

UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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Charter Communications, Inc.

Petitioner

v.

Sprint Communications Company

Patent Owner

Patent No. 6,754,907  
Case No. IPR2019-01138

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**PETITION FOR *INTER PARTES* REVIEW**

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**LIST OF EXHIBITS**

<b>Exhibit</b>	<b>Description</b>
Ex. 1001	U.S. Patent No. 6,754,907 to Schumacher et al. (“the ’4907 patent”)
Ex. 1002	Declaration of Kevin C. Almeroth (“Almeroth”)
Ex. 1003	Curriculum Vitae of Kevin C. Almeroth, Ph.D.
Ex. 1004	Prosecution History of U.S. Patent No. 6,754,907
Ex. 1005	RESERVED – OMITTED
Ex. 1006	RESERVED – OMITTED
Ex. 1007	WO 92/22983 to Browne et al. (“ <i>Browne</i> ”)
Ex. 1008	U.S. Patent No. 7,913,278 to Ellis et al. (“ <i>Ellis</i> ”)
Ex. 1009	U.S. Patent No. 6,182,094 to Humpleman et al. (“ <i>Humpleman</i> ”)
Ex. 1010	Claim Construction Order from <i>Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co., LP</i> , Case No. 2:12-cv-859-JD, Dkt. 162 (Aug. 15, 2014, E.D. Pa) (“Comcast Order”)
Ex. 1011	Sprint’s Opening Claim Construction Br. from <i>Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co., LP</i> , Case No. 2:12-cv-859-JD, Dkt. 162 (Aug. 15, 2014, E.D. Pa) (“Sprint Claim Construction Br.”)

## **I. PRELIMINARY STATEMENT**

Petitioner requests IPR and cancellation of claims 1-25 of the '4907 patent (Ex. 1001).<sup>1</sup> These claims are directed to a video-on-demand (“VOD”) system which allows the viewer to use a computer—instead of a set-top box—to remotely control the display of video content. According to the '4907 patent, a “video-on-demand system allows a viewer to immediately view selected video content . . . from a video content library.” ('4907 patent, 1:12-15.) The '4907 patent explains that, when it was filed in 2000, VOD systems already allowed a viewer to use a television set-top box to remotely control the display of video content. ('4907 patent, 1:24-23.) However, the '4907 patent emphasized that using a set-top box for remote control was undesirable because it was a “special component” that could not be used for other purposes. ('4907 patent, 1:31-32.) The '4907 patent attempts to overcome this alleged shortcoming by simply replacing the set-top box with a computer that allows the viewer to remotely control video content displayed on the television or displayed on the computer itself. ('4907 patent, 1:35-40.)

But the concept of using a computer to replace a set-top box for remotely controlling video content displayed on a television or on the computer itself was well-known before the '4907 patent. For example, *Ellis*, discloses this same video-

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<sup>1</sup> In a separate, concurrently filed *Inter Partes* Review Petitions, IPR2019-1136 and IPR2019-1140, Petitioner request cancellation of the same claims from the '4907 patent.

on-demand system. *Ellis* identified the *same problem* with set-top boxes as the '4907 patent. (*Ellis*, 1:37-45.) And *Ellis* sought to solve this problem with the *same solution* as the '4907 patent by disclosing the use of a remote program access device to remotely select video content to view and direct the system to send and play the selected video content either on the remote program access device or television equipment. (*Ellis*, 2:47-60, 5:9-12, 9:42-49, Fig. 2d.)

The concept of using a computer to remotely control a video system was known as early as 1991 in *Browne* and continued to be a known concept of controlling a VOD system, as shown in *Humpleman*, before the invention of the '4907 patent. Accordingly, the '4907 patent's claimed technology was well-known prior to the invention of the '4907 patent and expressly anticipated and rendered obvious by the art submitted in this Petition.

## **II. THE '4907 PATENT**

### **A. Overview of the '4907 Patent**

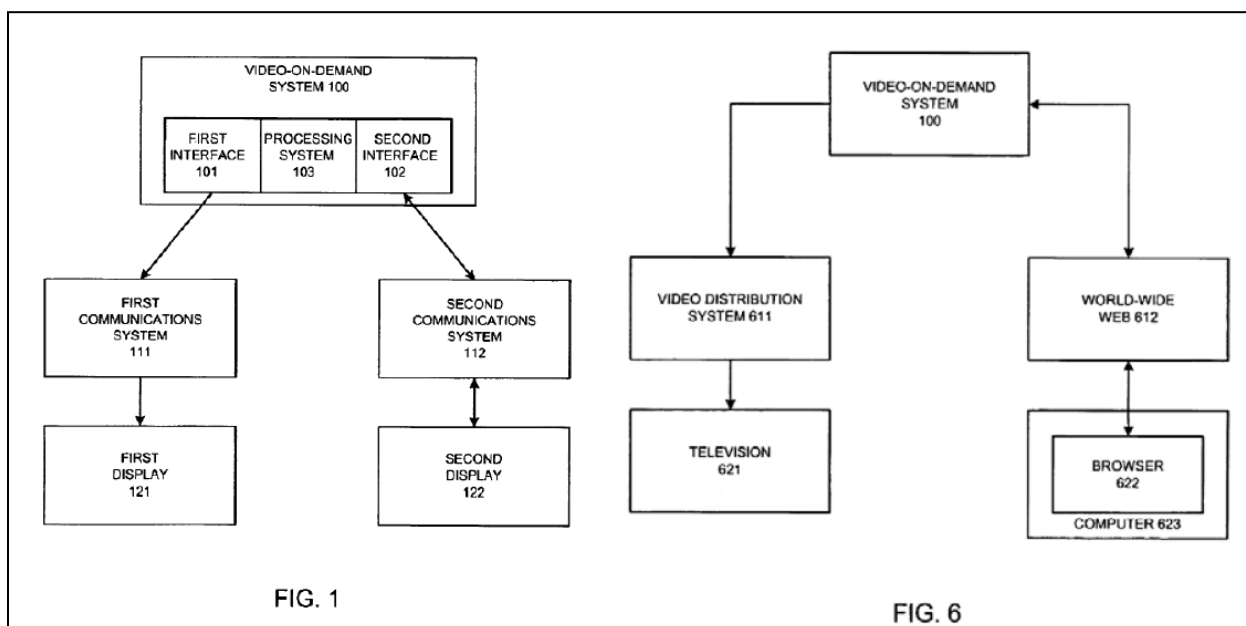
The '4907 patent's three independent claims (1, 10, and 19) are generally directed to methods and systems for using a computer to remotely control a VOD system, and offering the user the choice of displaying the selected video content to either a television or to the computer itself. ('4907 patent, 6:28-47, 7:6-21, 8:3-21.) The patent, like the prior art, recognized limitations in using set-top boxes for remotely controlling a VOD system, and attempted to improve VOD systems by

replacing the set-top box with a “portable computer [that] has many other uses and eliminates the cost of a special television set-top box.” (’4907 patent, 1:24-43.)

The ’4907 patent claims require interactions between a “first communication system,” which the patent defines as including “optical fiber systems, wire cable systems, and wireless link systems,” and a “second communication system,” which the patent defines as the “Internet,” and “in particular, the World-Wide Web.” (’4907 patent, 2:28-34.) Each communication system is coupled to its own display, e.g., the first communication system is coupled to a television display and the second communications system is coupled to a portable computer with a browser and display. (’4907 patent, 2:32-34.)

The ’4907 patent claims are directed to a method for controlling the two communications systems using two separate communication interfaces. (’4907 patent, 2:54-64.) The claimed VOD system transmits a “user control signal” to the user over a second communications system. In response, the user transmits “video control signals” to the VOD system over a communication interface that is coupled to a particular communications system. In response to the “video control signal,” the VOD system transmits “video content signals” over the user’s selected communications system, either the first or the second communication system. (’4907 patent, 2:15-67.)

Figure 1 of the '4907 patent, reproduced below, demonstrates the interaction between the various claimed systems, interfaces, and displays. Figure 6, also reproduced below, depicts a preferred embodiment of the claimed invention.



## B. The Challenged Claims

This petition challenges claims 1-25 of the '4907 patent, of which claims 1, 10, and 19 are independent. For ease of reference, the Challenged Claims are reproduced below:

Claim 1	
No.	Claim Limitation
1[P]	A video-on-demand system comprising:
1[A]	a first communication interface configured to transfer video content signals to a first communication system;

1[B]	a second communication interface configured to transfer the video content signals to a second communication system, transfer a control screen signal to the second communication system, and receive a video control signal from the second communication system; and
1[C]	a processing system configured to transfer the control screen signal to the second communication interface, receive the video control signal from the second communication interface, implement a viewer-control selection indicated by the video control signal, and transfer the video content signals to the first communication interface if the first communication interface is indicated by the video control signal received from the second communication interface or transfer the video content signals to the second communication interface if the second communication interface is indicated by the video control signal.
<b>Claim 2</b>	
The video-on-demand system of claim 1 wherein the control screen signal includes a video display control menu comprising play and stop.	
<b>Claim 3</b>	
The video-on-demand system of claim 2 wherein the viewer control selection comprises a video display control menu selection.	
<b>Claim 4</b>	
The video-on-demand system of claim 3 wherein the video display control menu further comprises pause, rewind, and fast forward.	
<b>Claim 5</b>	
The video-on-demand system of claim 1 wherein the control screen includes a video content selection menu.	
<b>Claim 6</b>	
The video-on-demand system of claim 5 wherein second communications interface is configured to receive a video content menu selection signal from the second communications system, and the processing system is configured to process the video content selection signal to transfer selected video content in the video content signals.	
<b>Claim 7</b>	



The video-on-demand system of claim 1 wherein the second communication interface is configured to interface with an internet.	
<b>Claim 8</b>	
The video-on-demand system of claim 1 wherein the second communication interface is configured to interface with a world-wide web.	
<b>Claim 9</b>	
The video-on-demand system of claim 1 wherein the control screen comprises a web page.	
<b>Claim 10</b>	
10[P]	A method of operating a video-on-demand system, the method comprising:
10[A]	transferring a control screen signal to a second communication system;
10[B]	receiving a video control signal from the second communication system;
10[C]	implementing a viewer control selection indicated by the video control signal; and
10[D]	transferring video content signals to a first communication interface if the first communication interface is indicated by the video control signal received from a second communication interface or transferring the video content signals to the second communication interface if the second communication interface is indicated by the video control signal.
<b>Claim 11</b>	
The method of claim 10 wherein the control screen signal includes a video display control menu comprising play and stop.	
<b>Claim 12</b>	
The method of claim 11 wherein implementing the viewer control selection comprises implementing a video display control menu selection.	
<b>Claim 13</b>	

The method of claim 12 wherein the video display control menu further comprises pause, rewind, and fast forward.	
<b>Claim 14</b>	
The method of claim 10 wherein the control screen includes a video content selection menu.	
<b>Claim 15</b>	
The method of claim 14 further comprising receiving a video content menu selection signal from the second communications system and processing the video content selection signal to transfer selected video content in the video content signals.	
<b>Claim 16</b>	
The method of claim 10 wherein transferring the control screen signal comprises interfacing with an internet.	
<b>Claim 17</b>	
The method of claim 10 wherein transferring the control screen signal comprises interfacing with a world-wide web.	
<b>Claim 18</b>	
The method of claim 10 wherein the control screen comprises a web page.	
<b>Claim 19</b>	
19[P]	A product comprising a processor-readable storage medium storing processor-executable instructions for performing a method for operating a video-on-demand system, the method comprising:
19[A]	transferring a control screen signal to a second communication system;
19[B]	receiving a video control signal from the second communication system;
19[C]	implementing a viewer control selection indicated by the video control signal; and
19[D]	transferring video content signals to a first communication interface if the first communication interface is indicated by the video control

	signal received from the second communication interface or transferring the video content signals to the second communication interface if the second communication interface is indicated by the video control signal.
<b>Claim 20</b>	
The product of claim 19 wherein the control screen signal includes a video display control menu comprising play and stop.	
<b>Claim 21</b>	
The product of claim 20 wherein implementing the viewer control selection comprises implementing a video display control-menu selection.	
<b>Claim 22</b>	
The product of claim 21 wherein the video display control menu further comprises pause, rewind, and fast forward.	
<b>Claim 23</b>	
The product of claim 19 wherein the control screen includes a video content selection menu.	
<b>Claim 24</b>	
The product of claim 23 further comprising receiving a video content menu selection signal from the second communications system and processing the video content selection signal to transfer selected video content in the video content signals.	
<b>Claim 25</b>	
The product of claim 19 wherein the control screen comprises a web page.	

