

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

3

4 APPLE, INC.
Petitioner

5

v.

6

7 MAXELL, LTD.
Patent Owner

8

9 Case No. IPR2020-00200
10 U.S. Patent No. 10,084,991 B2

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REMOTE DEPOSITION OF MAJA BYSTROM, PhD

16 Taken on Behalf of Petitioner

17 Friday, November 20, 2020

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19 REMOTE DEPOSITION OF MAJA BYSTROM, PhD,
20 produced, sworn and examined on Friday, November 20,
21 2020, between the hours of 8:01 a.m. and 10:29 a.m.
22 of that day, before Connie McCarthy, CCR, RMR, CRR.

23

24

25

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Reported By:

Connie McCarthy, RMR, CRR

MO CCR #1435

1 Friday, November 20, 2020 8:01 a.m.

2

3 COURT REPORTER: Good morning. First I
4 will read the stipulation, which you can agree to.

5 Then I will swear in the witness.

6 MS. BAILEY: Okay.

7 MR. PLUTA: Great.

8 COURT REPORTER: The attorneys
9 participating in this deposition acknowledge that I
10 am not physically present in the deposition room and
11 that I will be reporting this deposition remotely.

12 They further acknowledge that, in lieu of
13 an oath administered in person, I will administer the
14 oath remotely.

15 The parties and their counsel consent to
16 this arrangement and waive any objections to this
17 manner of reporting.

18 Please indicate your agreement by stating
19 your name and your agreement on the record.

20 MR. PLUTA: Rob Pluta on behalf of Maxwell.

21 I agree

22 MS. BAILEY: Jennifer Bailey on behalf of
23 Apple. I agree.

24

25 //

1 MAJA BYSTROM, PhD,
2 called as a witness by the plaintiff, having
3 been duly sworn, testified as follows:
4

5 EXAMINATION

6 BY MS. BAILEY:

7 Q. Good morning, Dr. Bystrom. I'm Jennifer
8 Bailey. Nice to meet you.

9 A. Good morning.

10 Q. Have you been deposed before?

11 A. I have.

12 Q. How many times have you been deposed?

13 A. Off the top of my head, it would be
14 probably somewhere around five or six, but I don't
15 know an exact number at the moment.

16 Q. So you're familiar with a deposition in
17 that I ask you a question and then you respond and
18 you let me finish my question and I will let you
19 finish your answer?

20 A. I am. This is my first deposition via
21 Zoom, though, so it's a little bit unfamiliar.

22 Q. Yes. And I'm sure the court reporter will
23 appreciate if we do definitely finish our questions
24 and answers just because the video call makes it a
25 little bit more difficult.

1 Okay. So I am going to be taking a break
2 probably approximately every hour today. If you want
3 to take a break prior to that, just let me know.
4 That's absolutely no problem.

5 A. Thank you. I may have to, early on, due to
6 a large amount of coffee. I definitely will. Thank
7 you.

8 Q. Understood. And then I just want to
9 quickly get some naming conventions out of the way.
10 One thing we're going to talk about today is the '991
11 patent. This is U.S. Patent number 10,084,991. And
12 it's the patent in suit that is the subject of this
13 IPR. Does that sound familiar to you?

14 A. It does.

15 Q. And if I refer to it as the '991 patent, is
16 that okay?

17 A. It is.

18 Q. So you'll understand what I'm referring to?

19 A. Yes.

20 Q. Okay. And just for the record, that's
21 Exhibit 1001 in the IPR proceeding.

22 Also, Dr. Bystrom, I'm going to discuss the
23 Asmussen reference today. This is Exhibit 1004 in
24 the IPR proceeding. Are you familiar with the
25 Asmussen reference?

1 A. I am.

2 Q. And if I refer to it as Asmussen, is that
3 okay with you?

4 A. It is.

5 Q. I may also discuss with you today your
6 declaration that was submitted. It is Exhibit 2021
7 in the proceeding. If I refer to it as your
8 declaration or the Bystrom declaration, is that okay
9 with you?

10 A. Yes, it is.

11 Q. And we will also potentially be discussing
12 Exhibit 1005 in the IPR proceeding. This is the Bear
13 reference. Are you familiar with this reference?

14 A. I am.

15 Q. And if a refer to it as the Bear reference,
16 is that okay with you?

17 A. That's fine, yes.

18 Q. Great. Thank you.

19 All right. Well, let's just jump right in.
20 Let's briefly talk about the '991 patent. So in your
21 opinion, does the '991 patent provide a system that
22 integrates the videophone and the device for watching
23 digital content?

24 MR. PLUTA: Object to form.

25 THE WITNESS: Give me a moment to get

1 oriented, please. I'm still looking for the '991
2 patent in my declaration, in my binder.

3 BY MS. BAILEY:

4 Q. Sure.

5 A. So as I said in Paragraph 50 of my
6 declaration, previously discussed problems that the
7 inventors set out to solve, I do say there's
8 something in the '991 patent overcame the problem, so
9 I discussed in the previous paragraph by providing a
10 system that integrates the videophone and the device
11 for watching digital content. But I expanded on that
12 by saying that further allows the user to switch
13 between watching the digital content and having a
14 videophone call with another user. And, of course,
15 there is more to that as well. Here I'm actually
16 quoting from the inventors.

17 Q. Of the '991 patent?

18 A. Of the '991 patent, yes.

19 Q. And you still agree with those opinions
20 today?

21 A. I do.

22 Q. Okay.

23 A. Let me just say that I didn't completely
24 discuss all of the inventions of the '991 patent in
25 this section. It is Section V.B., Paragraphs 49

1 through 51. I simply wanted to give an overview of
2 what the problems the inventors set out to solve were
3 and some of their approaches to the problems.

4 Q. So do you agree that the '991 patent
5 accomplishes this integrating of the videophone and
6 the device for watching digital content all done
7 without the requirement of having to move between
8 separate devices or perform manual operations?

9 MR. PLUTA: Object to the form.

10 THE WITNESS: Here I am quoting a,
11 paraphrasing, I believe, quoting and paraphrasing the
12 users' discussion of their problems that they solved
13 and their approaches to overcoming this problem. So
14 I do agree that the inventors laid out the problems
15 to be solved and the approach to the challenges, yes.
16 BY MS. BAILEY:

17 Q. Thank you. Could you please turn to the
18 Asmussen reference, specifically Figure 3?

19 A. I am -- excuse me for a moment. I'm still
20 locating....

21 I stopped in the middle of that sentence,
22 but I'm still locating the discussion of Figure 3.
23 So, I have Figure 3 in front of me. However, I'm
24 working off a hard copy, so I've also located the
25 discussion of Figure 3. So I'm ready to go.

1 Q. And when you say you've located a
2 discussion of Figure 3, are you referring to the
3 discussion in the Asmussen reference itself?

4 A. I am. At least a portion of the
5 discussion.

6 Q. And where are you looking at and referring
7 to the discussion of Figure 3?

8 A. I am looking at the bottom of Column 9. So
9 I see at least one discussion of Figure 3 starting at
10 about, I believe, Column 9, Line 49, under the
11 section Cable Headend.

12 Q. Okay.

13 A. And I haven't yet looked through to see --
14 for any other discussions of Figure 3.

15 Q. Okay. I'm going to ask you questions
16 regarding Figure 3. To the extent that you want to
17 look back at the textual discussion of Figure 3 and
18 the Asmussen reference, please feel free to and take
19 your time to do so.

20 A. Thank you.

21 Q. So I want an idea of what Figure 3 is
22 disclosing. First of all, do you agree that it's
23 showing the system components for the Asmussen
24 system?

25 A. I believe it shows certain components

1 reviewed by Asmussen. Asmussen is a -- I'm not going
2 to hesitate to say vast patent covering a lot of
3 ideas and a lot of components. So it certainly shows
4 some components in Asmussen's description. And I
5 believe it's primarily under the section of Cable
6 Headend. So I believe Asmussen at this point in the
7 spec, which runs somewhere over 60 columns, is
8 discussing the cable headend portion of the system.

9 Q. Let's start there then. What is a cable
10 headend?

11 A. There are a lot of definitions to cable
12 headend. I believe Asmussen defines it -- I'm sorry,
13 I have to go a little back a little bit to find where
14 this is. I think Asmussen defines it by the
15 operations it performs.

16 Part of what Asmussen uses to -- and I
17 would call a definition of a cable headend is at the
18 bottom of Column 9. So the cable headend -- and I'm
19 reading about Line 57 -- as a signal processor, the
20 cable headend 208.

