it was in that microphone orientation. But it's definitely the case that the -- the -- the trans -- there were two separate transmission systems: one for the normal remote control buttons and another one for the speech.

Q. Got it. Okay.

Going back to the Kudlow & Cramer appearance, are you aware of any reaction by Paul Cook to the issues with the Kudlow & Cramer appearance where the system didn't work live?

A. I don't remember exactly, but none of us were thrilled about that. We all want to put our best foot forward, and this was -- this was certainly a challenge as a startup that we needed to work our way through. And the challenge wound up being -- the challenge wound up being -- having a technical solution that took some time to develop.

Q. Okay.

A. It -- you know, in retrospect, you go through those hard times; you go through those disappointments. And we were pretty proud of the -- of the outcome there.

And we -- you know, and we were thinking about going into the future with all kind of different technologies, as they became cost-effective -- like Mark had his eye on this technology called Zigbee that was just coming out at the time, but it would have taken us back to radio at some point.

Q. Were you aware of any reaction by anyone at Comcast to the Kudlow & Cramer appearance in which the technology didn't work on live television?

A. Was I aware of -- I don't remember.
Q. Okay. A few more questions. We're pretty close to the end here.
A. I do -- I do remember that Comcast -- we were up front with Comcast about that issue, and our contacts at Comcast made it clear that at some point it was on us to solve that problem, because their high-end demo rooms also had plasma.
So I do remember we had conversations with Comcast about plasma screens, and I think that -- and I seem to remember that eventually they were pleased with the solution that we came out with.
Q. Okay. As we sit here today, plasma is largely in the rear-view mirror. Right?
A. Isn't that funny?
Q. But at the time, plasma was an incipient, exciting technology. Right?
MR. SCHROEDER: Objection. Form.
THE WITNESS: Exciting. It was -- it was certainly in the screens that people tended to use in demo rooms. On the other hand, it was extraordinarily expensive and heavy and bathed people with infrared, which may or may not have been a good thing.
Personally, I never bought a plasma screen myself because I was looking forward to the kind of LED

screens that we all had in our house -- we all pretty much have in our houses now.

BY MR. CALLAWAY:

Q. Right. Okay. Going back to the patents themselves -- this is Exhibits 15, the '538 patent; the '326, which is Exhibit 18; and Exhibit 20, which is '196 --

A. Okay. Could we go through this again? There's a lot of -- okay. So there's Exhibit 20, and Exhibit 18, did you say?

Q. Yes.

A. And Exhibit --

Q. 15.

A. 15. One five.

Q. The three Calderone patents.

A. Yeah.

Q. So you testified earlier that you've reviewed these three patents during the preparation of your declarations. Correct?

A. Yes.

Q. Is it your understanding that these Promptu patents cover speech recognition algorithms?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Speech recognition algorithms. What I can say is that I didn't have that in mind when

I said that these patents were related to our product, and "speech recognition algorithms" carries a lot of -- covers a lot of territory. So when I said things -- when I -- when I wrote in my declaration, you know, a comprehensive system -- and Harry said something very similar on Kudlow & Cramer. One thing that Harry and his team worked on was speech compression techniques that were part of the speech recognition software and speech recognition algorithms.

So that -- I don't think that I mentioned that in reference to the patents. But when I talked about a comprehensive system, what I did have in mind was the kind of thing that Harry was talking about on Kudlow & Cramer, which was some of the specific things that we did. We were talking about the infrared, and you can only get so much bandwidth over an infrared. So one thing we needed to do was make sure that the voice signals were appropriate for transmitting either over infrared or some of the lower-bandwidth radio technologies.

And so when you talk about a comprehensive solution in that particular time frame, I had that kind of technology in mind. But I wasn't thinking about speech recognition, the actual speech recognition algorithms, because that's -- like the infrared versus

radio thing or whether the bits go over the Internet or they go over some more special-purpose cable stuff, that's -- that -- that's -- I didn't see that as key to -- I didn't see that as part of, you know, these patents.