### III. STATEMENT OF PRECISE RELIEF REQUESTED

Claims 1-25 of the '4907 patent are unpatentable and should be canceled in view of the following grounds:

#	Ground for Challenge
1	Claims 1-25 are anticipated by <i>Ellis</i> (Exhibit 1008)
2	Claims 1-25 are obvious over <i>Ellis</i> (Exhibit 1008) and <i>Browne</i> (Exhibit 1007)
3	Claims 1-25 are obvious over <i>Ellis</i> (Exhibit 1008) and <i>Humpleman</i> (Exhibit 1009)

#### IV. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art (“POSITA”) regarding the ’4907 patent would have held a bachelor’s degree in electrical engineering, computer science, or a related field with at least five years of experience or research in interactive systems applicable to digital television, including VOD for cable and Internet delivery. (Almeroth, ¶¶44-46.)

#### V. CLAIM CONSTRUCTION

Sprint asserted the ’4907 patent in another district court litigation against different parties. *Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co., LP*, Case No. 2:12-cv-859-JD (E.D. Pa.). The parties in that case proposed constructions and the district court construed various terms in the ’4907 patent. (*Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co., LP*, Case No. 2:12-cv-859-JD, Dkt. 162 (Aug. 15, 2014, E.D. Pa.) (“Comcast Order”).) While the *Comcast* court disagreed with Sprint’s proposed constructions (Comcast Order at 28-38), the Board need not

resolve those disputes here because the claims read on the prior art under either Sprint's proposed construction or the *Comcast* court's construction.<sup>2</sup>

**A. “A video-on-demand system” (claim 1) / “operating a video-on-demand system” (claims 10 and 19)**

Sprint's proposed construction and the *Comcast* court's construction for these terms are set forth below. (Comcast Order at 28-33.)

Sprint	Comcast Claim Construction Order
Plain and ordinary meaning, or  Should the Court deem a construction of the ordinary meaning necessary: <i>operating a system that provides video-on-demand</i>	<i>operating a video-on-demand system without the use of a set-top box for remote control of the video-on-demand system</i>

For the reasons discussed in Section VI, the prior art renders the challenged claims invalid under both the *Comcast* court's construction and Sprint's proposed construction in the prior case. However, Petitioner notes that the *Comcast* court's construction, which Petitioner supports, is confirmed by the '4907 patent. The difference between these two constructions is whether the claimed methods for operating a VOD system must exclude the use of a set-top box for remote control of

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<sup>2</sup> Sprint asserted claims 10, 12, and 16 of the '4907 patent against Comcast in *Comcast v. Sprint*. Accordingly, the *Comcast* court only construed terms contained in those claims. However, the *Comcast* court's claim constructions for the terms in these claims apply equally to the same or similar terms found in the remaining claims in the patent, as like terms should be construed consistently across all claims in a patent. See *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003); see also *In re Varma*, 816 F.3d 1352, 1363-64 (Fed. Cir. 2016).

the VOD system. The *Comcast* court correctly found that the '4907 patent disclaims the use of a set-top box for remote control by disparaging the prior art's reliance on set-top boxes and by not including a set-top box in any one of the patent's embodiments. (*Comcast* Order at 28; *see also* '4907 patent, 1:24-46.) The difference between these constructions, however, does not impact the outcome of this proceeding, because the prior art, to the extent a set-top box is disclosed, does not use a set-top box for remote control of the VOD system.

**B. “video control signal” (claims 1, 10, 19)**

Sprint's proposed construction and the *Comcast* court's construction for this term are set forth below. (*Comcast* Order at 34-35.)

Sprint	<i>Comcast</i> Claim Construction Order
Plain and ordinary meaning, or  Should the Court deem a construction of the ordinary meaning necessary: <i>a signal relating to the control of a video</i>	<i>a video control signal generated and processed without the involvement of a set-top box for remote control of the video-on-demand system</i>

Petitioner notes that the *Comcast* court's construction, which Petitioner supports, is confirmed by the '4907 patent. The difference between these constructions is related to the dispute presented in the prior term—whether a video control signal can be generated without the use of a set-top box for remote control

of the VOD system. For the same reasons set forth above, the *Comcast* court held that disclaimer also applies to this term.<sup>3</sup> (Comcast Order at 34-35.)

**C. “transfer [the] video content signals” (claim 1) / “transferring [the video content signals]” (claims 10, 19)**

Sprint’s proposed construction and the *Comcast* court’s construction for these terms are set forth below. (Comcast Order at 36-38.)

<b>Sprint</b>	<b><i>Comcast Claim Construction Order</i></b>
Plain and ordinary meaning, or  Should the Court deem a construction of the ordinary meaning necessary: <i>sending [video content signals/the video content signals]</i>	<i>in response to the video control signal, transferring [video content signals/the video content signals]</i>

For the reasons discussed in Section VI, the prior art renders the challenged claims invalid under both the *Comcast* court’s construction and Sprint’s proposed construction in the prior case. However, Petitioner notes that the *Comcast* court’s construction, which Petitioner supports, is confirmed by the ’4907 patent. As the *Comcast* court noted, there is no disagreement in the construction about what it means to transfer a video content signal; rather, the constructions differ on the issue of whether the video signal must be sent in response to a video control signal.

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<sup>3</sup> The *Comcast* court found that “[t]he specification does not disparage the use of a set-top box for other purposes, such as for decod[ing a video signal] and present[ing] it to a television” (Comcast Order at 35 (internal quotations omitted)), and therefore, the Comcast Order permits the use of a set-top box for purposes other than for remote control.

(Comcast Order at 37.) The *Comcast* court correctly found that as described in the '4907 specification, the video content signals are transferred in response to the video control signal received from the computer, and therefore, construed this term as such. (Comcast Order at 36-37; '4907 Patent, Abstract, 2:54–67, 3:11–20, 3:30–4:60, 5:1–14, 5:36–6:8.)

**D. Agreed Constructions in Comcast Claim Construction Order**

The parties in *Comcast v. Sprint* agreed that: (1) “control screen signal” should be construed as “a signal that defines a control screen” and (2) “implementing a viewer control selection” should be construed as “in response to the video control signal, implementing a viewer control selection.” (Comcast Order at 42.) For the purposes of this Petition, Petitioner applies these constructions in Section VI.

**VI. CLAIMS 1-25 ARE UNPATENTABLE OVER THE PRIOR ART**

**A. Overview of the Prior Art**

**1. *Ellis***

*Ellis* “relates to interactive television program guide video systems, and more particularly, to interactive television program guide systems that provide remote access to program guide functionality.” (*Ellis*, 1:19-22.) *Ellis* explains that “[i]nteractive television program guides are typically implemented on set-top boxes located in the homes of users.” (*Ellis*, 1:37-38.) *Ellis* explains that the problem with set-top boxes, is that set-top boxes are not portable, and therefore, cannot perform functions without the user being physically located in the same room as the set-top



box. (*Ellis*, 1:40-45.) The invention in *Ellis* seeks to solve this problem by allowing a user to remotely control the system using a remote program access device. (*Ellis*, 2:23-28.) This remote access program guide may, for example, provide a user with an opportunity to remotely play a stored program or a currently broadcasted program on the remote program access device or on television equipment. (*Ellis*, 2:47-60, 5:9-12, Fig. 2d.)

## **2. *Browne***

*Browne* teaches a VOD system “capable of receiving a plurality of simultaneous input signals” that are recorded, which a user can request to view on one or more output monitors. (*Browne*, 1, 13.) In order to view recorded input signals, the recorder’s controller generates a virtual control screen, which is placed on any screen for a user to control playback. (*Browne*, 13.) *Browne* teaches that when the control screen appears, the user can select the output to which the signals are sent and the type of signals on which to send. (*Browne*, 24 27, Fig. 7, Fig. 2.)

## **3. *Humpleman***

*Humpleman* teaches a method and system for generating and storing on a first home device a program guide for a home network: “[a] method and system for generating a program guide for a home network having at least one multi-media device” where “multimedia material associated with a first home device is identified,” and based on this multimedia material, an “HTML page is generated”

and “stored in an accessible area on the first home device.” (*Humpleman*, Abstract.)

*Humpleman* also teaches that a second home device, which is browser based, can be connected to the home network and can display the program guide for a user. (*Humpleman*, Abstract.) *Humpleman* discloses that once the program guide is displayed on the second home device, the user can control another home device by selecting icons that have hyperlinks to control the program displayed. (*Humpleman*, 7:18-23.) From the second home device, the user can control the home devices that are connected to the home network, such as playing a movie. (*Humpleman*, 14:5:14, 14:22-33.) The user can choose which home device, including the home device displaying the program guide, on which to view the selected video. (*Humpleman*, 15:25-47, 18:45-51, Figs. 10, 11, 12A, 12B.)

**B. Ground 1: *Ellis* Anticipates Claims 1-25**

**1. Independent Claim 1**

**a. Preamble: “A video-on-demand system”**

To the extent the preamble limits the claims, *Ellis* teaches the preamble. (Almeroth, ¶¶62-67.) The ’4907 patent discloses that a “video-on-demand system offers an individual viewer various selections from a video content library for viewing on-demand. Some examples of video content include movies, television shows, documentaries, news, and sports.” (’4907 patent, 1:12-17.) *Ellis* discloses a “*video-on-demand system*” because *Ellis* discloses “an interactive television program guide system with remote access” that accesses and transmits video data

from multiple sources, such as “television program listings data (e.g., program times, channels, titles, and descriptions) and other program guide data for additional services other than television program listings (e.g., pay-per-view information, weather information, associated Internet web links, computer software, etc.),” including allowing a user “to remotely order a pay-per-view program or package.” (*Ellis*, 2:47-60, 4:40-53, 25:4-18.) *Ellis* also discloses “providing a user with access to remotely-played video or audio.” (*Ellis*, 25:36-37.) In particular, *Ellis* discloses that the user, through the remote control, can control the video display to play a program in real-time or a previously stored program. (*Ellis*, 25:67-26:2.)

*Ellis* discloses “***a video-on-demand system***” under the *Comcast* court’s construction. *Ellis* discloses operating the video-on-demand system without the use of a set-top box for remote control of the video-on-demand system. (*Ellis*, 7:53-65, 8:10-20, 9:4-6.) The remote program guide access device of the video-on-demand system in *Ellis* does not use a set-top box, as the ’4907 patent discloses that a “set-top box is a special component that is closely coupled to the television” and “does not have other uses.” (’4907 patent, 1:30-32.) The remote controller in *Ellis* is not “closely coupled to the television” as it is explicitly implemented and performed without and separate from any set-top box. (*Ellis*, 7:53-65, 8:10-20, 9:4-6.) Additionally, the remote program guide access device in *Ellis* does not have a single use, but instead displays video-on-demand on the remote program guide access

device and/or on the television, as well as controls other devices (“personal computer” or “multiple installations of user television equipment 22 within the home connected via an in-home network”). (*Ellis*, 8:51-9:7.)