21 So it's -- the cable headend prepares the
22 program signals that are received by the cable
23 headend 208 for transmission to each set top
24 terminal.

25 And going down a little bit further in

1 Column 9, the cable headends 208 which offer
2 different subscribers different program offerings may
3 allocate the program signals from the operations
4 center in various manners to accommodate different
5 viewers.

6 Asmussen continues on with the
7 functionality performed by the cable headend.

8 I'm not sure whether you want me to
9 continue to read through Column 10.

10 Q. No, that's good. Thank you.

11 Is "cable headend" a term of art in this
12 particular field?

13 A. Certainly different providers could use the
14 term "cable headend". So I would, depending on how
15 you use "term of art", I might call it a term of art,
16 but when describing cable headend in relation to
17 Asmussen, I would use cable headend as Asmussen
18 describes its functionality.

19 Q. So referring back to Figure 3, do you see
20 where it says Operations Center? It's in the top
21 left and it has the reference numeral 202.

22 A. I do.

23 Q. What is the Operations Center in Asmussen?

24 A. Again, Asmussen defines the operations
25 center by its operations. I believe that is earlier

1 in the spec.

2 So turning to Column 8, and starting at
3 line -- I believe it's 16. But we see that the
4 operations center is defined in part by the packaging
5 of digital signals that is typically performed at the
6 operations center 202.

7 And going down to about Line 37, packaging
8 process also accounts for any groupings by a
9 satellite transponder which are necessary.

10 So if we look -- actually, and maybe
11 Column 7 is a better reference, functionality of the
12 operations center. The -- Column 7, Line 57, The
13 operations center 202 performs two primary services,
14 packaging television programs and generating the
15 program control information signal.

16 Q. What happens to the television programs
17 that are packaged at the operations center? And
18 specifically, where do they go?

19 A. Looking again, and using Asmussen's
20 words -- so I believe you're talking about the
21 packaging process. So I read a little while earlier,
22 starting at about Line 37, The packaging process also
23 accounts for any groupings by satellite responder
24 which are necessary. The operations center may send
25 different groups of programs to different cable

1 headends and/or set top terminals.

2 So not -- reading directly, cable headends
3 208 or set top terminals 220.

4 So -- but certainly there are some
5 intermediate steps which are laid out in the spec.
6 Do you want me step through the satellite and so
7 forth?

8 Q. No, thank you. I appreciate the offer, but
9 no thank you.

10 So the video programs that are packaged at
11 the operations center are sent to the set top
12 terminal?

13 A. Specifically, it says that the operations
14 center 202 may send different groups of programs to
15 different cable headends 208 or set top terminals
16 220.

17 Q. So are at least some of the video programs
18 packaged at the operations center sent to a set top
19 terminal?

20 A. Well, specific set-top terminal -- you'd
21 have to tell me what you're referring to. I'm
22 generally pointing to the part of this back here that
23 says programs can be go to cable head end and set-top
24 terminals.

25 Q. So video programs can go to set-top

1 **terminals?**

2 **A. Yeah, according to the spec. They may be**
3 **sent to cable headends and/or set-top terminals.**

4 **Q. And for a video program that is sent to the**
5 **set-top terminal, walk me through the user being able**
6 **to access that video program. What would the user**
7 **need to do?**

8 **And the user -- I should probably define**
9 **that. I mean the person watching the television.**

10 MR. PLUTA: Object to the form.

11 THE WITNESS: Well, here I am having a
12 tough time knowing where to start since Asmussen
13 describes a large set of advanced features with menus
14 allowing users to access these advanced features.

15 So ignoring the part that -- where you
16 decided to skip earlier about program delivery and
17 cable headend, which is described in sections --
18 Columns 8 to 9 and 10, let me start with the spec in
19 about Column 11 where the set-top terminal is
20 described.

21 So I believe what you might be asking me is
22 about the set-top terminal which is in -- I'm going
23 to call it Section 5. So Section A, Portion 5,
24 starting on page -- excuse me, Column 11: Prior to
25 that, there's a lot involved in getting the signals

1 down according -- and I don't want to necessarily
2 breeze by all that. But in the set-top terminal
3 section, set-top terminal is described as being the
4 portion of the delivery system that resides in the
5 home of the subscriber.

6 And in Column 12, looking at about Line 3,
7 If the subscriber selects a specific program from
8 menu, the set top terminal determines on which
9 channel the program is being shown, demultiplexes and
10 extracts the signal channel transmitted from the
11 cable headend 208.

12 And then the spec description goes further
13 into describing how this can occur.

14 So I'm not really sure we're getting at --
15 Asmussen describes a vast array of menus and
16 implementing menus, and I can certainly go ahead and
17 discuss those, the advanced features Asmussen
18 proposes that would allow a subscriber to select a
19 specific program.

20 BY MS. BAILEY:

21 Q. So is --

22 A. With the upgraded hardware capabilities.

23 Sorry. Please go ahead.

24 Q. Sorry, I didn't mean to interrupt you. I
25 thought you were done.

1 A. Maybe I'm a little bit baffled by the
2 question and how much of a response you want, because
3 Asmussen is, as I said earlier, is a vast patent
4 directing to -- providing a great deal of upgrades,
5 menu capabilities, advanced features. So there is a
6 lot that goes into any sort of an operation of any
7 piece of an Asmussen system.

8 Q. Would you agree that a subscriber can
9 access a video program from the set top terminal?

10 A. I don't know necessarily what you mean by
11 access a video program from the set top terminal. So
12 as I said earlier, the subscriber can select a
13 specific program from the menu, according to the spec
14 of Asmussen.

15 Q. Can the subscriber view a video program
16 using the Asmussen set top terminal at the user's
17 television?

18 A. So again, that's bringing in the connection
19 of a set top terminal to a television. We certainly
20 should dive into that in Asmussen as well. But
21 certainly a subscriber can select a program, and a
22 subscriber can view -- so this is a specific program
23 from the program list available to the subscriber.
24 And continuing on Column 12, that enables the
25 subscriber to view the selected program.

1 Q. Can the subscriber order a program to be
2 viewed using the Asmussen set top terminal?

3 A. I'm not sure I understand what you mean by
4 order. As described in Section 12 in the advanced
5 menu capabilities, a subscriber would select a
6 specific program from the menu.

7 Q. Look at Figure 3, if you would, please. Do
8 you see the bottom left corner it looks like a
9 television and it has reference numeral, 222?

10 A. I do.

11 Q. And do you see the phrase, Press Order
12 Button Here To Order?

13 A. I do.

14 Q. What does that phrase mean to you?

15 MR. PLUTA: Objection, form.

16 THE WITNESS: I have to refresh my memory
17 because I don't recall the wording of "press order
18 button here to order" within the spec. So give me a
19 moment, please. I'll refresh my memory.

20 BY MS. BAILEY:

21 Q. Dr. Bystrom, not to interrupt your train of
22 thought, but if it would be helpful, I can provide a
23 reference in Asmussen for you to look at.

24 A. Sure.

25 Q. Column 29, beginning Line 62.

1 A. I'm sorry, that's not really helpful at all
2 because Figure 3 is discussed, as I said earlier, in
3 the -- sorry, just lost my page -- in this spec.
4 Figure 3 is discussed in the cable headend section.
5 And I'm currently not seeing any wording about press
6 button to order in the cable headend section, but if
7 you give me a moment, I'll refresh my memory.

8 Q. Okay. And you might also take a look at
9 Figure 13a of Asmussen, too.

10 A. I'll start by saying I've just reviewed
11 Section A 4, cable headend, and A 5, set top
12 terminal, and I don't see any reference to press
13 order button here to order.

14 Q. Did you review Column 29? And I'm going to
15 reference Line 49, which is a little bit more than I
16 referenced earlier, that begins, Remote Control and
17 Subscriber Access of Set Top Terminal.

18 A. I haven't yet.

19 Q. May I suggest that you review Column 29,
20 Lines 49 through the end of that column, 67?

21 A. Okay. So let me make sure that I reviewed
22 the correct thing you asked me for look at.
23 Column 29, 49 through 67?