BY MR. CALLAWAY:

Q. And you say that having reviewed their claims in the course of preparing your declarations?

MR. SCHROEDER: Objection. Form. Scope.

THE WITNESS: Yes. When I went through the claims, I wasn't thinking about -- you're asking, was I thinking about specific speech recognition --

BY MR. CALLAWAY:

Q. I'm asking whether the claims cover specific speech recognition algorithms, not so much what you were thinking of --

A. I -- I don't remember. I'd have to go through the -- I'd kind of have to go through claim by claim to remember whether I thought about that.

In -- and -- it kind of gets into what do you mean by speech recognition algorithms, because another distinction I'm making is between speech recognition architectures, which are -- kind of have to do with where is the voice and when, versus the specific algorithms.

And there are different parts of the algorithms. There's -- you know, there's this -- the speech processing itself, and then there's kind of a search algorithm to figure out what that -- what that speech might actually mean, and then there's the, okay, well, what do you do when you have maybe a small number of things that the speech might mean?

All of these kind of fall under speech recognition algorithms, so it gets kind of intricate.

Q. Right. Earlier when I asked you -- when we talked about SpeechWorks, my recollection is you were talking about the Agile engine, and you made a gesture with your hands when referring to SpeechWorks as if SpeechWorks was kind of like the kernel of the walnut or the meat in the sandwich, something relatively small right in the middle of the technology that did some core functionality.

So when I talk about speech recognition technology, I'm thinking of what in my view you testified earlier to, which was that SpeechWorks was doing some core functionality of taking in audio and rendering likely text.

MR. SCHROEDER: Objection. Form.

THE WITNESS: So there was a -- core technology can have different meanings. The Linux

operating system, which I mentioned earlier, was also core technology. Although, you know, we could have chosen different operating systems to suit that purpose, that purpose needed to be filled.

To a large extent, that was the same with the SpeechWorks technology. It was performing an important function and a function that in the context of a speech-enabled user interface needs to be done. That technology could have been sourced from a variety of different vendors. And certainly it's the kind of technology that evolves over time, and so that source of the -- we may have -- I -- we may have re-evaluated the decision over time about whether to continue to source that technology from some other company or made a -- made a business relationship with some other company to provide that same technology.

So it -- it was core, but maybe the reason why I didn't really consider it -- I don't -- at least I don't remember considering it when I was thinking about the patents is because to a certain extent it was kind of a replaceable module in the middle of the system.

BY MR. CALLAWAY:

Q. Okay. Why were you not named as an inventor on the '196 patent?

MR. SCHROEDER: Objection. Form and beyond

the scope as well.

THE WITNESS: The '196 patent.

BY MR. CALLAWAY:

Q. That's Exhibit 20.

A. Why was I not named. I think it was because the initial application was in -- so I'm looking at the '196 patent that's Exhibit 20. Right?

Q. Yes.

A. So I'm looking at the time frame when that was filed, and I think that I wasn't at the -- originally filed. I don't think I was at the company at the time. So I -- I joined the company after this invention had been done. And when I joined the company, like I said, some combination of Ted, Paul, and Mark explained to me -- they -- they explained to me their ideas that they had put into the patent. Right? And then it was my job to help convert those ideas and -- into -- into a working system.

So I -- I don't consider myself an inventor of this -- of the information that's in the patent, because it was taught to me.

Q. Sure. I understand that.

A. Right.

Q. What about with respect to the '538 patent? That one stemmed from a provisional application filed

on January 8th of 2002. This is Exhibit 15.

A. Right.

Q. Why weren't you named as an inventor on that patent?

A. That's --

MR. SCHROEDER: Objection to form and scope. And inventorship is not at issue in these current IPR proceedings.

THE WITNESS: That's a good question.

So I think that -- so I specifically noticed that Harry Printz is named as an inventor. And so Harry is the deep expert in speech recognition and speech processing. And as the chief architect, I was more the glue that held the company -- that held the technology together. Right?