While *Ellis* discloses using a set-top box for control in some embodiments, it explicitly discloses that these embodiments are “alternative” embodiments and explicitly teaches *not* using the set-top box for control in the other embodiments. (*Ellis*, 7:53-65, 8:10-20, 9:4-6.) For example, *Ellis* discloses “[t]he functions of control circuitry 42 *may* be provided using the set-top box arrangement of FIGS. 2 a and 2 b. *Alternatively, these functions may be integrated into an advanced television receiver, personal computer television (PC/TV), or any other suitable arrangement.*” (*Ellis*, 9:2-6.) *Ellis* discloses embodiments without a set-top box in Figures 2c and 2d. (*Ellis*, 5:64-6:36, Figs. 2c-2d.) Thus, it would be clear to a POSITA that *Ellis* discloses not using a set-top box for remote control of the VOD system. (Almeroth, ¶65.)

*Ellis* also discloses “***a video-on-demand system***” under Sprint’s construction. As explained above, *Ellis* discloses operating a system that provides video-on-demand. (*Ellis*, 2:47-60, 4:40-53, 25:4-18.)

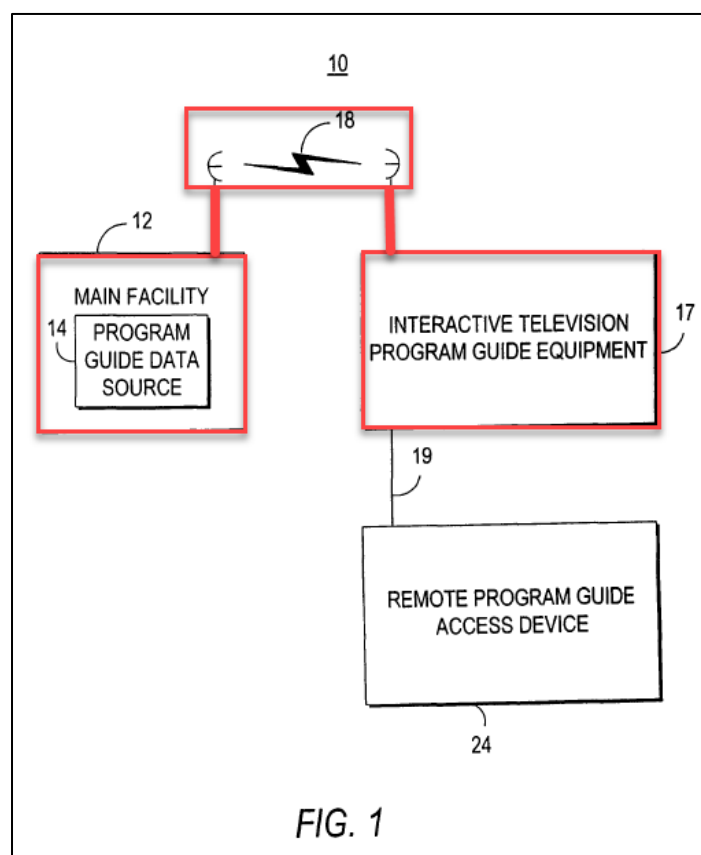
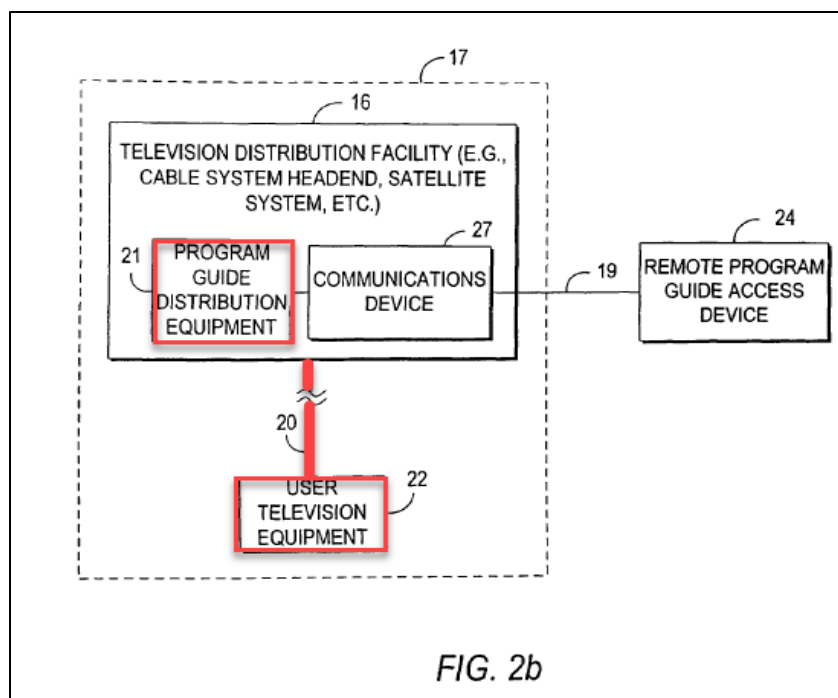
**b. Element [A]: “a first communication interface configured to transfer video content signals to a first communication system”**

*Ellis* discloses “*a first communication interface configured to transfer video content signals to a first communication system.*” (Almeroth, ¶¶68-71.) As described in more detail below, *Ellis*’s program guide distribution equipment 21 is the “first communication interface” and it expressly describes transferring video content signals over communications path 20 (the “first communication system”).

*Ellis* discloses “*transfer[ring] video content signals,*” as required under Sprint’s construction, and transferring those video content signals in response to the video control signal without the involvement of a set-top box for remote control, as required under the *Comcast* court’s construction. For example, *Ellis* discloses that video television signals (the claimed “video content signals”) are sent to a display device 45 in response to user instructed video control signals: “The user *controls the operation of user television equipment 22 with user interface 46.* User interface 46 may be a pointing device, wireless remote control, keyboard, touch-pad, voice recognition system, or any other suitable user input device. To watch television, *the user instructs control circuitry 42 to display a desired television channel on display device 45.* Display device 45 may be a television, monitor, or other suitable display device.” (*Ellis*, 9:8-15 (emphasis added).)

*Ellis* discloses “**a first communication interface configured to transfer video content signals to a first communication system.**” *Ellis* discloses that television distribution facility 16, which includes program guide distribution equipment 21 (the “first communication interface”), is responsible for transferring video content signals, such as television programming, over communications path 20 (the “first communication system”): “Each user has *user television equipment 22 for displaying the television program listings information and other program guide data using a local interactive television program guide.* There are typically multiple pieces of user television equipment 22 and multiple associated communications paths 20, although only one piece of user television equipment 22 and communications path 20 are shown in FIGS. 2a-2d to avoid overcomplicating the drawing. *Television distribution facility 16 may distribute television programming to user television equipment 22 via communications path 20.* If desired, *television programming may be provided over separate communications paths* (not shown).” (*Ellis*, 6:61-7:5 (emphasis added).)

As shown in annotated Figure 2B below, *Ellis* discloses that the program guide distribution equipment 21 is the “first communication interface,” as it receives video content signals from the source main facility 12, as shown in Figure 1, and transfers those video content signals to the user television equipment 22 via the communications path 20, the “first communication system”:



- c. **Element [B]:** “a second communication interface configured to transfer the video content signals to a

**second communication system, transfer a control screen signal to the second communication system, and receive a video control signal from the second communication system”**

*Ellis* discloses “*a second communication interface configured to transfer the video content signals to a second communication system.*” (Almeroth, ¶¶72-78.) *Ellis* discloses that the television distribution facility 16, which includes the program guide distribution equipment 21 and communications device 27 (collectively the “second communication interface”), transfers remotely stored video and audio content signals (the “video content signals”) to the remote program guide access device 24 over remote access link 19 (the “second communication system”) in response to a user selection to playback or tune to a specified content: “remote access program guide may also provide the user with an opportunity to remotely access video and audio (either together or separately) that is being distributed to the local interactive television program guide or which has been stored by the local interactive television program guide on user television equipment 22 or at a remote server . . . The remote access program guide may provide the user with the opportunity to select a directory entry or may, for example, provide the user with an opportunity to select a program listing of a television program that is being broadcast. *In response to either selection, the remote access program guide may issue an appropriate access communication to the interactive television program guide to play back or tune to the selection and transmit it back to remote program*



*guide access device 24 over remote access link 19. Remote program guide access device 24 may play the video or audio for the user.” (Ellis, 19:6-30 (emphasis added).)*

*Ellis discloses that the selected video or audio control signals are transferred from the second communication interface to the remote program guide access device over the remote access link 19 (the claimed “second communication system”): “[t]he remote access program guide may query the local interactive television program guide implemented on interactive television program guide equipment 17 for directory information using one or more access communications that are sent over remote access link 19 (step 2210). The directory information may be contained, for example, in a media library directory for a media library that is stored on user television equipment 22, or by television distribution facility 16. The directory information may be provided back to the remote access program guide by exchanging one or more remote access communications between interactive television program guide equipment 17 and remote program guide access device 24 over remote access link 19, as is indicated by substep 2220.” (Ellis, 25:46-59 (emphasis added); see also id. at 2:47-56.) Ellis discloses “**transfer[ring] video content signals,**” as required under Sprint’s construction, as explained above, and transferring those video content signals in response to the video control signal without the involvement of a set-top box for remote control, as required under the*

*Comcast* court’s construction. *Ellis* discloses that video television signals (the “video content signals”) are sent to the remote program guide access device in response to user instructed video control signals: “*providing a user with access to remotely-played video or audio. At step 2200, the remote access program guide may obtain video or audio information from the interactive television program guide implemented on interactive television program guide equipment 17 via remote access link 19. This may occur, for example, in response to the user selecting a video or audio listing displayed by remote program guide access device 24.*” (*Ellis*, 25:36-43 (emphasis added); *see also id.* at Fig. 2d.)

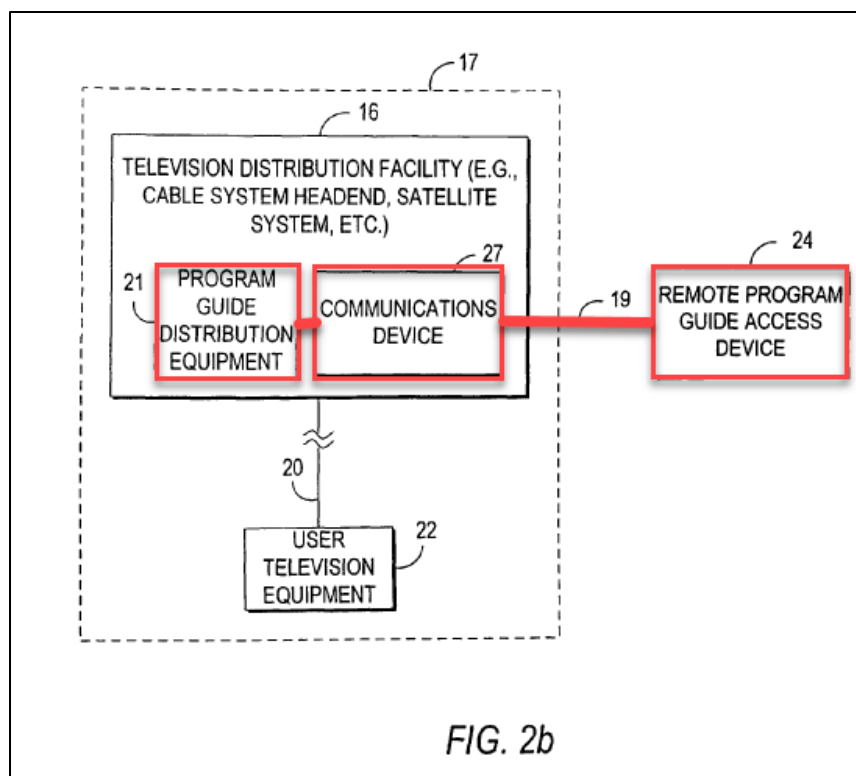
*Ellis* discloses “**a second communication interface configured to . . . transfer a control screen signal to the second communication system.**” *Ellis* discloses “a control screen signal,” because *Ellis* discloses program guide information that is displayed on a display screen for a user—this program guide information is the “control screen signal.” *Ellis* discloses that the “remote program guide access device may, for example, access stored program guide information or obtain program guide information from interactive television program guide equipment via remote access link . . . and generate an appropriate display screen for display using user interface.” (*Ellis*, 14:3-12.) *Ellis* additionally teaches “the *indicated program guide function may be remotely provided to the user visually* (at substep 1280), for example, by