24 Q. Yes.

25 A. Oh, yes, I've had a chance to review that.

1 Q. Along with Figure 13a that's referenced in
2 that section?

3 A. Along with Figure 13a, yes.

4 Q. So tell me, what does the ordering button
5 354 do, in your opinion, when the subscriber presses
6 it?

7 A. That is not clear from Column 29.

8 Q. You have no opinion on what the ordering
9 button 354 does?

10 A. It's certainly not clear from Column 29.

11 So I'd like to note that this remote
12 control subscriber access of set top terminal is
13 located within -- sorry, I'm pausing here for a
14 moment because this is a -- again, this is a fairly
15 vast patent.

16 So just to make sure I have this correct, I
17 believe it's located within Section C, Detailed
18 Description of Advanced Set Top Terminal. And --
19 okay. So would be independent of what is shown in
20 Figure 3, which is the basic overview of the system.

21 Q. So do you have an opinion on what the order
22 button 354 shown in Fig. 13a and described in
23 Column 29 does?

24 A. I do not. It's not described in the --
25 ordering button 354 is not described in Column 29, as

1 listed.

2 Q. Do you see at Column 29, approximately
3 Line 58 through 59, where it refers to a new
4 Section 352 that, quote, provides the additional
5 digital menu access and ordering functions. End
6 quote. What does that mean to you?

7 A. Again, reviewing, I believe that they are
8 talking in this section about Figure 13a, a
9 two-section remote. So Section 352 is another --
10 apparently hardware, and it's not necessarily very
11 clear what is happening here. But it looks like
12 apparently a hardware -- and I might say
13 augmentation -- that provides additional digital menu
14 access and ordering functions.

15 Q. Do you have an opinion on what the digital
16 menu access means?

17 A. Again, it's not necessarily very clear from
18 this particular section you point to. However,
19 Asmussen as a whole is focused on providing a large
20 set of menus and interfaces, including the hardware
21 upgrades for -- and let me -- let me hesitate there
22 for a moment to be clear about what some of these
23 advanced features and upgrades do.

24 Okay. The reason I hesitated there is
25 because I wanted to be able to point to a section in

1 my declaration where I think I succinctly captured a
2 lot of this. So in Paragraph 58, I gave a basic
3 description of Asmussen using the inventor's words
4 and discussing a number of advanced features and
5 function capabilities. So there's a long list of
6 advanced features and functional capabilities, but I
7 think I didn't discuss in detail some of the
8 individual hardware upgrades that are part of
9 Asmussen. So if you give me a moment I'll point out
10 where they are in the spec.

11 My apologies. I'm taking quite a bit of
12 time because the hardware upgrades I'm going to point
13 to are scattered throughout the spec. And, as I
14 said, the spec is very long.

15 So the hardware upgrades, I think maybe
16 most succinctly are described starting at Column 26
17 where we take a look at the individual hardware
18 upgrades. We have the Level A interactive unit
19 starting Column 27, Line 30, allows the subscriber to
20 access interactive services offering additional
21 information about programs.

22 And, continuing on, about quizzes,
23 geographical facts, etc.

24 The Level B interactive unit provides the
25 user with access to online database services for

1 applications such as home shopping, airline
2 reservations, news, financial services, classified
3 advertising, home banking, and interactive teletext
4 services.

5 Level C interactive unit -- and now I'm
6 reading in Column 27 down about Line 56 -- employs a
7 high volume local storage capacity, including compact
8 disc or other random access digital data formats.

9 And going over to Column 28, the Level D
10 hardware upgrade allows the subscriber separate
11 access to the digital radio channels while other
12 programming, not necessarily radio, is being viewed
13 on the television.

14 And Column 28, Line 42, the Level E
15 hardware upgrade allows the subscriber to download
16 large volumes of information from the operations
17 center of cable headend. And it will enable
18 subscribers to download data such as books,
19 magazines, to local storage.

20 So in addition to that, possibly what is
21 also helpful here is Figures -- let me start maybe
22 with Figure 18 going through Figure 19, 20a, 20b,
23 20c, 20d, and so forth, which shows things such as
24 interactive services, which shows interactive
25 programming ventures, and would show things like

1 airline information and reservation system.

2 Q. Are you finished?

3 A. I am.

4 Q. Okay. I didn't want to interrupt.

5 A. Thank you.

6 Q. You just read from a Column 28, Lines 42
7 through approximately 44. I'm going to read that
8 back into the record.

9 The Level E hardware upgrade allows the
10 subscriber to download the large volumes of
11 information from the operations center 202 or cable
12 headend 208.

13 A. Yeah. And continuing that, the Level E
14 hardware upgrade will enable subscribers to download
15 data such as books and magazines to local storage.

16 Q. Agreed. And then continuing on to the next
17 paragraph, beginning Line 53, could you read that,
18 please?

19 A. So Column 28, Line 53, The downloadable
20 information may be text to video supplied by the
21 operations center 202 or cable headend 208. With
22 this upgrade, the -- with this upgrade, books may be
23 downloaded and read anywhere with the portable
24 reader.

25 Q. So does Asmussen inform you that the user

1 is allowed to choose a program to be viewed?

2 A. Again, I am not clear on your context here.
3 As I said earlier, a user can -- going back to
4 Column 12, a subscriber can select a specific program
5 from a menu. We had discussed that earlier.

6 Q. Agreed. So reading Column 28, and you just
7 read it into the record, 28, Lines 53 through 54,
8 says, The downloadable information may be text or
9 video supplied by the operations center 202 or cable
10 headend 208.

11 Does this, along with the other teachings
12 in Asmussen, tell you that a user, a subscriber, may
13 choose the programs to be viewed on their television?

14 A. So I think we might be talking about
15 different things. When we take a look at Column 12,
16 a user is choosing a -- I guess a more familiar
17 parlance, choosing a channel. When we look at
18 Column 28, the Level E hardware upgrade is -- I think
19 they describe it as a storage device, but let me be
20 very precise.

21 Going back to Line 44, The Level E hardware
22 upgrade will allow -- will enable subscribers to
23 download data such as books and magazines to local
24 storage. Primarily, the Level E hardware upgrade is
25 an additional local storage unit, e.g. hard disk,

1 floppy, optical disk or magnetic cartridge.

2 So I'm not sure why we're necessarily
3 equating a local storage device -- and I think you
4 may have equated that with changing a channel.

5 Q. I did not make that equation. You inferred
6 that.

7 A. Okay.

8 Q. I'm not sure how. But let me ask my
9 question again.

10 A. Sure.

11 Q. If the user is downloading text or video
12 supplied by the operations center, is the user
13 choosing the text or video to be viewed?

14 A. What this column describes is that the
15 Level E cable hardware upgrade or expansion is
16 allowing the subscriber to download large volumes of
17 information. So what it says, what Column 28 says is
18 that with this upgrade, video may be downloaded and
19 stored in compressed form for later decompression.
20 So the Level E hardware upgrade is enabling a user to
21 download large pieces of data for later accessing.

22 Q. So the enablement of downloading large
23 pieces of data for later accessing allows the user to
24 choose the text or video programs that they wish to
25 view; is that correct?

1 A. We can probably infer something similar to
2 that, because a user has to somehow use a Level E
3 hardware upgrade. But I think it's a little bit
4 silent on how that is going to happen, especially
5 within this column. So if you want to point me to a
6 particular menu or option that would show that....

7 Q. The --

8 A. I cannot confirm whether that inferring is
9 correct. I'd simply say that Column 28 shows that
10 a -- large amounts of data such as text or video can
11 be downloaded using the Level E hardware upgrade.

12 Q. By the user downloading certain text or
13 video, is the user choosing which text or video to be
14 viewed?

15 MR. PLUTA: Object to form.

16 THE WITNESS: I'm a little bewildered by
17 that question because while the Level E hardware
18 upgrade allows the subscriber to download large
19 volumes, this information, as described in Column 28,
20 it's not necessarily clear from Column 28 how this is
21 done. So I'm happy to agree that Column 28 and the
22 hardware upgrade allows the user to download large
23 volumes of information, such as text other video
24 supplied by the operations center. Presumably then
25 it's up to the user what to do with that.

1 BY MS. BAILEY:

2 Q. So you just said that you were bewildered
3 by my question. And I had the sense that my question
4 is pretty straightforward. So if you don't
5 understand my question, please let me know.

6 Is it -- and I'm trying to kind of
7 understand why you used the term "bewildered". You
8 said that it is not necessarily clear how this is
9 done. Are you referring to the downloading when you
10 say that?