So there -- there were some specific areas, and I think other patent applications, that I did file because I had actually come up with some ideas that we may have thought were unique. But when I'm not named as an inventor, I tended to be -- I tended to be a listener. There were people who were inventing, and they'd tell me the ideas, and I would be kind of reducing those ideas to engineering practice.

BY MR. CALLAWAY:

Q. Okay. Was that all?

A. Yeah. It's probably irrelevant, but I -- my grandfather operated in the same kind of mode in the pharmaceutical industry for many years. He wasn't named on any of the pharmaceutical patents, but his whole career was reducing how to take essentially recipes for -- or the intellectual property of pharmaceutical companies and scaling it up.

I kind of had the same interaction with -- with many of the inventions from AgileTV, where I was -- I was taught the material; I learned how to do it. I'm proud that I had a key part in making it all work.

But you asked why am I not named on the patent, and it's because I wasn't an inventor of the --

Q. That's fair.

A. -- of the technology.

Q. So I only have one more question, and it's kind of a follow-up.

With respect to the remote technology in the transmitters that were used in the first generation of AgileTV --

A. Yeah.

Q. -- you had testified that that remote had an infrared transmitter and then also an RF transmitter.

A. Yeah.

Q. Can you explain why it had both?
A. So at the time, Ted was the VP of hardware, and it was originally his -- it was -- it was the components that, with that responsibility, he chose to use to implement the first version of the system. He was very familiar with analog technologies, and that was -- that RF -- so the infrared was the off-the-shelf technology that you could get as part of any remote control. The FM modulation was a -- I think it was FM modulation -- again, this is analog hardware engineering, where I -- I only go there when I absolutely have to, but my understanding is that these were the components that Ted was the most familiar with and comfortable with, and they suit the purpose for the very first version of the tech -- of the technology.
Q. And how did they suit that purpose?
A. So it suited the purpose by being able to transmit the voice from the remote control to the -- to the VoiceLink.
Q. You're saying the RF served that purpose?
A. Yes.
Q. Why couldn't the infrared serve that purpose?
MR. SCHROEDER: Objection. Form.
THE WITNESS: In retrospect, I think it could have. And I -- I would -- I would have to speculate on

why Ted chose that solution. I think he was comfortable with that solution and -- and it was readily available, and it -- it met the need at the time.

I mean, it's -- when you look at what inventors are doing, you kind of look in 20/20 hindsight and say, oh, well, if we -- 20/20 hindsight, if we started with Version 3, we wouldn't have had that problem of Kudlow & Cramer. But we needed to learn everything over this period of time and create new technologies as we went forward to be able to get to that solution.

BY MR. CALLAWAY:

Q. Right.

A. And even as that solution was coming out, Mark Foster, who's an amazing inventor too, he was already looking at the next generation and saying, Oh, well, you look at the price of the radio technology, and eventually that will cross over, so we'll go back to radio at some point.

It's just -- technology is -- you know, we were just talking about plasma screens. That made a lot of sense at one point in time, but it was only kind of a small window of time.

Q. Sure.

A. So same with that radio technology. It made sense at a -- for a window of time.

MR. CALLAWAY: Okay. I have no further questions. I'm sorry to have been an impediment to your weekend, and I appreciate all the answers you've given, so thank you.

MR. SCHROEDER: And I have just some brief redirect.

MR. CALLAWAY: Should we stay in our seats?

MR. SCHROEDER: Might as well. That's fine.

MR. CALLAWAY: I agree.

MR. SCHROEDER: I don't think I need to switch over there.

MR. CALLAWAY: No.

EXAMINATION BY MR. SCHROEDER

BY MR. SCHROEDER:

Q. Earlier in your deposition, in the first hour, Counsel asked you questions about -- in reference to the claims in the '538 patent.

Do you remember that series of questions and answers?