*using a monitor, LCD, or other display device.” (Ellis, 20:67-21:3 (emphases added), Figs. 12-24.)*

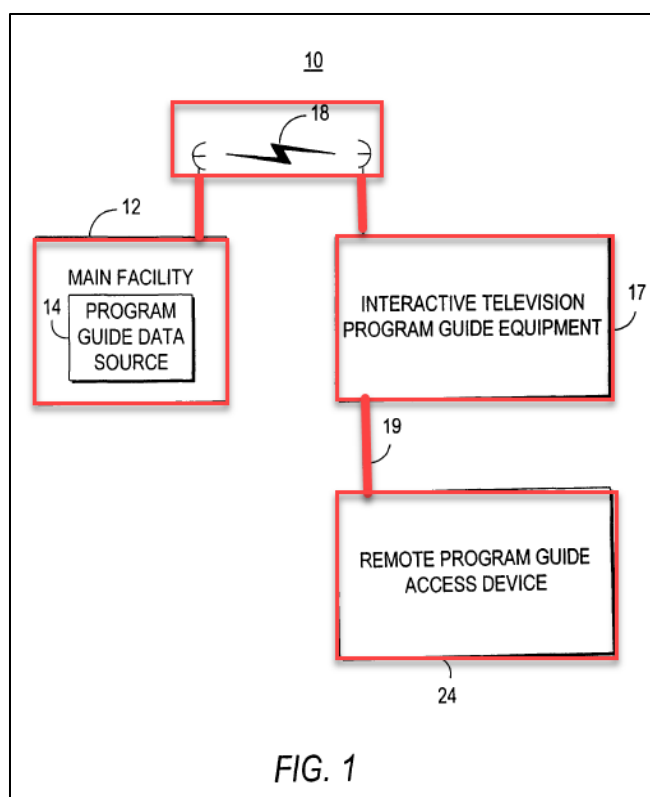
This program guide information (the “control screen signal”) is transferred from the television distribution facility 16, which includes program guide distribution equipment 21 and communications device 27 (collectively the “second communication interface”), to the remote program guide access device via the remote link 19 (the “second communication system”): “[w]hen a user indicates a desire to access program guide features by issuing an appropriate command to remote program guide access device 24, remote program guide access device 24 may, for example, access stored program guide information or obtain program guide information from interactive television program guide equipment 17 via remote access link 19 using any of the approaches already described, and generate an appropriate display screen for display using user interface 52.” (*Ellis*, 14:3-12; *see also id.* at 25:46-59.)

*Ellis* discloses “***a second communication interface configured to . . . receive a video control signal from the second communication system.***” *Ellis* discloses that a user generated control signal (the “video control signal”), indicating the user’s selected video or audio signals from the displayed program guide information, is sent over the remote access link 19 (the “second communication system”) and received at the television distribution facility 16, which includes the program guide

distribution equipment 21 and communications device 27 (collectively the “second communication interface”). (*Ellis*, 25:63-26:9, Fig. 2b.) For example, *Ellis* discloses that “the remote access program guide may provide the user with the opportunity to select a video or audio for remote playing. The user may select a video or audio by, for example, selecting a listing that is indicated to the user by user interface 52. The user may be provided with an opportunity to play a program in real-time via the local and remote guides, or to play a stored program. *In response, the remote access program guide may obtain the selected video or audio from the local interactive television program guide using access communications that are sent over remote access link 19. The access communications may contain the video or audio in a suitable analog or digital format.* At step 2250, remote program guide access device 24 remotely plays the video or audio for the user using user interface 52.” (*Ellis*, 25:63-26:9 (emphasis added).) This disclosure is also visually depicted in Figure 2b (annotated below), which demonstrates that the video control signal is generated and processed without the involvement of a set-top box for remote control of the video-on-demand system:



As shown above, *Ellis* discloses the “second communication interface” as the communications device 27 and program guide distribution equipment 21 in the interactive television program guide equipment 17, and the “second communication system” as the remote link 19. Remote program guide access device 24 receives video and audio signals from the image sources interactive television program guide equipment 17 and main facility 12 with program guide data source 14 through the red annotated path in Figure 2b above and Figure 1 below. (*Ellis*, 25:36-26:9.)



- d. **Element [C]: “a processing system configured to transfer the control screen signal to the second communication interface, receive the video control signal from the second communication interface, implement a viewer-control selection indicated by the video control signal, and transfer the video content signals to the first communication interface if the first communication interface is indicated by the video control signal received from the second communication interface or transfer the video content signals to the second communication interface if the second communication interface is indicated by the video control signal”**

*Ellis* discloses “a processing system configured to transfer the control screen signal to the second communication interface.” (Almeroth, ¶¶79-83.) For example, Figure 1 in *Ellis* demonstrates that the television distribution facility 16

(the “processing system”) receives the stored program guide information (the “control screen signal”) from the main facility 12 and program guide data source 14. (Ellis, Fig. 1.) Television distribution facility 16 transfers the program guide information to the program guide distribution equipment 21 and communication device 27 (collectively the “second communication interface”), which ultimately transfers program guide information over remote link 19 to the remote program guide access device 24. (Ellis, Fig. 2b.) This is further disclosed in *Ellis* as follows: “An illustrative system 10 in accordance with the present invention is shown in FIG. 1. Main facility 12 provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communications link 18.” (*Ellis* at 4:29-33; *see also id.* at 7:6-10.)

*Ellis* discloses “**a processing system configured to . . . receive the video control signal from the second communication interface.**” As explained above, *Ellis* discloses that the video control signals (the user control selections for video and audio signals) are transferred by the communications device 27 and program guide distribution equipment 21 (collectively the “second communication interface”) and received by the television distribution facility 16 and interactive television program guide 17. (*Ellis*, 6:26-36, 25:63-26:9, Figs. 1, 2b.)

*Ellis* discloses “**a processing system configured to . . . implement a viewer-control selection indicated by the video control signal.**” For example, *Ellis*

discloses that a user generated control signal, indicating the user's selection of video or audio from the displayed program guide information (the "viewer-control selection"), is sent over the remote access link 19 (the claimed "second communication system") and received at the television distribution facility 16 (the claimed "processing system"). (*Ellis*, 25:63-26:9, 6:26-33, Fig. 2b.) In response to receiving the user generated control signal, the television distribution facility 16, which includes the program guide server 25, implements the viewer control selection indicated in the user generated control signal. (*Id.*)

*Ellis* discloses "***a processing system configured to . . . transfer the video content signals to the first communication interface if the first communication interface is indicated by the video control signal received from the second communication interface or transfer the video content signals to the second communication interface if the second communication interface is indicated by the video control signal.***" *Ellis* discloses that a user can select video or audio for remote playing, by selecting a listing that is indicated to the user on the displayed program guide information. (*Ellis*, 25:63-26:9.) In response to this user selection (the "viewer-control selection" indicated by the "video control signal"), the television distribution facility 16 (the "processing system") obtains the selected video or audio from the local interactive television program guide and transfers the selected video or audio to the user selected display. (*Id.*) *Ellis* discloses that in



response to this viewer-control selection, the television distribution facility 16 may transmit selected video or audio using program guide distribution equipment 21 and communications device 27 (collectively the “second communication interface”) to the remote program guide access device for playback. (*Id.*, *see also id.* at 19:6-30, Fig. 2b.) *Ellis* also discloses that in response to this viewer-control selection, the television distribution facility 16 may transmit selected video or audio using program guide distribution equipment 21 (the claimed “first communication interface”) to television equipment 22 for playback. (*Ellis*, 6:61-7:5.) This is further disclosed in *Ellis*: “As shown in FIGS. 2a-2d interactive television program guide equipment 17 may include program guide distribution equipment 21 located at *television distribution facility 16* and user television equipment 22. *Television distribution facility 16 may be any suitable distribution facility (e.g., a cable system headend, a broadcast distribution facility, a satellite television distribution facility, or any other suitable type of television distribution facility).* *Television distribution facility 16 may distribute program guide data that it received from main facility 12 to multiple users via communications path 20.*” (*Ellis*, 4:57-67 (emphasis added).)

## 2. Dependent Claim 2

***“The video-on-demand system of claim 1 wherein the control screen signal includes a video display control menu comprising play and stop”***

*Ellis* discloses that the control screen signal, which is a signal that defines a control screen, includes a video display control menu comprising play and stop.

*Ellis* discloses that the remote access program guide may provide the user with the ability to control the user television equipment 22 remotely: “The remote access program guide may also provide a user with an opportunity to control user television equipment 22 remotely. A user may, for example, position highlight region 201 over a setting, select the setting, and change its value. The user may, for example, change the current channel, the current volume, or *control user television equipment 22 in any other suitable manner.*” (*Ellis*, 20:10-16 (emphasis added).) A POSITA would understand that “control . . . in any other suitable manner” includes play and stop control. (*Id.*; *Almeroth*, ¶¶84-85.)

### 3. Dependent Claim 3

***“The video-on-demand system of claim 2 wherein the viewer control selection comprises a video display control menu selection”***

*Ellis* discloses the viewer control selection comprises a video display control menu selection. *Ellis* discloses that the remote access program guide provides the user with menu selections, thereby providing the user with a video display control menu selection: “The remote access program guide running on remote program guide access device 24 may *provide a user with an opportunity to remotely access program listings.*” (*Ellis*, 14:26-28 (emphasis added).) *Ellis* discloses “[t]he program listings may also, for example, be *displayed in a program listings screen by a suitable display device.* A program listings screen may *contain one or more lists of programs organized according to one or more organization criteria* (e.g., by

program type, theme, or any other predefined or user defined and selectable criteria) and sorted in various ways (e.g., alphabetically). One approach is to organize program listings into a program listings grid.” (*Ellis*, 14:37-44 (emphasis added); *see also id.* at 16:59-17:7, 25:36-26:9.) A POSITA would understand the menu selections in *Ellis* are video display control menu selections. (Almeroth, ¶¶86-87.)

#### **4. Dependent Claim 4**

***“The video-on-demand system of claim 3 wherein the video display control menu further comprises pause, rewind, and fast forward”***

*Ellis* discloses that the video display control menu further comprises pause, rewind, and fast forward. *Ellis* discloses that the video display control menu may provide the user with the ability to control the user television equipment 22 remotely: “[t]he remote access program guide may also provide a user with an opportunity to control user television equipment 22 remotely. A user may, for example, position highlight region 201 over a setting, select the setting, and change its value. The user may, for example, change the current channel, the current volume, or *control user television equipment 22 in any other suitable manner.*” (*Ellis*, 20:10-16 (emphasis added).) A POSITA would understand that “control . . . in any other suitable manner” includes pause, rewind, and fast forward control. (Almeroth, ¶¶88-89.)

#### **5. Dependent Claim 5**

***“The video-on-demand system of claim 1 wherein the control screen includes a video content selection menu”***

*Ellis* discloses that the control screen includes a video content selection menu.