11 A. No. So you had pointed me to Column 28 as
12 a particular description of the Level E hardware
13 upgrade. And if you want me to focus just on
14 Column 28, that doesn't tell me anything about how
15 the Level E hardware upgrade lets the user interface
16 with it. So if there's something else you'd like me
17 to focus on, I'm certainly happy to do so.

18 Q. But you would agree that the user can
19 download text or video supplied by the operations
20 center?

21 A. Yes, I would.

22 Q. Could you please pull out the '991 patent?
23 And turn to Claim 1. It's at Column 32. Please read
24 through the claim to yourself -- you don't need to
25 read out loud -- just to refamiliarize yourself with

1 the claim. I'm going to ask you a few questions
2 regarding it.

3 A. Okay.

4 Q. Thank you.

5 Okay. Claim 1, beginning at Column 32,
6 Line 22, recites a network interface. Do you see
7 that?

8 A. I do.

9 Q. Specifically, Claim 1 recites a network
10 interface configured to receive first digital
11 information.

12 In your opinion, what is an example of
13 first digital information?

14 A. First digital information is digital
15 information received from a content server that is
16 coupled to the communication apparatus via a network
17 interface. So turning to the spec, content server,
18 to my best recollection -- and I would have to -- I'm
19 going to quickly go through and confirm this -- I
20 believe a content server is -- a content server is
21 discussed with respect to perhaps a VOD server,
22 Block 21 in Figure 3.

23 Q. In your opinion -- I'm sorry, are you done,
24 Dr. Bystrom?

25 A. I am. I could expand a little bit further

1 on the VOD contents watching in Column 18. I believe
2 this is a VOD -- so, first digital information can be
3 VOD contents received from a content server. And
4 just to be very clear, the first digital information
5 received from the -- a content server has to be
6 received over the network interface with the second
7 digital information from the communications device as
8 discussed in that particular element of Claim 1.

9 Q. You're using the phrase VOD. What does
10 that stand for?

11 A. Video on demand, in this sense.

12 Q. And what does video on demand mean, in your
13 opinion?

14 A. Video -- I pause there because I wanted
15 refresh my memory about whether the '991 spec talked
16 or particularly defined video on demand. So if you
17 give me a moment, I'll do that, and I'll use their
18 words.

19 Okay. I'm turned to Column 7. So the
20 inventors have defined video on demand in some sense,
21 by saying that the -- starting at Line 52 -- the
22 videophone function-added TV receiver 1 also has an
23 antenna (not shown) for enabling it to receive
24 digital broadcast programs and, simultaneously, is
25 linked by the network 6 to a video-on-demand server,

1 **thereby enabling it to receive services (downloads)**
2 **of any available contents from this VOD server, say,**
3 **VOD contents.**

4 **Q. So beyond what you just read from the '991**
5 **specification, does it tell you what video on demand**
6 **means?**

7 MR. PLUTA: Object to form.

8 BY MS. BAILEY:

9 **Q. And actually, let me ask this question**
10 **again in a different way.**

11 **What is your opinion of video on demand**
12 **information?**

13 MR. PLUTA: Object to form.

14 THE WITNESS: In the context of the '991
15 patent, I would have to refer you to what I just read
16 in figure -- excuse me, in Column 7. But also have
17 to refer you to Column 12 where the video on demand
18 viewing is described. So for instance, when a
19 user -- so going to Column 12, starting about
20 Line 34, this spec talks about video on demand
21 further, when the, quote, "VOD" button 7b (Fig. 4) of
22 the remote control 7 is operated, the decoder 11
23 executes the VOD-use decode function under control of
24 the processor 12.

25 And so forth.

1 So going down to Line 39, Then the VOD
2 contents from the VOD server 21 which are received at
3 the network I/F 15 -- and I read that as network
4 interface -- are such that the moving-picture image
5 contents and still image contents plus audio contents
6 thereof are decoded by the decoder 11 and then
7 supplied to the display panel 8 and speakers 3,
8 resulting in visualization and reproduction of these
9 contents.

10 So the user presses the VOD button 7b, the
11 VOD contents from the VOD server 21 are received by
12 the number interface, decoded and supplied to display
13 panel 8 and speakers 3.

14 BY MS. BAILEY:

15 **Q. Is content downloaded from the VOD server**
16 **VOD content?**

17 **A. I'm not sure what you mean by that**
18 **question. So there's --**

19 **Q. What part of the --**

20 **A. So there's a content server 21, which is**
21 **called a VOD server in Column 12. And the VOD**
22 **contents that we see in also Column 12 are received**
23 **from the VOD server. I hope that clarifies things.**

24 **Q. Is content downloaded from the VOD server**
25 **VOD content?**

1 A. I think when we're talking about video on
2 demand, that the video -- the VOD contents are
3 received from the VOD server, so they are certainly
4 received as VOD contents. And then they are decoded
5 and displayed when the VOD button is pressed.

6 Yeah, so maybe I'm having a little bit of a
7 trouble with that question, because I've just read
8 that the VOD contents from the VOD server are
9 received at the network interface. So in that sense,
10 the VOD contents -- when the VOD button is pressed,
11 what is received from the VOD server is the VOD
12 contents.

13 Hopefully, by phrasing it that way, I've
14 answered your question.

15 Q. So the VOD contents are downloaded from the
16 VOD server?

17 A. VOD contents are received at the network
18 interface. So just using the inventor's wording, the
19 VOD contents from the VOD server received at the
20 network interface 15. I don't know if you're asking
21 me a little bit -- about a little bit further down in
22 Column 12, because there can be text data VOD
23 contents that's applied to the HTML browser.

24 So I can talk about the text data in the
25 HTML browser.

1 Q. Look back at Column 7 of the '991
2 specification. You actually referred me to it
3 earlier. Lines 52 through 57.

4 A. Sure.

5 Q. And it says -- let's pick up at about
6 Line 55. The network 6 to a video-on-demand VOD
7 server, thereby enabling it to receive services
8 (downloads) of any available contents from the VOD
9 server, say, VOD contents.

10 So is content downloaded from the VOD
11 server VOD content?

12 A. Going strictly by the inventor's wording
13 here, they use the word "say" VOD contents. So I
14 would say that VOD contents is a particular example
15 of available contents from the VOD server. If you're
16 asking me about things that are not video, like HTML,
17 that text that HTML referred to in Line 12, that may
18 be part of the VOD contents, I can certainly discuss
19 that.

20 Q. Do you agree that the videophone
21 function-added TV receiver 1 receives services or
22 downloads of any available contents from the VOD
23 server, say, for example, VOD contents?

24 A. I have trouble following that because I
25 think you started reading part of Column 7 and

1 finished with another part of Column 7. But I agree
2 that the inventors in Column 7 wrote that the video
3 function-added TV receiver 1 also has an antenna not
4 shown for -- enabling it to receive digital broadcast
5 programs, and simultaneously is linked by the network
6 to a video on demand VOD server, thereby enabling
7 it to receive services (downloads) of any available
8 contents from this VOD server, say, VOD contents.

9 So that I can definitely agree that the
10 inventors wrote.

11 Q. Let's go back to Claim 1 and its recitation
12 of first digital information. Is there any other
13 type of content other than VOD content that would be
14 included within first digital information, in your
15 opinion?

16 A. That's a bit of a hypothetical. And I
17 haven't -- I would have to think through that --

18 Q. You have no opinion --

19 A. -- in order to --

20 Q. Oh, go ahead.

21 A. I'm sorry. I see that the -- so I see
22 first digital information in the context of this
23 element 1A as being received from a content server,
24 and see that content server mentioned in the spec as
25 Block 21. Or let me say that Block 21 in Figure 3 is

1 labeled as VOD server.

2 So beyond that, I would certainly have to
3 think about that -- other hypothetical examples
4 further.

5 Q. Within Claim 1's recitation of first
6 digital information, do you have an opinion of the
7 types of content that would be included within first
8 digital information?

9 A. So within the structure of Claim 1, the
10 element's starting a network interface, so I
11 certainly believe that the VOD content as described
12 in the spec can be first digital information.

13 Q. Can anything else be first digital
14 information, any other type of content?

15 A. Again, that's very much a hypothetical. If
16 you have specific examples, I'd be happy to address
17 those. But taking a look at the element and being
18 informed by the spec, I see that the content server
19 can be mapped to the VOD server 21 in Figure 3, so
20 the first digital information can include VOD
21 contents.