A. It seems like a long time ago now, so you might have to remind me about specific questions.

Q. Sure. They related to a discussion about both the head-end as it's claimed in the '538 patent of the

head-end term and about the set-top-compatible command function. Do you recall --

A. Yes.

Q. Yes. And your discussion was describing Promptu's actual product that was released. Is that correct?

A. Yes.

Q. And your discussion was not based on your analysis of what was within the four corners of the patent. Is that correct?

A. Say what you mean by "the four corners of the patent."

Q. Sure. So you were recalling from memory how Promptu's system was implemented, and that was the context for or the basis for your answers.

A. Yes.

Q. Is that correct?

It was not based on the words written on the page on the patents themselves. That was not providing the basis for your answers to counsel's questions. Is that correct?

A. Yes. I think I spent a while describing how the system worked and what was going through my mind as I described how the system was work -- was -- my memories -- my memories of the product that we actually

brought to market.

Q. And you were not offering an opinion on the legal scope of any claims or claim terms in doing that. Is that correct?

MR. CALLAWAY: Object to the form.

THE WITNESS: Say what you mean by "legal scope."

BY MR. SCHROEDER:

Q. Sure. Are you a patent attorney?

A. No.

Q. Are you a patent agent?

A. No.

Q. Are you familiar with claim construction analysis?

A. No.

Q. Did you look at the file history for any of the patents -- any of the three Promptu patents in preparing either your declaration or for today's deposition?

A. When you said -- what do you mean by "filing history"?

Q. Sure. So do you understand what the term "prosecution file history" means?

A. No.

Q. Okay. Did you look at the back-and-forth

exchange between Promptu and the Patent Office with respect to the '538 patent --

A. No.

Q. Okay. And what about for the '196 or '326 patents?

A. I -- I -- no. I don't think I had access to them. I don't remember that.

Q. Okay. And were you asked to provide an opinion on claim scope, the patent claim scope, today?

A. Was I asked questions about the patent claim scope.

Q. Strike that. I'll ask a better question.

Are you offering an opinion on the legal scope of the claims in the '538 patent?

A. I can't do that, because I'm not an expert in what it -- the scope of claims means.

Q. Okay. And I think the final question I've got is -- or the final series of questions, perhaps -- did the Promptu system deployed in Comcast's network utilize the Revision 3 remote that used -- that overcame the plasma TV problem?

A. When you say in the Comcast network --

Q. It --

A. -- we had several deployments with Comcast. So I'm -- I'm positive that in at least one of them we

did. I forget the exact time frame of that.

So it may have been in some Comcast installations we used the Version 2 remote. It may even have been possible that we did demos for them in some Comcast system with the Version 1 remote. But I'm confident that in some Comcast system we demoed the -- not demoed. We installed in at least some subscribers' homes the Version 3 remote.

Q. And do you recall in 2003 the approximate price of a plasma television?

A. No. I remember they were expensive. Like I said, I didn't buy one for myself.

MR. SCHROEDER: Thank you. I've got nothing further.

MR. CALLAWAY: Okay. All set.

(Time noted, 6:08 P.M.)

--o0o--

I declare under penalty of perjury that the foregoing is true and correct. Subscribed at _____, California, this ____ day of _____ 2018.

_____

DAVID CHAIKEN

CERTIFICATE OF DEPOSITION OFFICER

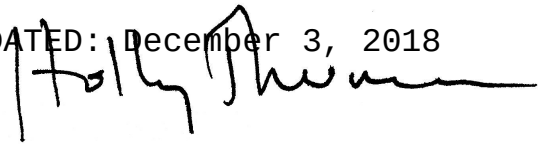
I, HOLLY THUMAN, a Certified Shorthand Reporter, California CSR License No. 6834, hereby certify:

That, prior to being examined, the witness in the foregoing deposition, to wit DAVID CHAIKEN, was by me duly sworn to tell the truth, the whole truth, and nothing but the truth;

That said examination was taken in shorthand by me, a disinterested person, on FRIDAY, NOVEMBER 30, 2018, at 2:24 P.M., before the following adverse parties: Farella, Braun & Martel, representing the petitioner, and Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, representing the patent owner, and was thereafter reduced to typewriting, by computer, under my direction and supervision;

I certify that I have not been disqualified as specified under Rule 28 of the Federal Rules of Civil Procedure. I further certify that I am not in any way interested in the event of this cause, and that I am not related to any of the parties thereto.