*Ellis* discloses that the remote program guide access device, which contains the claimed “control screen,” “may *provide a user with an opportunity to remotely access program listings.*” (*Ellis*, 14:26-28 (emphasis added).) *Ellis* discloses that these program listings (the “video content selection menu”) allow a user to make selections based on program type, theme, or other selectable criteria. (*Ellis*, 14:37-44.) The user is able to select a program listed in the program listings to play it. (*Ellis*, 25:36-26:9.) A POSITA would understand the program listings and selection feature in *Ellis* as the claimed “video content selection menu.” (Almeroth, ¶¶90-91.)

## 6. Dependent Claim 6

***“The video-on-demand system of claim 5 wherein second communications interface is configured to receive a video content menu selection signal from the second communications system, and the processing system is configured to process the video content selection signal to transfer selected video content in the video content signals”***

As explained in detail above, *Ellis* discloses that television program guide equipment 17, which includes the television distribution facility 16, the program guide distribution equipment 21 and communications device 27 (the “second communication interface”), receives a user selected video or audio listing (the “video content menu selection”). (*Ellis*, 25:36-43, Fig. 2b.) In response to this user selection, the television program guide equipment 17, which includes the television distribution facility 16 (the “processing system”) processes and implements the user

selection to obtain and transfer the selected video or audio in the video content signals to either the remote program guide access device 24 or the television equipment 22. (*Id.*, see also *id.* at 19:6-30, 6:61-7:5, 4:57-67; Almeroth, ¶¶92-93.)

## 7. Dependent Claim 7

***“The video-on-demand system of claim 1 wherein the second communication interface is configured to interface with an internet”***

*Ellis* discloses that the second communication interface is configured to interface with an internet: “the interactive television program guide may obtain program guide data *from the Internet.*” (*Ellis*, 7:21-23 (emphasis added).) *Ellis* further discloses that “[r]emote program guide access device 24 and interactive television program guide equipment 17 may *communicate*, for example, *using a protocol stack which includes Sequenced Packet Exchange/Internetwork Packet Exchange (SPX/IPX) layers, Transmission Control Protocol/Internet Protocol (TCP/IP) layers, Appletalk Transaction Protocol/Datagram Delivery Protocol (ATP/DDP) layers*, or any other suitable network and transport layer protocols or combination of protocols.” (*Ellis*, 10:32-40 (emphasis added).) These exemplary protocols are all ways for interfacing with an internet. (Almeroth, ¶94.) Additionally, *Ellis* discloses that “the remote access program guide may *provide the pay-per-view information via Internet service system 61.*” (*Ellis*, 25:32-35 (emphasis added).) The program guide distribution equipment 21 and communications device 27 (the “second communication interface”) interface with

an Internet, as *Ellis* discloses that these elements are obtaining the program guide information from the Internet. (*Ellis*, 7:21-23, 10:32-40, 25:32-35; Almeroth, ¶¶94-95.)

## 8. Dependent Claim 8

***“The video-on-demand system of claim 1 wherein the second communication interface is configured to interface with a world-wide web”***

*Ellis* discloses that the second communication interface is configured to interface with a world-wide web. *Ellis* discloses that the second communication interface communicates over internet protocols and the Internet service system, which connect to the world-wide web. (Almeroth, ¶96.) For example, *Ellis* discloses that “the interactive television program guide may obtain program guide data *from the Internet.*” (*Ellis*, 7:21-23 (emphasis added).) *Ellis* also discloses that “[r]emote program guide access device 24 and interactive television program guide equipment 17 may *communicate, for example, using a protocol stack which includes Sequenced Packet Exchange/Internetwork Packet Exchange (SPX/IPX) layers, Transmission Control Protocol/Internet Protocol (TCP/IP) layers, Appletalk Transaction Protocol/Datagram Delivery Protocol (ATP/DDP) layers, or any other suitable network and transport layer protocols or combination of protocols.*” (*Ellis*, 10:32-40 (emphasis added).) Additionally, *Ellis* discloses that “the remote access program guide may *provide the pay-per-view information via Internet service system 61.*” (*Ellis*, 25:32-35 (emphasis added).) The program guide distribution equipment

21 and communications device 27 (the “second communication interface”) interface with a world-wide web, as *Ellis* discloses that these elements are obtaining the program guide information from the world-wide web through an Internet browser. (*Ellis*, 7:21-23, 10:32-40, 25:32-35, 27:20-30; *Almeroth*, ¶¶96-97.)

## **9. Dependent Claim 9**

***“The video-on-demand system of claim 1 wherein the control screen comprises a web page”***

*Ellis* discloses that the remote program guide access device, which contains the claimed “control screen,” comprises a web page. *Ellis* discloses that “[a]s shown in FIG. 24, a remote access device may provide the user with *access to a browser application by displaying, for example, browser screen 700 of a remote access browser application.*” (*Ellis*, 27:20-23 (emphasis added).) Figure 24 is shown below, with the “Home Page” annotated in yellow designating the web page:

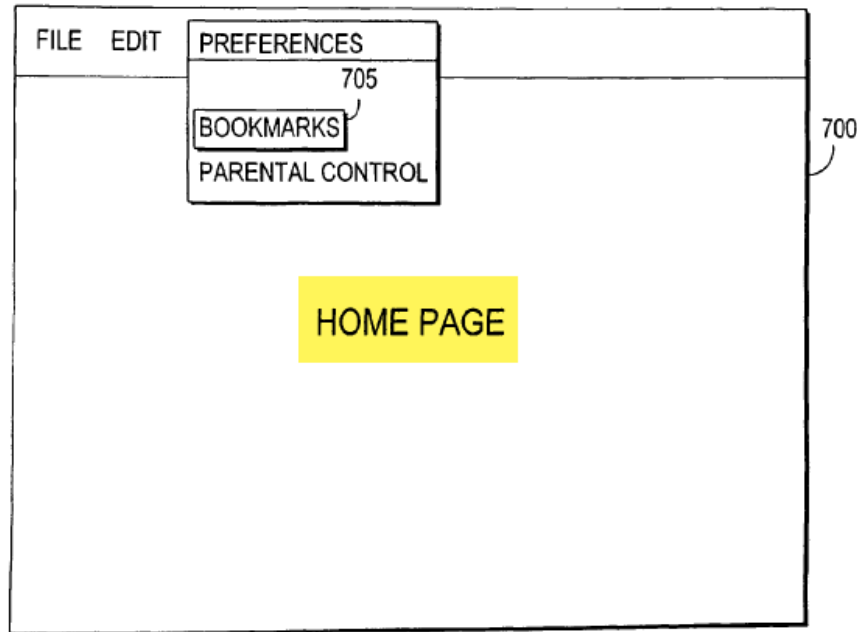


FIG. 24

The above home page is a web page that acts as a control screen, as shown in the above Figure that allows for “Parental Controls” or other user controls. (Almeroth, ¶¶98-100.)

#### 10. Independent Claim 10

Independent claim 10 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section VI.B.1; Almeroth, ¶¶101-102; *compare* ’4907 patent, 6:29-27 *with* ’4907 patent, 7:6-20.) Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 10, demonstrating claim 10 is anticipated for the same reasons as claim 1.



### **11. Dependent Claims 11-18**

Aside from depending from independent claim 10 rather than claim 1, dependent claims 11-18 are identical to dependent claims 2-9. (*Compare* '4907 patent, 6:48-7:5 *with* '4907 patent, 7:21-8:2.) Therefore, dependent claims 11-18 are unpatentable for the same reasons as set forth above for claims 2-9. (*See supra* Section VI.B.2-9.) Appendix A contains a chart that cross references the limitations of claims 2-9 to the limitations of claims 11-18, demonstrating that claims 11-18 are anticipated for the same reasons as claims 2-9.

### **12. Independent Claim 19**

Independent claim 19 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section VI.B.1; Almeroth, ¶¶105-108.) Each of the non-preamble limitations discussed above for claim 1 are included nearly identically in claim 19. (*Compare* '4907 patent, 6:29-27 *with* '4907 patent, 8:7-21.)

Claim 19 differs from claim 1 only in its preamble, which recites “[a] product comprising a processor-readable storage medium storing processor-executable instructions for performing a method for operating a video-on-demand system.” ('4907 patent, 8:3-6.) To the extent the preamble limits the claims, *Ellis* discloses the preamble for the same reasons set forth above in Section VI.B.1.a above, but also for the additional reasons set forth below.

*Ellis* discloses “a **product comprising a processor-readable storage medium storing processor-executable instructions for performing a method for operating a video-on-demand system.**” As explained in detail above for claim 1, the remote program guide access device 24 is used to operate the video-on-demand system disclosed in *Ellis*. This remote program access device “may be any suitable personal computer (PC), portable computer (e.g., a notebook computer), palmtop computer, handheld personal computer (H/PC), display remote, touch-screen remote, automobile PC, personal digital assistant (PDA), or other suitable computer based device,” which all contains a processor-readable storage medium storing processor-executable instructions for operating a video-on-demand (Almeroth, ¶107.) In addition, *Ellis* discloses that the remote program guide access device 24 “may have user interface 52, processing circuitry 54, storage 56, and communications device 58. User interface 52 may be any suitable input or output device or system, and may include a pointing device, keyboard, touch-pad, touchscreen, pen stylus, voice recognition system, mouse, trackball, cathode ray tube (CRT) monitor, liquid crystal display (LCD), voice synthesis processor and speaker, or any other suitable user input or output device. Processing circuitry 54 may include any suitable processor, such as an Intel 486 or Pentium®) microprocessor. Remote program guide access device 24 may also have storage 56. Storage 56 may be any suitable memory or other storage device, such as RAM, ROM, flash memory, a hard

disk drive, etc.” (*Ellis*, 9:44-62.) This is further evidence that the remote program guide access device contains a processor-readable storage medium storing processor-executable instructions for operating a video-on-demand. Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 19, and the disclosures in the prior art for each cross-referenced limitation, demonstrating claim 19 is anticipated for the same reasons as claim 1.

### **13. Dependent Claims 20-25**

Aside from depending from independent claim 19 rather than claim 1, dependent claims 20-25 are identical to dependent claims 2-6, and 9. (*Compare* ’4907 patent, 6:48-64, 7:4-5 *with* ’4907 patent, 8:22-40.) Therefore, dependent claims 20-25 are unpatentable for the same reasons as set forth above for claims 2-6, and 9. (*See supra* Section VI.B.2-6, Section VI.B.9.) Appendix A contains a chart that cross references the limitations of claims 2-6, and 9 to the limitations of claims 20-25, demonstrating that claims 20-25 are anticipated for the same reasons as claims 2-6, and 9.

### **C. Ground 2: *Ellis* and *Browne* Render Obvious Claims 1-25**

The proposed combination of *Ellis* and *Browne* implements the video-on-demand system and remote control device of *Ellis* with the control screen and video control menus of *Browne* on the remote control of *Ellis*. As discussed below, a

POSITA would have understood this combination to have been an implementation of *Ellis*'s teachings in view of *Browne*. (Almeroth, ¶¶111-120.)

A POSITA would readily have combined *Ellis* and *Browne* for a variety of reasons. (Almeroth, ¶¶112-120.) *Ellis* expressly discloses an interactive television program guide with multiple video sources that displays the video content on either a television or a remote control device. (*Ellis*, Abstract.) A POSITA, with the interactive television system of *Ellis*, would have naturally been motivated to use additional features in the controller used in *Ellis*, such as the control configurations taught by *Browne*. (*Ellis*, 9:4-7, 28:21-24; *Browne*, 13, 27, Fig. 7.) Indeed, *Ellis* already discloses using control signals and control screens in the interactive television system, and in view of the teachings of *Browne*, it would have been a trivial and obvious choice to use additional control features and control signals. (Almeroth, ¶113.)