22 Q. To confirm my understanding of what you
23 just said -- please correct me if I'm wrong -- you
24 have no opinion as to any other types of content
25 other than VOD content that would be included within

1 **the claim to first digital information?**

2 MR. PLUTA: Object to the form.

3 THE WITNESS: Again, let me reiterate that
4 I see by looking at the spec that VOD contents can be
5 included in the first digital information. I think
6 you're giving me a hypothetical here, so if you have
7 a particular first digital information you are
8 proposing, I'd certainly be happy to address that.
9 BY MS. BAILEY:

10 **Q. Would video streaming off the internet be**
11 **first digital information?**

12 **A. So should video streaming over the internet**
13 **fall within a first digital information received from**
14 **a content server, that is coupled to the**
15 **communication apparatus via the network interface,**
16 **and that also meets the other requirements of that**
17 **element of the claim. Then, without going into**
18 **detail, specific examples, I believe it could be**
19 **first digital information. However, I still think it**
20 **has to meet the content server requirement of this**
21 **claim element.**

22 **Q. Okay. Thank you. I think this is a good**
23 **time for a five-minute break.**

24 **Rob, does that work for you?**

25 MR. PLUTA: Sure, if it works for everyone

1 else.

2 MS. BAILEY: Thank you.

3 (Recess)

4 THE WITNESS: Let me ask, before we go to
5 the next question, that I wanted to make sure I
6 understood the previous question, and that I had
7 understood -- I believe you'd asked about video
8 streaming, and I had understood video streaming
9 really in the context of what's described in
10 Column 12 of the '991 patent.

11 BY MS. BAILEY:

12 Q. Dr. Bystrom, did you speak with your
13 counsel during the break?

14 A. No, I did not. I just had a moment to
15 reread Column 12.

16 Q. So I apologize, but I'm unclear on what you
17 are saying.

18 A. So I had understood your previous question
19 on -- I believe you had asked me about whether video
20 streaming would be -- and here I probably simply need
21 the question reread because I had interpreted the
22 video streaming as first digital information. I may
23 have answered that it would be a first digital
24 information, but I wanted to make sure that the video
25 streaming was interpreted, for instance, in terms of

1 Column 12 of the '991 patent.

2 Q. Well, in my opinion -- I'm not the one
3 being deposed here -- but in my opinion, video
4 streaming over the internet is a fairly
5 well-understood phrase. So when I ask does first
6 digital information include video streaming over the
7 internet, what is your understanding of that
8 question?

9 A. My understanding is that as long as the
10 video streaming operates as -- with respect to
11 Column 12 of the '991 patent and also where the
12 involved contents-watching sections of the '991
13 patent occur and meets the remaining constraints of
14 Claim A, then yes, it can be a first digital
15 information.

16 Q. So would you limit first digital
17 information to only what is disclosed in Column 12 of
18 the '991 patent and the VOD content that's otherwise
19 described in the '991 patent.

20 MR. PLUTA: Object to form.

21 THE WITNESS: I, again, am using Column 12
22 and the remainder of the spec to inform my
23 understanding of Claim 1, so I think VOD contents
24 from a VOD server meeting the remainder of the
25 limitations of Claim 1 certainly are first digital

1 information. I believe I'd asked you for specific
2 examples of what you wanted to also serve as first
3 digital information. So I imagine if you want to
4 give me specific examples to examine, I can perhaps
5 do that on the fly. But I would perhaps need more
6 time to think about how they fit within the claim
7 elements.

8 BY MS. BAILEY:

9 Q. So I'll go back to my question I asked
10 before the break where you said my question was
11 hypothetical and asked for examples of the
12 hypothetical.

13 Is video streaming over the internet first
14 digital information as recited in Claim 1 of the '991
15 patent?

16 A. Again, I can't answer that broad a
17 Question because there is quite a bit that goes into
18 Claim 1. So we see that in -- I believe I called it
19 "element a". Let me double-check.

20 Yeah, so Claim Element 1.a, the first
21 digital information has to come over a network
22 interface configured to receive first digital
23 information received can -- which is received from a
24 content server which is coupled to the communications
25 apparatus via the network interface, and second

1 digital information from the other communications
2 apparatus.

3 So if a first digital information -- and
4 you had called it video streaming?

5 Q. Yes.

6 A. I'm sorry, I've already lost track of your
7 question. Meets these requirements. I would
8 certainly be happy to consider it as a first digital
9 information. However, I believe that we should be
10 informed by the spec as to what the content server
11 is, for instance, the VOD server.

12 So I think what I'm asking for with my
13 answer to that question is a little bit more detail.
14 So does that meet all of the requirements in 1.a? So
15 how am I to be informed by the spec when you're
16 talking about that?

17 Q. Let's assume that video streaming over the
18 internet meets the contents of Claim 1.a -- and I can
19 read that back into the record so that my question is
20 clear, or you can -- if you would like me to do that.

21 A. Huh-uh.

22 Q. Okay.

23 So in the instance where first digital
24 information is video streaming over the internet and
25 we also have a network interface configured to

1 receive that first digital information, it's received
2 from a content server which is coupled to the
3 communication apparatus via the network interface.

4 In that instance, would the first digital
5 information that is -- or would the video streaming
6 over the internet be considered first digital
7 information as recited in Claim 1.a?

8 MR. PLUTA: Object to form.

9 THE WITNESS: I'm sorry, I don't think you
10 read all of Claim 1.a. Or if you did, I apologize,
11 but I missed it.

12 BY MS. BAILEY:

13 Q. Is video streaming over the internet
14 included within first digital information as recited
15 in Claim 1.a?

16 A. Again, I have to give you the same answer
17 and set of constraints that I did before. It has to
18 meet all the elements of claim -- all of the
19 elements -- all the pieces, excuse me, is probably a
20 better way to put it, legally -- of Claim 1.a have to
21 be met.

22 Q. If the video streaming --

23 A. Go ahead. I'm sorry. I apologize.

24 Q. Me, too. I apologize.

25 If the video streaming over the internet

1 **does meet all of the pieces of Claim 1.a, would you**
2 **consider it first digital information?**

3 MR. PLUTA: Object to form.

4 THE WITNESS: Again, so if the video
5 streaming meets -- so if a network interface
6 configured to receive first digital information which
7 is received from a content server which is coupled to
8 the communication apparatus via the network
9 interface, and second digital information from
10 another communication apparatus. So you said if
11 video streaming, and I assume that's shorthand for
12 some sort of video on demand, because I think of
13 video streaming really as a verb, then I can -- I'd
14 certainly be happy to consider it as first digital
15 information. But -- however, I still think I need
16 more information here. And I apologize for the
17 bewilderment, but I think maybe I perhaps got lost in
18 the use of the noun and verb with the video
19 streaming.

20 BY MS. BAILEY:

21 **Q. Do you agree that Claim 1 recites a network**
22 **interface?**

23 **A. I agree that a network interface is part of**
24 **Claim 1.**

25 **Q. And you provided an opinion on whether**

1 Asmussen discloses a network interface; is that
2 correct?

3 A. No. Looking at my report, that is not
4 correct. In Paragraph 89, I specifically write my
5 opinion Asmussen does not disclose the -- excuse me.
6 Let me start over again.

7 In Paragraph 89, in my opinion, Asmussen
8 does not disclose the claimed network interface.
9 Claim Element 1.a recites, quote, a network interface
10 configured to receive first digital information and
11 second digital information.

12 Q. In Claim 1, what is the network interface
13 configured to do?

14 A. So reading Claim 1.a again, or Claim 1,
15 "element a" again, Claim Element 1.a states, A
16 network interface configured to receive first digital
17 information which is received from a content server
18 which is coupled to the communication apparatus via
19 the network interface, and second digital information
20 from the -- another communication apparatus.

21 Q. In your opinion, does the network interface
22 receive first digital information and second
23 information?

24 A. Along with the first digital information
25 being received -- and again, I'm paraphrasing this a

1 little bit -- being received from a content server
2 coupled to the communication apparatus, and the
3 second digital information from another communication
4 apparatus.

5 Q. Does Claim 1 require the network interface
6 to be configured to do anything else beyond receive
7 first digital information and second digital
8 information?

9 MR. PLUTA: Object to form.

10 THE WITNESS: Again, I would have to -- I
11 don't know if I'm allowed to object, but I'd have to
12 object and say that Claim 1.a requires that the
13 network interface be configured to receive first
14 digital information which is received from a content
15 server which is coupled to the communication
16 apparatus via the network interface, and second
17 digital information from the -- another communication
18 apparatus.