DATED: December 3, 2018



HOLLY THUMAN, CSR No. 6834

David Chaiken Deposition - November 30, 2018
Deposition Exhibit Nos. Cross Referenced to IPR Exhibit Nos.

Dep. Ex. No	Description	IPR / IPR Exhibit No.
14	Declaration of Dr. David Chaiken, Case No. IPR2018-00340	IPR2018-00340 - Exhibit 2032
15	U.S. Patent 7,260,538, Calderone et al.	IPR2018-00340 - Exhibit 1001 IPR2018-00341 - Exhibit 1001
16	Declaration of Dr. David Chaiken, Case No. IPR2018-00341	IPR2018-00341 - Exhibit 2032
17	Declaration of Dr. David Chaiken, Case No. IPR2018-00342	IPR2018-00342 - Exhibit 2032
18	U.S. Patent RE44,326, Calderone et al.	IPR2018-00342 - Exhibit 1001 IPR2018-00343 - Exhibit 1001
19	Declaration of Dr. David Chaiken, Case No. IPR2018-00343	IPR2018-00343 - Exhibit 2032
20	U.S. Patent 7,047,196, Calderone et al.	IPR2018-00344 - Exhibit 1001 IPR2018-00345 - Exhibit 1001
21	Declaration of Dr. David Chaiken, Case No. IPR2018-00344	IPR2018-00344 - Exhibit 2032
22	Declaration of Dr. David Chaiken, Case No. IPR2018-00345	IPR2018-00345 - Exhibit 2032
23	U.S. Patent 6,513,063, Julia et al.	IPR2018-00340 - Exhibit 1017 IPR2018-00341 - Exhibit 1017 IPR2018-00342 - Exhibit 1015 IPR2018-00343 - Exhibit 1015 IPR2018-00344 - Exhibit 1012 IPR2018-00345 - Exhibit 1012

David Chaiken Deposition - November 30, 2018
Deposition Exhibit Nos. Cross Referenced to IPR Exhibit Nos.

Dep. Ex. No	Description	IPR / IPR Exhibit No.
24	U.S. Patent 7,013,283, Murdock et al.	IPR2018-00340 - Exhibit 1018 IPR2018-00341 - Exhibit 1018 IPR2018-00342 - Exhibit 1013 IPR2018-00343 - Exhibit 1013 IPR2018-00344 - Exhibit 1010 IPR2018-00345 - Exhibit 1010
25	U.S. Patent 5,774,859, Houser et al.	IPR2018-00340 - Exhibit 1019 IPR2018-00341 - Exhibit 1019 IPR2018-00342 - Exhibit 1012 IPR2018-00343 - Exhibit 1012
26	Presentation deck, "AgileTV Voice Navigation" (PROMPTU_CC000134202 through -262)	IPR2018-00340 - Exhibit 2003 IPR2018-00341 - Exhibit 2003 IPR2018-00342 - Exhibit 2003 IPR2018-00343 - Exhibit 2003 IPR2018-00344 - Exhibit 2003 IPR2018-00345 - Exhibit 2003
27	"Paul Cook and Harry Printz of AgileTV discuss their latest technology, a voice-activated remote control," CNBC News Transcripts, Kudlow & Cramer, May 13, 2004	IPR2018-00340 - Exhibit 2019 IPR2018-00341 - Exhibit 2019 IPR2018-00342 - Exhibit 2019 IPR2018-00343 - Exhibit 2019 IPR2018-00344 - Exhibit 2019 IPR2018-00345 - Exhibit 2019