A POSITA would have combined *Ellis* and *Browne* because, for example, the market for video-on-demand and interactive television systems demonstrated an increase in demand for systems with different content sources and remote controls. (*Ellis*, 9:4-7, 28:21-24; *Browne*, 13, 27, Fig. 7.) A POSITA would have understood that there was long history of adding new functionalities and features to remote controls to allow them to interface with their respective media systems. (Almeroth, ¶113.) As manufacturers added new features to media systems, they also added

these corresponding features to remote controls to allow a user to fully utilize these features. (Almeroth, ¶113.) Thus, the use of controls or signals used in a remote control in *Browne* would merely be adding these known features. (Almeroth, ¶113.) Such a remote control would be interchangeable with the remote control in *Ellis*. Thus, a POSITA would have recognized combining an interactive remote control system, like the one in *Browne*, with an interactive television system, like the one in *Ellis*, was a natural fit. *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1452 (Fed. Cir. 1984) (the starting place for obviousness is to “picture the inventor as working in his shop with the prior art references, *which he is presumed to know*—hanging on the walls around him.”) (emphasis in original).

As detailed above, alternative control devices were well-known to a POSITA at the time of the '4907 patent. Such alternative control devices for use in an interactive television system include the system and control device disclosed in *Browne*. (Almeroth, ¶113.) The system and control device in *Browne* was well-known before the filing date of the '4907 patent, and, in fact, was well-known to work in tandem with an interactive television system like the one disclosed in *Ellis*. (Almeroth, ¶113.) This is expressly disclosed, for example, by *Browne*. *Browne* describes a video-on-demand system where the controller generates a virtual control screen, which is placed on any screen for a user to control playback and allows the user to select different menu and video sources to display on the controller or

television. (*Browne*, 13, 27, Fig. 7.) *Ellis* discloses a control screen, and therefore, a POSITA would have been motivated to combine *Browne*'s generation and transfer of a control screen with the control screen framework already disclosed in *Ellis*.

One of ordinary skill in the art would have readily combined *Ellis* with *Browne* for these and the additional reasons (Almeroth, ¶¶114-120):

***Ellis* and *Browne* are in the same field of endeavor as the '4907 patent.** (Almeroth, ¶115.) *Ellis*, *Browne*, and the '4907 patent describe and teach video and audio systems that allow a user to select different video content from different sources, including the world wide web. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Browne*, 1, 13, 24, 27; '4907 patent, 2:28-34, 6:28-47, 7:6-21, 8:3-21.)

***Ellis* and *Browne* are aimed at solving the same perceived problem as the '4907 patent.** (Almeroth, ¶116.) *Ellis*, *Browne*, and the '4907 patent address the problem of using single-purpose set-top boxes to control video-on-demand selections. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Browne*, 1, 13, 24, 27; '4907 patent, 1:31-40.)

***Ellis* and *Browne* use similar techniques to solve the same problem.** (Almeroth, ¶117.) As described above, *Ellis* and *Browne* disclose and teach video and audio systems that allow a user to select different video content from different sources, including the world wide web, without the use of a set-top box. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Browne*, 1, 13, 24, 27.) A POSITA would have

commonly looked to the teachings of a video-on-demand system in *Ellis* to use with other conventional video and audio system teachings, like *Browne*, because they rely on similar video and audio sources and use a computer to access and control the delivery of the video and audio content to solve the same problem of the limitations of control when using a set-top box. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Browne*, 1, 13, 24, 27.)

**Combining *Ellis* with *Browne* would have been a predictable combination.** Given the disclosures in *Ellis* and *Browne*, it would have been entirely predictable to a POSITA to combine *Ellis* with *Browne*. (Almeroth, ¶118.) Specifically, a POSITA would have seen an incentive to use *Browne*'s disclosure of a controller with a control screen to access and play video-on-demand content, with the general video and audio systems described in *Ellis* to improve upon *Ellis*'s control of the video-on-demand content without the use of any box connected to a television. (Almeroth, ¶118.) In addition, a POSITA would have been motivated to use a controller with a control screen, as taught by *Browne*, in *Ellis*. (Almeroth, ¶118; *Browne*, 1, 13, 24, 27.) A POSITA would have also been motivated by *Browne*'s stated aim of providing "the user greater flexibility and control over the recording and replaying of programs" to improve upon *Ellis*. (*Browne*, 2; Almeroth ¶118.)

**Combining *Ellis* with *Browne* would have yielded no unexpected results.**

Combining *Ellis* with *Browne* would have yielded predictable results at least because a POSITA would have readily understood that combining these references would have allowed the video-on-demand content and controller elements of *Ellis* and *Browne* to operate without interference. (Almeroth, ¶119.) Moreover, the combination of the teachings of *Ellis* with *Browne* would not have resulted in an inoperable combination because it would simply be adding a well-known video source and controller, as disclosed in *Ellis*, to the video and audio system controller system of *Ellis*. (Almeroth, ¶119.)

**A POSITA would have had a reasonable expectation of success in combining *Ellis* with *Browne*.** A POSITA would have had at least a reasonable expectation of success when combining *Ellis* with *Browne* in this manner. All the above reasons—the predictability of this combination, that there would have been no unexpected results, and the similarity in the disclosure of the three references—would have led a POSITA to have a reasonable expectation of success. (Almeroth, ¶120.)

**1. Independent Claim 1****a. Preamble: “A video-on-demand system”**

*Ellis* discloses this limitation as described above in Claim 1, Preamble. (See *supra* Section VI.B.1.a.)



- b. **Element [A]: “a first communication interface configured to transfer video content signals to a first communication system”**

*Ellis* discloses this limitation as described above in Claim 1, Element [A].

(*See supra* Section VI.B.1.b.)

- c. **Element [B]: “a second communication interface configured to transfer the video content signals to a second communication system, transfer a control screen signal to the second communication system, and receive a video control signal from the second communication system”**

*Ellis* discloses this limitation as described above in Claim 1, Element [B].

(*See supra* Section VI.B.1.c.)

To the extent Sprint argues *Ellis* does not disclose “*a second communication interface configured to . . . transfer a control screen signal to the second communication system,*” *Browne* teaches this limitation. The system in *Browne* allows a user to later request and view recorded input signals on one or more output monitors. (*Browne*, 1, 13.) *Browne* teaches that the disclosed recorder’s controller (the “second communication interface”) generates a virtual control screen (the “control screen signal”), which is transferred to the high speed data bus (the “second communication system”) for display on any output monitor screen for a user to control playback. (*Browne*, 13-14.) *Browne* teaches that when the control screen appears, “the user selects the output to which the signals are to be sent” and “then selects from the signal selection the types of signals which will be output by the

output selected . . . .” (*Browne*, 27, Fig. 7.) Specifically, *Browne* teaches that a control screen can include “[a] list of programs stored and set for storing” and “may be viewed by choosing the stored program list option from the main user control menu.” (*Browne*, 24, Fig. 2.) “When this option is selected, a sorted program list screen is output by controller to output.” (*Browne*, 24, Fig. 2.) As explained above, a POSITA would have been motivated to combine *Ellis* with *Browne* to disclose this limitation. (Almeroth, ¶¶111-120, 123-124.)

- d. **Element [C]: “a processing system configured to transfer the control screen signal to the second communication interface, receive the video control signal from the second communication interface, implement a viewer-control selection indicated by the video control signal, and transfer the video content signals to the first communication interface if the first communication interface is indicated by the video control signal received from the second communication interface or transfer the video content signals to the second communication interface if the second communication interface is indicated by the video control signal”**

*Ellis* discloses this limitation as described above in Claim 1, Element [C].  
(See *supra* Section VI.B.1.d.)

To the extent Sprint argues *Ellis* does not disclose “*processing system configured to transfer the control screen signal to the second communication interface*,” *Browne* teaches this limitation. The system in *Browne* allows a user to later request and view recorded input signals on one or more output monitors.

(*Browne*, 1, 13.) *Browne* teaches that the disclosed recorder's controller generates a virtual control screen, which is placed on any output monitor screen for a user to control playback. (*Browne*, 13.) *Browne* teaches that when the control screen appears, "the user selects the output to which the signals are to be sent" and "then selects from the signal selection the types of signals which will be output by the output selected . . . ." (*Browne*, 27, Fig. 7.) Specifically, *Browne* teaches that a control screen can include "[a] list of programs stored and set for storing" and "may be viewed by choosing the stored program list option from the main user control menu." (*Browne*, 24, Fig. 2.) "When this option is selected, a sorted program list screen is output by controller to output." (*Browne*, 24, Fig. 2.) *Browne* discloses that the "control screen signal" is transferred by the digital cross-point 107 (the "processing system") to the disclosed recorder's controller (the "second communication interface"). (*Browne*, 13-14, 24, Fig. 2.) Accordingly, *Browne* discloses that the processing system transfers the control screen signal to the second communication interface. A POSITA would have been motivated to combine *Ellis* with *Browne*'s disclosure of transferring a control screen, as *Ellis* discloses transferring a program guide with a program guide listing and program guide information. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; Almeroth, ¶¶111-120, 126.) As explained above, a POSITA would have been motivated to combine *Ellis* with *Browne* to disclose this limitation. (Almeroth, ¶¶111-120, 126.)

## 2. Dependent Claim 2

***“The video-on-demand system of claim 1 wherein the control screen signal includes a video display control menu comprising play and stop”***

*Ellis* discloses this limitation as described above. (*See supra* Section VI.B.2.)

To the extent Sprint argues *Ellis* does not disclose this limitation, *Browne* teaches this limitation. *Browne* discloses, in providing the video content, the disclosed recorder’s controller generates a virtual control screen (the “control screen signal”), which is placed on any screen for a user to control playback. (*Browne*, 13.) *Browne* discloses that this control screen signal is used for “control of any one or more playback or recording processes.” (*Browne*, 13.) *Browne* discloses the controller includes a “play” and “stop” feature. (*Browne*, 33, Figure 14 part 1405.) A POSITA would have been motivated to combine *Ellis* with *Browne*’s disclosure of the control screen signal, as *Ellis* discloses transferring an interactive program guide with a program guide listing and program guide information and discloses that the interactive program guide provides the user with the ability to control the user television equipment 22 remotely. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; Almeroth, ¶¶111-120, 127.)

## 3. Dependent Claim 3

***“The video-on-demand system of claim 2 wherein the viewer control selection comprises a video display control menu selection”***

*Ellis* discloses the subject matter in this claim for the same reasons as discussed above. (*See supra* Section VI.B.3.)

#### **4. Dependent Claim 4**

***“The video-on-demand system of claim 3 wherein the video display control menu further comprises pause, rewind, and fast forward”***

*Ellis* discloses this limitation as described above. (*See supra* Section VI.B.4.)

To the extent *Ellis* does not disclose this limitation, *Browne* teaches this limitation. In providing the video content, *Browne* teaches the disclosed recorder’s controller generates a virtual control screen, which is placed on any screen for a user to control playback. (*Browne*, 13.) *Browne* discloses that this control screen signal is used for “control of any one or more playback or recording processes” (the “video display control menu”). (*Browne*, 13.) *Browne* discloses the controller includes a “pause,” “rewind,” and “fast forward” feature. (*Browne*, 33, Figure 14 part 1405.) A POSITA would have been motivated to combine *Ellis* with *Browne*’s disclosure of the video display control menu, as *Ellis* discloses transferring an interactive program guide with a program guide listing and program guide information and discloses that the interactive program guide provides the user with the ability to control the user television equipment 22 remotely. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; Almeroth, ¶¶111-120, 129.)

**5. Dependent Claims 5-9**

*Ellis* discloses the subject matter in these claims as discussed above. (*See supra* Section VI.B.5-9.)