19 So I don't think we can leave those other
20 parts out because they are portions of Claim
21 Element 1.a.

22 BY MS. BAILEY:

23 Q. Is the network interface configured to do
24 anything else beyond what you just read to me, per
25 Claim 1?

1 A. Per 1.a, Element 1.a lays out what the
2 network interface was required to do.

3 Q. And so the --

4 A. Within Claim 1 -- I'm sorry. Within
5 Claim 1.

6 Q. And so the requirements of what the network
7 interface is configured to do is receive first
8 information -- excuse me, receive first digital
9 information which is received from a content server
10 which is coupled to the communication apparatus via
11 the network interface, and second digital information
12 from the another communication apparatus.

13 Is that correct?

14 A. I got lost in the beginning of that
15 question, but I believe you've just read Element 1.a
16 to me, which discusses the network interface. So I
17 would have to say that the communication apparatus of
18 Claim 1 does have to have a network interface which
19 operates as required -- or is configured as required
20 in Element 1.a.

21 Q. Is the network interface configured to do
22 any other functionality other than receive first
23 digital information and second digital information,
24 per Claim 1?

25 A. I'm -- again, I am not quite sure what

1 you're asking. If we look at Claim 1 as a whole, we
2 look at Claim 1 as the invention claimed being a
3 communication apparatus for transmitting and
4 receiving digital information to and from another
5 communication apparatus comprising, Claim 1.a goes
6 into a portion of this communication apparatus,
7 specifically, the network interface, and talks about
8 the configurations of the network interface. So I'm
9 not sure what you're asking. I can read the 1.a
10 again, but I think the claims stand as they're
11 written.

12 Q. Does Claim 1 define the hardware for the
13 network interface?

14 MR. PLUTA: Object to form.

15 THE WITNESS: I'm not sure what you mean by
16 hardware.

17 BY MS. BAILEY:

18 Q. You don't understand what hardware is, as a
19 POSITA?

20 A. As an expert in the field, I understand
21 that hardware can have many definitions. So if
22 you're asking me for a particular brand, I don't see
23 any particular brand listed. If you're asking me for
24 a particular type of network, I'm not seeing, within
25 the claim, a type of network listed.

1 So the claim itself talks about a
2 communication apparatus for transmitting or receiving
3 digital information to and from another communication
4 apparatus, comprising.... And then Element 1.a is
5 a -- and hopefully I'm using this correctly -- a
6 limitation or description on a particular portion of
7 that communication apparatus, which is the network
8 interface.

9 Q. You just talked about a type of network
10 interface. Does the '991 patent describe a type of
11 network interface?

12 A. I believe I talked about a type of -- a
13 network interface in terms of brand, or I might have
14 mentioned something like a particular protocol.

15 Q. No, I'm repeating back what you just said.

16 A. Okay. Sorry. I've already forgotten what
17 I said earlier.

18 Q. Yeah, you were explaining the different
19 types of hardware, in your opinion. You said a
20 brand, a type of network interface, and so I want to
21 understand, first of all, what do you mean by a type
22 of network interface?

23 A. Oh, okay. So by that I meant -- had in
24 mind something like a particular protocol.

25 Q. Does the '991 patent define a particular

1 protocol for the network interface?

2 A. I'd have to go back and refresh my memory.
3 But -- let me do that, because I am not -- don't
4 remember at this moment whether it does or doesn't.

5 I've just taken a quick skim of some
6 sections of the '991 patent, and I don't see
7 particular protocols called out. So certainly in the
8 claim itself, Claim 1 itself, the network interface
9 does not mention any particular protocol. And off
10 the top of my head, I don't remember one. What I
11 mean by protocols, communications protocol. It may
12 be in there, but I do not remember one. In a quick
13 scan, didn't see any particular communications
14 necessarily called out.

15 I'd like to say that I'm going by memory
16 without a complete reread of '991. So there may be
17 communications protocol in there, I just don't
18 remember it off the top of my head.

19 Q. In your opinion, what does the network
20 interface do within the system described in the '991
21 patent?

22 MR. PLUTA: Object to form.

23 THE WITNESS: Are you talking specifically
24 about the claimed invention?

25 //

1 BY MS. BAILEY:

2 Q. My question wasn't limited to the claimed
3 invention, but if we want to limit it to Claim 1, I'm
4 fine doing that. So let me reask the question.

5 What does the network interface do within
6 the communication apparatus?

7 A. Again --

8 Q. Actually, Dr. Bystrom, I'm going to
9 withdraw that question and ask something else.

10 Does the '991 patent describe any software
11 or hardware that would be embodied in the network
12 interface?

13 MR. PLUTA: Object to form.

14 THE WITNESS: I may have to ask you to be
15 more specific on that. Because if -- for instance,
16 if we are talking about Claim 1, Claim 1 doesn't
17 specifically talk about a network interface brand, a
18 network interface written in a software language,
19 a -- so things like that. But Claim 1 requires a
20 communication apparatus for transmitting and
21 receiving digital information to and from another
22 communication apparatus comprising....

23 And then Element 1.a -- talks about the
24 network interface configured to receive first digital
25 information which is received from a content server

1 which is coupled to the communication apparatus via
2 the network interface, and second digital information
3 from the -- another communication apparatus.

4 So while -- so those don't talk
5 specifically the words hardware or software, this
6 certainly lays out what the network interface, for
7 want of better words, has to do.

8 BY MS. BAILEY:

9 Q. I'm going to turn back to Asmussen. You
10 provided some opinions on Asmussen's teaching of the
11 tuner 603. Do you recall that in your declaration?

12 A. So turning back to my declaration, I see
13 that in my response to Dr. Lippman's declaration, I
14 did discuss tuner 603, at least in Paragraphs 91 and
15 94.

16 Q. Could you please read Asmussen, Column 26,
17 Lines 6 through 8? And feel free to read anything
18 else below or above it that you like.

19 A. I'm sorry, you said Column 26, Line...?

20 Q. Lines 6 through 8. And just read it to
21 yourself. You don't need to read it out loud.

22 A. Okay. I've read that.

23 Q. Okay. Please next read Column 26, Lines 57
24 through 60.

25 A. Okay, I have read that as well.

1 Q. Finally, if you could please read
2 Column 28, Lines 9 through 11.

3 A. Okay. I've done that.

4 Q. Would you agree that each of these sections
5 is referencing, at least in part, the tuner 603?

6 A. Yes, I believe that those portions you had
7 me read each cite tuner -- reference tuner 603, cite
8 to tuner 603.

9 Q. So at Column 26, Line 57, it refers to CATV
10 input signals. What are CATV input signals?

11 A. Taking my time going through the beginning
12 of the Asmussen spec to double-check about whether
13 the -- how the inventors define CATV, and whether
14 they explicitly define CATV. I typically define CATV
15 as a cable access or cable television method. So
16 give me a moment, I'll confirm that.

17 I'm not at the moment finding a specific
18 definition of CATV by the inventors, although it may
19 be in there. So I would be, I believe, happy to
20 think about it as a cable television.

21 Q. Would you agree that the CATV input signals
22 come from the CATV input?

23 A. I'm sorry, were you pointing to a
24 particular box? For instance, Figure 11?

25 Q. Let's look at Fig. 12a. And Fig. 12a, on

1 the far left side is a CATV input with a line with an
2 arrow to the tuner 603. Do you see that?

3 A. I do.

4 Q. So would you understand Fig. 12a to
5 disclose the tuner 603 received information from the
6 CATV input?

7 A. No.

8 Q. Tell me what you would describe or
9 understand Fig. 12a to describe with respect to the
10 CATV input and the tuner?

11 A. I would say that the CATV input is going
12 into the tuner box 603 in Figure 12a.

13 Q. Does the CATV input include CATV input
14 signals?

15 A. I suppose you could describe it as that.
16 Although I probably have to ask about your definition
17 of CATV input signals.

18 Q. Well, it's the same terminology that I
19 asked about earlier at Column 26, Line 57. That's my
20 understanding, or use, I should say, in my question.

21 A. The CATV input signals are received by the
22 set top terminal at 220 using tuner 603?

23 Q. Yes.

24 A. Okay. Then I agree with the inventor's
25 description in Column 26 of the figure.

1 Q. So is the CATV input sending CATV input
2 signals to the tuner 603 in Fig. 12a?

3 A. Again, I think that's a little bit of an
4 incorrect wording.

5 Q. Feel free to correct me, then, please.

6 A. Okay. The -- so this Figure 12a shows an
7 input line of CATV input. And as described in
8 Column 26, the CATV input signals are received by the
9 set top terminal 220 using a tuner 603.