**6. Independent Claim 10**

Independent claim 10 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section VI.C.1; *Almeroth*, ¶131; *compare* '4907 patent, 6:29-27 *with* '4907 patent, 7:6-20.) Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 10, demonstrating claim 10 is rendered obvious for the same reasons as claim 1.

**7. Dependent Claims 11-18**

Aside from depending from independent claim 10 rather than claim 1, dependent claims 11-18 are identical to dependent claims 2-9. (*Compare* '4907 patent, 6:48-7:5 *with* '4907 patent, 7:21-8:2.) Therefore, dependent claims 11-18 are unpatentable for the same reasons as set forth above for claims 2-9. (*See supra* Section VI.C.2-5.) Appendix A contains a chart that cross references the limitations of claims 2-9 to the limitations of claims 11-18, demonstrating that claims 11-18 are rendered obvious for the same reasons as claims 2-9.

**8. Independent Claim 19**

Independent claim 19 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section

VI.C.1; Almeroth, ¶¶133-134.) Each of the non-preamble limitations discussed above for claim 1 are included nearly identically in claim 19. (*Compare* '4907 patent, 6:29-27 *with* '4907 patent, 8:7-21.)

Claim 19 differs from claim 1 only in its preamble, which recites “[a] product comprising a processor-readable storage medium storing processor-executable instructions for performing a method for operating a video-on-demand system.” ('4907 patent, 8:3-6.) To the extent the preamble limits the claims, *Ellis* and *Browne* disclose the preamble for the same reasons set forth above in Section VI.C.1.a above and *Ellis* discloses the preamble for the same reasons set forth in Section VI.B.19. Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 19, and the disclosures in the prior art for each cross-referenced limitation, demonstrating claim 19 is rendered obvious for the same reasons as claim 1.

## **9. Dependent Claims 20-25**

Aside from depending from independent claim 19 rather than claim 1, dependent claims 20-25 are identical to dependent claims 2-6, and 9. (*Compare* '4907 patent, 6:48-64, 7:4-5 *with* '4907 patent, 8:22-40.) Therefore, dependent claims 20-25 are unpatentable for the same reasons as set forth above for claims 2-6, and 9. (*See supra* Section VI.C.2-5.) Appendix A contains a chart that cross references the limitations of claims 2-6 and 9 to the limitations of claims 20-25,

demonstrating claims 20-25 are rendered obvious for the same reasons as claims 2-6, and 9.

**D. Ground 3: *Ellis* and *Humpleman* Render Obvious Claims 1-25**

The proposed combination of *Ellis* and *Humpleman* implements the video-on-demand system and remote control device of *Ellis* with the control screen and video control menus of *Humpleman* on the remote control of *Ellis*. As discussed below, a POSITA would have understood this combination to have been an implementation of *Ellis*'s teachings in view of *Humpleman*. (Almeroth, ¶¶136-146.)

A POSITA would readily have combined *Ellis* and *Humpleman* for a variety of reasons. (Almeroth, ¶¶137-146.) *Ellis* expressly discloses an interactive television program guide with multiple video sources that displays the video content on either a television or a remote control device. (*Ellis*, Abstract.) A POSITA, with the interactive television system of *Ellis*, would have naturally been motivated to use additional features in the controller used in *Ellis*, such as the control configurations taught by *Humpleman*. (*Ellis*, 9:4-7, 28:21-24; *Humpleman*, Abstract, 7:18-23, 14:5-33, 15:25-47, 18:45-51.) Indeed, *Ellis* already discloses using control signals and control screens in the interactive television system, and in view of the teachings of *Humpleman*, it would have been a trivial and obvious choice to use additional control features and control signals. (Almeroth, ¶138.)



A POSITA would have combined *Ellis* and *Humpleman* because, for example, the market for video-on-demand and interactive television systems demonstrated an increase in demand for systems with different content sources and remote controls. (*Ellis*, 9:4-7, 28:21-24; *Humpleman*, Abstract, 7:18-23.) A POSITA would have understood that there was long history of adding new functionalities and features to remote controls to allow them to interface with their respective media systems. (Almeroth, ¶¶138-139.) As manufacturers added new features to media systems, they also added these corresponding features to remote controls to allow a user to fully utilize these features. (Almeroth, ¶¶138-139.) Thus, the use of controls or signals used in a remote control in *Humpleman* would merely be adding these known features. (Almeroth, ¶¶138-139.) Such a remote control would be interchangeable with the remote control in *Ellis*. Thus, a POSITA would have recognized combining an interactive remote control system, like the one in *Humpleman*, with an interactive television system, like the one in *Ellis*, was a natural fit. *Kimberly-Clark*, 745 F.2d at 1452.

As detailed above, alternative control devices were well-known to a POSITA at the time of the '4907 patent. Such alternative control devices for use in an interactive television system include the system and control device disclosed in *Humpleman*. (Almeroth, ¶¶138-139.) The system and control device in *Humpleman* was well-known before the filing date of the '4907 patent, and, in fact, was well-

known to work in tandem with an interactive television system like the one disclosed in *Ellis*. (Almeroth, ¶¶138-139.) This is expressly disclosed, for example, by *Humpleman*. *Humpleman* describes a video-on-demand system where the controller can be in the form of a computer that generates a virtual control screen and allows a user to control playback and select different menu and video sources to display on the controller or television. (*Humpleman*, Abstract, 7:18-23, 14:5-33, 15:25-47, 18:45-51.) *Ellis* discloses a control screen, and therefore, a POSITA would have been motivated to combine *Humpleman*'s generation and transfer of a control screen with the control screen framework already disclosed in *Ellis*.

One of ordinary skill in the art would have readily combined *Ellis* with *Humpleman* for these and the additional reasons (Almeroth, ¶¶140-146):

***Ellis and Humpleman are in the same field of endeavor as the '4907 patent.*** (Almeroth, ¶141.) *Ellis*, *Humpleman*, and the '4907 patent describe and teach video and audio systems that allow a user to select different video content from different sources, including the world wide web. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Humpleman*, Abstract, 7:18-23, 14:5-33, 15:25-47, 18:45-51; '4907 patent, 2:28-34, 6:28-47, 7:6-21, 8:3-21.)

***Ellis and Humpleman are aimed at solving the same perceived problem as the '4907 patent.*** (Almeroth, ¶142.) *Ellis*, *Humpleman*, and the '4907 patent address the problem of using single-purpose set-top boxes to control video-on-

demand selections. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Humpleman*, Abstract, 7:18-23, 14:5-33.)

***Ellis and Humpleman use similar techniques to solve the same problem.***

(Almeroth, ¶143.) As described above, *Ellis* and *Humpleman* disclose and teach video and audio systems that allow a user to select different video content from different sources, including the world wide web, without the use of a set-top box. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Humpleman*, 7:18-23, 14:5-33, 15:25-47, 18:45-51.) A POSITA would have commonly looked to the teachings of a video and audio system in *Humpleman* to use with other conventional video and audio system teachings, like *Ellis*, because they rely on similar video and audio sources using a computer to access and control the delivery of the video and audio content to solve the same problem of the limitations of control when using a set-top box. (*Ellis*, 1:37-45, 2:47-60, 5:9-12, 9:42-49; *Humpleman*, 7:18-23, 14:5-33, 15:25-47, 18:45-51.)

**Combining *Ellis* with *Humpleman* would have been a predictable combination.** Given the disclosures in *Ellis* and *Humpleman*, it would have been entirely predictable to a POSITA to combine *Ellis* with *Humpleman*. (Almeroth, ¶144.) Specifically, a POSITA would have seen an incentive to use *Humpleman*'s disclosure of a controller with a control screen to access and play different video content, with the general video and audio systems described in *Ellis* to improve upon *Ellis*'s control of the video-on-demand content without the use of any box connected

to a television. (Almeroth, ¶144.) In addition, a POSITA would have been motivated to use a controller with a control screen, as taught by *Humpleman* with the systems described in *Ellis*. (Almeroth, ¶144; *Humpleman*, 7:18-23, 14:5-33, 15:25-47, 18:45-51.) A POSITA would have also been motivated by *Humpleman*'s stated aim of “generating a program guide for a home network environment wherein at least one multi-media device is connected to a home network, and wherein the data provided thereby is provided to a user either at that device or at another device connected to the home network” to improve upon the systems described in *Ellis*. (*Humpleman*, 2:8-13; Almeroth, ¶144.)

**Combining *Ellis* with *Humpleman* would have yielded no unexpected results.** Combining *Ellis* with *Humpleman* would have yielded predictable results at least because a POSITA would have readily understood that combining these references would have allowed the video-on-demand content and controller elements of *Ellis* and *Humpleman* to operate without interference. (Almeroth, ¶145.) Moreover, the combination of the teachings of *Ellis* with *Humpleman* would not have resulted in an inoperable combination because it would simply be adding a well-known video source and controller to the video and audio system controller system of *Ellis*. (Almeroth, ¶145.)

**A POSITA would have had a reasonable expectation of success in combining *Ellis* with *Humpleman*.** A POSITA would have had at least a

reasonable expectation of success when combining *Ellis* with *Humpleman* in this manner. (Almeroth, ¶146.) All the above reasons—the predictability of this combination, that there would have be no unexpected results, and the similarity in the disclosure of the two references—would have led a POSITA to have a reasonable expectation of success.

# **1. Independent Claim 1**

## **a. Preamble: “A video-on-demand system”**

*Ellis* discloses this limitation as described above in Claim 1, Preamble. (See *supra* Section VI.B.1.a.)

## **b. Element [A]: “a first communication interface configured to transfer video content signals to a first communication system”**

*Ellis* discloses this limitation as described above in Claim 1, Element [A]. (See *supra* Section VI.B.1.b.)

## **c. Element [B]: “a second communication interface configured to transfer the video content signals to a second communication system, transfer a control screen signal to the second communication system, and receive a video control signal from the second communication system”**

*Ellis* discloses this limitation as described above in Claim 1, Element [B]. (See *supra* Section VI.B.1.c.)

To the extent Sprint argues *Ellis* does not disclose “*a second communication interface configured to . . . transfer a control screen signal to the second*

*communication system,” Humpleman teaches this limitation. In providing video content to a requesting user, Humpleman teaches transferring a “human interface for the home network” that “comprises a screen for displaying HTML pages.” (Humpleman, 5:60-63.) Humpleman discloses that a “HTML file” is used for control, where “[e]ach HTML file contains specific control and command information for a respective home device. The HTML files enable the browser-based DTV 102 to graphically display control and command information to a user for a particular home device.” (Humpleman, 6:55-63.) Humpleman teaches that “each home device has a control application associated with it,” and each such control application “handles the communication between the session manager of the respective home network and the home device.” (Humpleman, 19:34-38.) Humpleman’s “control application” associated with a *second* home device is the “second communication interface,” and is expressly described as transferring video content signals and a signal that contains the disclosed HTML files (the “control screen signal”), and receiving a video control signal, over, for example, a 1394 serial bus or wireless network (the “second communication system”). (Humpleman, 5:27-38, 6:19-24.)*

*Humpleman* discloses that a display device connected to the home network “may receive and interpret the HTML files associated with the home devices connected to the home network, and graphically display the information contained

therein using a GUI on its screen.” (*Humpleman*, 7:30-35.) Using this GUI, a user can control video display. As explained above, a POSITA would have been motivated to combine *Ellis* with *Humpleman*’s disclosure of transferring a control screen, as *Ellis* discloses transferring a program guide with a program guide listing and program guide information. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; *Almeroth*, ¶¶150-151.) Additionally, as explained above, a POSITA would have been motivated to combine *Ellis* with *Humpleman* to disclose this limitation.