10 Q. And these CATV input signals include text
11 and video programs that are transmitted from the
12 cable television network -- or, I'm sorry,
13 transmitted via the cable television network?

14 A. I think that might be a little bit broad.
15 And I think we'd have to talk about what is the cable
16 television transmission network with respect to the
17 Asmussen patent, and in particular with respect to
18 the original set top box and particular hardware
19 upgrades, what would be included -- what may
20 potentially be included in the CATV signals.

21 Q. Let's go back to Column 26, Lines 6 through
22 8 that I asked you to read earlier, along with
23 Column 28, Lines 9 through 11, that I also asked to
24 you to read to yourself earlier.

25 A. Uh-huh.

1 Q. Are all cable signals intended for
2 reception on a subscriber's TV accessed by the tuner
3 603?

4 A. So I believe you were reading from
5 Column 26, roughly Line 6, to me, and that's with
6 respect to Figure 11, the preferred set top terminal.
7 So in that respect, with respect to Figure 11, all
8 cable signals intended for reception on the
9 subscriber's TV are accessed by the tuner 603 as the
10 vendor, right.

11 Q. Would you understand the cable signals that
12 are transmitted in Fig. 11 to be different than the
13 CATV input signals discussed for Fig. 12a further
14 down in Column 26? Specifically, Lines 57 through
15 60?

16 A. I would have to say that they very well
17 might be because Figure 11 is talking about -- at the
18 risk of reading the spec to you -- I would say a
19 basic for set top terminal. While that's in a
20 section -- I'm just going to call it Section C 1 --
21 no, I'm sorry, C 2 B, while you had pointed me, I
22 think, to the bottom of Column 26, that's in Section
23 C 2 C, which discusses hardware upgrades, and that's
24 under the -- again, without reading too much of the
25 spec to you, that section starts off with, in order

1 to enhance a set top terminal's 220 functionality,
2 the following hardware upgrades may be used. And
3 then it goes on to discuss A, B, C, D, and E. So I
4 think there is a difference when you talk about basic
5 upstream data transmission hardware and hardware
6 upgrades.

7 Q. Are you saying that the tuner 603 is
8 different between the Fig. 11 and Fig. 12a usage?

9 A. I believe you had asked me about the
10 signals themselves.

11 Q. I did.

12 A. And --

13 Q. -- but you answered -- I'm sorry. Go
14 ahead.

15 A. And I was answering the question. Since
16 the Figure 11 and Figure 12a and b -- Figure 12a and
17 Figure 12b are talking about entirely different
18 scenarios with specifics, Figure 12a and 12b are
19 talking about hardware upgrades, that there may be
20 differences in the signals.

21 As we discussed earlier in the day, the
22 hardware upgrades enable advanced features and
23 capabilities.

24 Q. Please look at Asmussen Column 22. And
25 there's a Table A shown there. Could you just read

1 over Table A and refamiliarize yourself with it,
2 please?

3 A. I have.

4 Q. You see the discussion of -- kind of in the
5 second column, beginning with Existing Analog Set Top
6 Converter?

7 A. Yes.

8 Q. Talks about adding a turbo card for menu
9 generation. Do you see that?

10 A. Turbo card is mentioned, and then in
11 Column 22, I believe, the discussion about how the
12 turbo card can be added is provided.

13 Q. So the turbo card is used to provide menu
14 generation capability; is that correct?

15 A. In part, I believe, yes.

16 Q. Is the turbo card used to provide any other
17 capabilities?

18 A. Yes. Going to Column 17, the turbo card is
19 described starting on Line 10. And then Line 25,
20 through about Line 28, it says, Optionally, the turbo
21 card 700 provides functionality to provide video
22 calls using the set top terminal 220. In this case,
23 the turbo card 700 includes camera interface, 718 and
24 microphone interface 719. Referring to -- I believe
25 it is Figure 6.

1 Q. Is use of the turbo card the only way to
2 provide a video call functionality in Asmussen's
3 disclosure?

4 A. I believe that the turbo card is the -- the
5 turbo card admission is the one addition that is
6 called out to provide functionality to perform video
7 calls. So in the sense that Asmussen has called out
8 the turbo card specifically to provide functionality
9 to perform video calls.

10 Q. In the Asmussen system, if a turbo card is
11 not used, can the system be upgraded or augmented to
12 perform video call functionality?

13 A. I don't know necessarily how clear Asmussen
14 is on that. Asmussen specifically talks about the
15 turbo card as providing the functionality to perform
16 video calls.

17 Q. Does Asmussen teach augmenting the set top
18 terminal to include video call functionality?

19 A. So, specifically, as I write in
20 Paragraph 58, Asmussen discloses for set top
21 converter box or terminal for a television program
22 delivery system, end quote, that, quote, provides
23 both a menu generation capability as well as a number
24 of advanced features and functional capabilities.

25 And then I go on to list in -- by a quote

1 from Column 3, the advanced features and
2 capabilities, which do include sending and receiving
3 video calls.

4 So again, I note that Asmussen specifically
5 talks about the turbo card 700 as providing
6 functionality to perform video calls using the set
7 top terminal 220. And that's from Column 17.

8 Q. Let's go back to Column 22 of Asmussen and
9 that Table A we were looking at.

10 A. Yes.

11 Q. So if you look at the different columns and
12 the headers for it, we see Existing Analog Set Top
13 Converter, and then the next column is Set Top
14 Converter With Digital Compression Capability. And
15 it goes on to describe different types or different
16 set top converters with different capabilities, with
17 the last one being an Advanced Set Top Terminal.

18 Do you see that?

19 A. I do.

20 Q. So explain to me in your opinion what's
21 going on in describing this table and those different
22 headers? What do they mean?

23 MR. PLUTA: Object to form.

24 THE WITNESS: For that, I would again have
25 to turn to the spec which discusses Column A. And --

1 excuse me, discusses Table A. And if we look at --
2 below Table A in Column 22, it says, The first column
3 of Table A shows how an existing analog set top
4 converter can be modified to provide menu generation
5 capability through the use of the Turbo Card.

6 Again, jumping down in Column 22, starting
7 about Line 44, The second column of Table A shows a
8 set top converter with digital decompression
9 capability. And, The simple decompression boxes may
10 be modified to provide the enhanced functionality of
11 the present invention.

12 Jumping down further in Column 22 to about
13 Line 66, The third column of Table A shows a set top
14 converter that has built-in digital decompression and
15 menu generation capabilities.

16 Jumping forward in that paragraph, Other
17 advanced features may be provided through hardware
18 modification. And, Such modification may be
19 accomplished through the use of any of the Level A
20 through E hardware upgrades or the expansion card, as
21 explained below.

22 And then finally, toward the bottom of
23 Column 22, with respect to the fourth column of
24 Table A, on Line 64 it reads, The fourth column of
25 Table A shows an advanced set top terminal having

1 decompression, menu generation, and advanced
2 functional capabilities. And so forth.

3 BY MS. BAILEY:

4 Q. Would it be fair to say then that Table A
5 is showing set top converters -- excuse me, set top
6 terminals with different functionalities?

7 A. I don't know if I necessarily would say
8 that. But Table A lists specific examples of
9 existing or different types of set top converters
10 with different capabilities.

11 Q. So the turbo card --

12 A. I'm sorry, go ahead.

13 Q. I apologize. I thought you were done.

14 A. I know. I was considering how to frame the
15 different rows in the table. But the rows in the
16 table simply show how hardware upgrades or expansion
17 cards or things like that can be added to provide
18 certain advanced features or menu generation
19 capability.

20 Q. So let's take the menu generation
21 capability. To obtain that functionality at an
22 analog set top converter, the turbo card is used; is
23 that correct?

24 A. Just to make sure I got the wording -- I
25 heard the wording correctly, reading from Column 22,

1 around Line 32, the first column of Table A shows how
2 an existing analog set top converter can be modified
3 to provide menu generation capability through the use
4 of the turbo card.

5 So that may have been what you read.

6 Q. For the second column of Table A, which
7 described a set top converter with digital
8 decompression capability, is the turbo card used?

9 A. I'm sorry, can you repeat that question? I
10 got lost in the second column. So you're talking
11 about the second set top converter with digital
12 decompression capability in the second column of
13 Table A?

14 Q. Yes. Is a turbo card used for that
15 particular set top converter?

16 A. This is one of those cases where Asmussen
17 is not necessarily clear.

18 Q. For the particular capabilities that are
19 described in Table A, is a turbo card used for the
20 set top converter with digital decompression
21 capability?

22 A. Again, I believe that this is one of the
23 many cases where Asmussen is not very clear about
24 what is being necessarily added. So until -- with
25 respect to the previous column, he specifically calls

1 out the turbo card. With respect to the second
2 column of Table A, he does not specifically mention
3 the turbo card.

4 Q. You say Asmussen is not clear. Do you
5 think a turbo card is used for the second column?

6 A. I think a turbo card may or may not be used
7 for the second column. Asmussen is not clear on that
8 in the paragraph starting Line 44, Column 22.

9 Q. Let's turn to the third column then that
10 says, Set Top Converter With Digital Decompression
11 and Menu Generation Capability.

12 For the menu generation capability, the
13 Table A listed as built-in. Do you think a turbo
14 card is used for the third column -- column's set top
15 converter?

16 A. Specifically for the menu generation
17 capability, Asmussen doesn't mention a turbo card
18 addition specifically for the menu generation
19 capability.

20 Q. Does it mention using a turbo card for
21 anything else, any other capabilities for a set top
22 converter with digital decompression and menu
23 generation capability?

24 A. In Table A, it does not. However, earlier
25 Asmussen does talk about the turbo card with respect

1 to providing video calling capability. The clear
2 wording is that turbo cards provide functionality to
3 perform video calls.

4 Q. So are you trying to opine -- I just want
5 to make sure I understand your opinion here. Is it
6 your opinion that the turbo card can be used for any
7 of the set top converters that are described in
8 Table A?

9 A. My opinion certainly -- I certainly haven't
10 said that. I've certainly answered the question that
11 with respect to the menu generation capability in
12 that third column, it's built in. However, a turbo
13 card -- Asmussen talks about the turbo card providing
14 functionality to perform video calls in the set top
15 terminal 220.

16 Q. So do you think that --

17 A. So he hasn't specifically, in Table A,
18 called out the video calls or pointed to the video
19 calls.

20 Q. So do you think that the turbo card is
21 required to perform video call functionality for any
22 of the set top converters described in Asmussen?

23 A. As I said earlier, the turbo card really is
24 the only component that Asmussen calls out or
25 specifically mentions to providing the functionality

1 to perform video calls using the set top terminal.
2 So Asmussen really is silent on whether -- if you're
3 asking about the hardware upgrades or the A to E
4 hardware upgrades, he doesn't specifically talk about
5 those as performing video calls, to the best of my
6 recollection.

7 Q. Turn to Column 50 of Asmussen, please.

8 MR. PLUTA: I'm sorry, which column?

9 MS. BAILEY: Column 50.

10 THE WITNESS: I'm here.

11 BY MS. BAILEY:

12 Q. Beginning at Line 18, it describes, Fig. 30
13 is a block diagram of video call transmission or
14 reception functions.

15 Do you think that the video call
16 transmission or reception functions described in
17 Fig. 30 are accomplished via the turbo card?

18 A. I think they very well might be. Asmussen
19 doesn't particularly call out the -- specifically
20 call out the turbo card here, but he's talking about
21 video call transmission and reception functions.

22 So -- he's actually pretty silent on this.
23 He's not clear on what he means by the functions of
24 the set top terminal versus the turbo card.

25 Q. Is the tuner 603 in Asmussen coupled to the

1 operations center described in Asmussen?

2 A. I'm not actually sure what you mean by
3 coupled, or -- coupled in what manner?

4 Q. You don't know what I mean by the word
5 "coupled"?

6 A. Actually, no, I don't, because if we take a
7 look at, for instance, Figure 1, which relates an
8 operations center to a set top terminal, and then
9 dive into the set top terminal, I think the word
10 couple might have any number of meanings. So if you
11 could be a little bit more specific.

12 Q. How about communicatively coupled?

13 A. Again, I would have to give you the same
14 answer. If you could be a little bit more specific
15 about what you mean by that.

16 Q. Is the tuner 603 configured to receive data
17 from the operations center?

18 A. I think earlier today we had talked about
19 the tuner 603, and we talked about it with respect to
20 Figure 11, and I believe Figure 12a and 12b. So we
21 had talked about the tuner receiving cable signals,
22 and also specifically CATV input signals.

23 But if we take a look at even Figure 1 and
24 the beginning of the Asmussen spec -- I think we
25 actually have to turn to that to talk about how cable

1 signals and these TV signals are actually created and
2 processed.

3 So you could do this, but it's actually a
4 fairly long discussion, starting with the major
5 system components. I think we earlier had talked a
6 little bit about the operations center packaging
7 television programs and generating the program
8 control information signal. And then the operations
9 center can do a large number of other things, some of
10 which are called out in Column 10, such as inserting
11 directions for filling local available program time,
12 etc., and so forth.

13 We had also talked about the cable headend,
14 the -- and I'm reading from Column 9 -- Column 9,
15 about Line 30. It says, After the operations center
16 has compressed and encoded the program signals and
17 transmitted the signals to the satellite, the cable
18 headend receives and further processes the signals
19 before they are relayed to each set top terminal.

20 So the cable headend is adding a layer of
21 processing to the signals that have been relayed by
22 the satellite

23 Continuing on -- so continuing on in the
24 discussion of the set top terminal, set top terminal
25 220 is the last component in a delivery system chain.

1 And at the moment, I'm reading from Column 11. And
2 throughout this, I've really been picking and
3 choosing a couple highlights of the entire chain
4 illustrated, in part, in Figure 1.

5 The set top terminal 220 receives
6 compressed program and control signals from the cable
7 headend 208, or in some cases directly from the
8 operations center 202.

9 Finally, I think I'd like to point out -- I
10 think we can finally point out that, according to
11 Figure 11, that line 230 cable in from the headend
12 shows the signals going into the tuner 603, and also
13 the data receiver 332.

14 And so I hope -- that may have just started
15 to answer your question about how the signals are
16 generated and processed and delivered. Hopefully
17 without going into too much detail.

18 Q. I just realized we've been going for more
19 than an hour. Why don't we take another short break?

20 A. Sure.

21 (Recess)

22 THE WITNESS: Before we begin, can I go
23 back to the previous question and say that I think I
24 referred to Figure 11, but I actually wanted to refer
25 to Figure 4, the basic hardware components of set top

1 terminal. The set top terminal was the -- I think
2 it's the last component of the delivery system chain.

3 I didn't want to repeat the entire
4 discussion. I extracted bits and pieces of it, the
5 delivery system chain. I simply wanted to say that
6 perhaps Figure 4 is a better description to basic set
7 top terminal than Figure 11, because Figure 11 is in
8 a different portion -- refers to a different portion
9 of the spec.

10 MS. BAILEY: Okay. Thank you, Dr. Bystrom.
11 Thank you for your time today. I have no further
12 questions.

13 MR. PLUTA: I don't have any questions
14 either.

15 THE WITNESS: Thank you.

16 MR. PLUTA: Thanks everyone. Have a good
17 weekend.

18 (Adjourned at 10:29 a.m.)

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1 REPORTER'S CERTIFICATION

2

3 I, CONNIE MCCARTHY, a Certified Court
4 Reporter, hereby certify that the witness in the
5 foregoing deposition was by me duly sworn to tell the
6 truth, the whole truth, and nothing but the truth in
7 the within-entitled cause;

8 That said deposition was taken down in
9 shorthand by me, a disinterested person, at the time
10 and place therein stated, and that the testimony of
11 the said witness was thereafter reduced to
12 typewriting, by computer, under my direction and
13 supervision;

14 I further certify that I am not of counsel
15 or attorney for either or any of the parties to the
16 said deposition, nor in any way interested in the
17 events of this cause, and that I am not related to
18 any of the parties hereto.

19

20 DATED: November 24, 2020

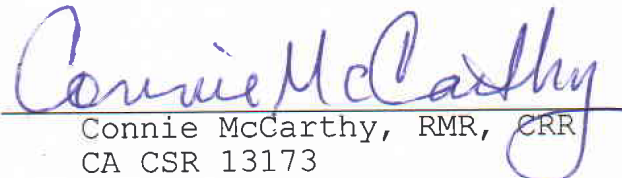
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Connie McCarthy, RMR, CRR
CA CSR 13173

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