- d. **Element [C]: “a processing system configured to transfer the control screen signal to the second communication interface, receive the video control signal from the second communication interface, implement a viewer-control selection indicated by the video control signal, and transfer the video content signals to the first communication interface if the first communication interface is indicated by the video control signal received from the second communication interface or transfer the video content signals to the second communication interface if the second communication interface is indicated by the video control signal”**

*Ellis* discloses this limitation as described above in Claim 1, Element [C]. (See *supra* Section VI.B.1.d.) To the extent *Ellis* does not disclose “**a processing system configured to transfer the control screen signal to the second communication interface,**” *Humpleman* teaches this limitation. In providing video content to a requesting user, *Humpleman* teaches transferring a “human interface for the home network” that “comprises a screen for displaying HTML pages.”

(*Humpleman*, 5:60-63.) *Humpleman* teaches the use of a “HTML file” for control, where “[e]ach HTML file contains specific control and command information for a respective home device. The HTML files enable the browser-based DTV 102 to graphically display control and command information to a user for a particular home device.” (*Humpleman*, 6:55-63.) *Humpleman* discloses the session manager is the “processing system” and it is “configured to transfer the control screen signal” (*e.g.*, the signal that generates the control screen for the second home device comprising the HTML files) “to the second communication interface” (*e.g.*, the control application for the second home device). (*Humpleman*, 19:34-38, 14:22-33, 5:55-67, 6:50-57, 22:32-41, 15:40-43, 17:37-43, 14:5-11.)

*Humpleman* discloses that a display device connected to the home network “may receive and interpret the HTML files associated with the home devices connected to the home network, and graphically display the information contained therein using a GUI on its screen.” (*Humpleman*, 7:30-35.)

*Humpleman* further discloses that the GUI for the control screen is implemented using information that resides in a server. (*Humpleman*, 8:5-11.) A POSITA would have been motivated to combine *Ellis* with *Humpleman*’s disclosure of transferring a control screen, as *Ellis* discloses transferring a program guide with a program guide listing and program guide information. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; *Almeroth*, ¶¶153-154.) Additionally, as explained above, a POSITA



would have been motivated to combine *Ellis* with *Humpleman* to disclose this limitation.

## 2. Dependent Claim 2

***“The video-on-demand system of claim 1 wherein the control screen signal includes a video display control menu comprising play and stop”***

*Ellis* discloses this limitation as described above in claim 2. (See *supra* Section VI.B.2.) To the extent Sprint argues *Ellis* does not disclose this limitation, *Humpleman* teaches this limitation. *Humpleman* discloses “the control screen signal includes a video display control menu comprising play and stop.” In providing the video content, *Humpleman* teaches the disclosed recorder’s controller generates a virtual control screen (the “control screen signal”), which is placed on any screen for a user to control playback. (*Humpleman*, 6:55-63.) *Humpleman* discloses that this virtual control screen is used to “graphically display control and command information to a user for a particular home device.” (*Humpleman*, 6:55-63.) *Humpleman* discloses the virtual control screen includes a “play” and “stop” feature. (*Humpleman*, 18:34-44, Figure 13 parts 1006 and 1044.) A POSITA would have been motivated to combine *Ellis* with *Humpleman*’s disclosure of the control screen signal, as *Ellis* discloses transferring an interactive program guide with a program guide listing and program guide information and discloses that the interactive program guide provides the user with the ability to control the user television equipment 22 remotely. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; Almeroth, ¶155.)

### 3. Dependent Claim 3

***“The video-on-demand system of claim 2 wherein the viewer control selection comprises a video display control menu selection”***

*Ellis* discloses the subject matter in this claim for the same reasons as discussed above. (See *supra* Section VI.B.3.)

### 4. Dependent Claim 4

***“The video-on-demand system of claim 3 wherein the video display control menu further comprises pause, rewind, and fast forward”***

*Ellis* discloses this limitation as described above in claim 4. (See *supra* Section VI.B.4.) To the extent Sprint argues *Ellis* fails to disclose this limitation, *Humpleman* discloses this limitation. *Humpleman* discloses that “the video display control menu further comprises pause, rewind, and fast forward.” In providing the video content, *Humpleman* teaches the disclosed recorder’s controller generates a virtual control screen, which is placed on any screen for a user to control playback. (*Humpleman*, 55-63.) *Humpleman* discloses that this control screen signal is used to “graphically display control and command information to a user for a particular home device.” (*Humpleman*, 6:55-63.) *Humpleman* discloses the controller screen includes a menu (the “video display control menu”), which includes pause, rewind, and fast forward features. (*Humpleman*, 18:34-44, Figure 13 parts 1006 and 1044.) A POSITA would have been motivated to combine *Ellis* with *Humpleman*’s disclosure of the video display control menu, as *Ellis* discloses transferring an interactive program guide with a program guide listing and program guide

information and discloses that the interactive program guide provides the user with the ability to control the user television equipment 22 remotely. (*Ellis*, 2:37-46, 5:9-12, 14:3-12; *Almeroth*, ¶157.)

## **5. Dependent Claims 5-9**

*Ellis* discloses the subject matter in claims 5-9 for the same reasons discussed in Section VI.B.5-9.

## **6. Independent Claim 10**

Independent claim 10 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section VI.D.1; *Almeroth*, ¶159; *compare* '4907 patent, 6:29-27 with '4907 patent, 7:6-20.) Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 10, demonstrating claim 10 is rendered obvious for the same reasons as claim 1.

## **7. Dependent Claims 11-18**

Aside from depending from independent claim 10 rather than claim 1, dependent claims 11-18 are identical to dependent claims 2-9. (*Compare* '4907 patent, 6:48-7:5 with '4907 patent, 7:21-8:2.) Therefore, dependent claims 11-18 are unpatentable for the same reasons as set forth above for claims 2-9. (*See supra* Section VI.D.2-5.) Appendix A contains a chart that cross references the limitations of claims 2-9 to the limitations of claims 11-18, demonstrating that claims 11-18 are rendered obvious for the same reasons as claims 2-9.

## **8. Independent Claim 19**

Independent claim 19 is very similar to independent claim 1 and is unpatentable for the same reasons as set forth above for claim 1. (*See supra* Section VI.D.1; Almeroth, ¶¶161-162.) Each of the non-preamble limitations discussed above for claim 1 are included nearly identically in claim 19. (*Compare* '4907 patent, 6:29-47 *with* '4907 patent, 8:7-21.)

Claim 19 differs from claim 1 only in its preamble, which recites “[a] product comprising a processor-readable storage medium storing processor-executable instructions for performing a method for operating a video-on-demand system.” ('4907 patent, 8:3-6.) To the extent the preamble limits the claims, *Ellis* and *Humpleman* disclose the preamble for the same reasons set forth above in Section VI.D.1.a above and *Ellis* discloses the preamble for the same reasons set forth in Section VI.B.19. Appendix A contains a chart that cross references the limitations of claim 1 to the limitations of claim 19, and the disclosures in the prior art for each cross-referenced limitation, demonstrating claim 19 is rendered obvious for the same reasons as claim 1.

## **9. Dependent Claims 20-25**

Aside from depending from independent claim 19 rather than claim 1, dependent claims 20-25 are identical to dependent claims 2-6, and 9. (*Compare* '4907 patent, 6:48-64, 7:4-5 *with* '4907 patent, 8:22-40.) Therefore, dependent

claims 20-25 are unpatentable for the same reasons as set forth above for claims 2-6, and 9. (*See supra* Section VI.D.2-5.) Appendix A contains a chart that cross references the limitations of claims 2-6 and 9 to the limitations of claims 20-25, demonstrating claims 20-25 are rendered obvious for the same reasons as claims 2-6, and 9.

## **VII. MANDATORY NOTICES**

### **A. Real Party-in-Interest**

The real parties-in-interest are Charter Communications, Inc.; Charter Communications Holdings, LLC; Spectrum Management Holding Company, LLC; Charter Communications Operating, LLC; and Time Warner Cable, LLC.

### **B. Related Matters**

Sprint has asserted the '4907 patent in the following two pending litigations: (1) *Sprint Commc'ns Co. L.P. v. Charter Commc'ns Inc., Charter Commc'ns Holdings, LLC, Spectrum Management Holding Co., LLC, Charter Commc'ns Operating, LLC, and Time Warner Cable, LLC*, Case No. 1:18-cv-02033 (D. Del.); and (2) *Sprint Commc'ns Co. L.P. v. Cequel Commc'ns, LLC D/B/A Suddenlink Commc'ns, CSC Holding, LLC D/B/A Optimum-Cablevision, and Altice USA, Inc.*, Case No. 1:18-cv-01919-UNA (D. Del.).

Petitioner has contemporaneously filed two additional IPR petitions (IPR2019-1136 and IPR2019-1140) against the '4907 patent based on U.S. Patent No. 6,496,122 and *Humpleman*. Petitioner has also filed or will file three IPR

petitions (IPR2019-1135, IPR2019-1137, and IPR2019-1139) directed to U.S. Patent No. 6,757,907. The '4907 and '7907 patent were filed concurrently on Feb. 9, 2000. The '4907 patent is subject to a terminal disclaimer to the '7907 patent.

### C. Lead and Back-Up Counsel, and Service Information

Lead Counsel	Back-Up Counsel
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	Redwood Shores, CA 94065 Tel: (650) 801-5000 Fax: (650) 801-5100
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Petitioner consents to electronic service at the email addresses listed above.

### **VIII. CERTIFICATION UNDER 37 C.F.R. § 42.24(d)**

This petition complies with the requirements of 37 C.F.R. § 42.24. As calculated by the word count feature of Microsoft Word 2016, it contains 12,963 words, excluding the words contained in the following: Table of Contents, List of Exhibits, Mandatory Notices, Certification Under §42.24(d), and Certificate of Service.

### **IX. GROUNDS FOR STANDING**

Petitioner certifies the '4907 patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR of the '4907 patent challenging the claims on the grounds in this petition.

### **X. CONCLUSION**

Petitioner requests IPR and cancellation of claims 1-25 because they are unpatentable under 35 U.S.C. §§ 102 and/or 103 based on the foregoing grounds.

Respectfully submitted,

Dated: June 3, 2019

By: /s/ Deepa Acharya  
Deepa Acharya (Reg. No. 64,648)  
Quinn Emanuel Urquhart & Sullivan LLP

*Inter Partes* Review No. 2019-01138

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Communications, Inc.*



**CERTIFICATE OF SERVICE**

In accordance with 37 CFR § 42.105 , the undersigned certifies that the foregoing petition for *Inter Partes* Review, the associated Power of Attorney, and Exhibits were served on June 3, 2019, by Federal Express Standard Overnight at the following address of record for the subject patent.

Sprint  
General Counsel  
6391 Sprint Parkway  
KSOPHT0101-Z2100  
Overland Park, KS 66251-2100

Courtesy copies of the same documents were served on June 3, 2019 by Federal Express Standard Overnight at the following address of record for litigation counsel:

B. Trent Webb  
Shook Hardy & Bacon L.L.P.  
2555 Grand Blvd.  
Kansas City, Missouri 64108

Dated: June 3, 2019

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**APPENDIX A**

<b>Cross-Referenced Limitations in Claims 1 and 10</b>	
<b>Claim 1</b>	<b>Claim 10</b>
1[P]	10[P]
1[A]	10[D]
1[B]	10[A], 10[B]
1[C]	10[C], 10[D]
<b>Cross-Referenced Limitations in Claims 2-9 and 11-18</b>	
<b>Claim</b>	<b>Claim</b>
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18
<b>Cross-Referenced Limitations in Claims 1 and 19</b>	
<b>Claim 1</b>	<b>Claim 19</b>
1[P]	19[P]
1[A]	19[D]
1[B]	19[A], 19[B]
1[C]	19[C], 19[D]
<b>Cross-Referenced Limitations in Claims 2-6, 9 and 20-25</b>	
<b>Claim</b>	<b>Claim</b>
2	20
3	21
4	22
5	23
6	24
9	25