Filed on behalf of Pinterest, Inc.

Filed: July 11, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PINTEREST, INC.
Petitioner

v.

OPENTV, INC.,
Patent Owner.

Case No. IPR2025-01184
U.S. Patent No. 7,055,169

PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 7,055,169

TABLE OF CONTENTS

LIST OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 7,055,169 (the "'169 Patent")
1002	File History of U.S. Patent No. 7,055,169
1003	U.S. Provisional Application No. 60/373,883
1004	Declaration of Expert Immanuel Freedman, Ph.D.
1005	Curriculum Vitae of Immanuel Freedman, Ph.D.
1006	U.S. Patent No. 6,141,018 ("Beri")
1007	U.S. Patent No. 7,120,871 ("Harrington")
1008	Tom Armstrong, *Designing and Using ActiveX Controls* (pt. 1)
1009	Tom Armstrong, *Designing and Using ActiveX Controls* (pt. 2)
1010	J. Kunze, Encoding Dublin Core Metadata in HTML ("Kunze")
1011	U.S. Patent No. 7,069,571 ("Del Sesto")
1012	Declaration of Sylvia Hall-Ellis, Ph.D.
1013	*NFL v. OpenTV* PTAB Institution Decision
1014	Library of Congress Entry for Armstrong

I. INTRODUCTION

Pinterest, Inc. ("Petitioner") petitions the United States Patent and Trademark Office (the "Office") to institute an *inter partes* review of Claims 1, 2, 3, 11, 12, 22, and 23 (the "Challenged Claims") of U.S. Patent No. 7,055,169 ("the '169 Patent"). The '169 Patent is assigned to OpenTV, Inc. ("Patent Owner" or "PO"). The '169 Patent is directed to methods and systems for administrating interactive television services, but the Challenged Claims are not so limited, and rendered obvious by the prior art. *See* EX1001, Claims 1, 2, 3, 11, 12, 22, and 23. For each Challenged Claim, this Petition presents at least two non-cumulative grounds of invalidity based on references that were not considered by the Office during prosecution of the application that issued as the '169 Patent. Both grounds of invalidity for each claim are at least reasonably likely to prevail, and this Petition should be granted on all grounds.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(B)

A. Real Party-In-Interest

The real party in interest under 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.8(b)(1) is Petitioner, Pinterest, Inc.

B. Related Matters

PO has asserted the '169 Patent against Petitioner in *OpenTV, Inc. v. Pinterest, Inc.,* No. 1:24-cv-01301-CFC (D. Del.), filed on February 18, 2025. PO previously asserted the '169 Patent in *OpenTV, Inc. v. NFL Enterprises LLC*, No.

2:17-cv-00031 (E.D. Tex.). NFL Enterprises filed a petition for *inter partes review* on January 11, 2018. *See* EX1013. The petition was instituted on June 13, 2018. *See* EX1013. On July 13, 2018, the parties settled.

PO also asserted the '169 Patent in other litigation: *OpenTV v. Netflix*, Inc., No. 3-14-cv-01525 (N.D. Cal); *OpenTV et al v. Netflix, Inc.*, No. 3-14-cv-01723 (N.D. Cal); *OpenTV, Inc. et al v. Apple Inc*, No. 5-15-cv-02008 (N.D. Cal); *OpenTV, Inc. et al v. Verizon Communications, Inc. et al*, No. 6-15-cv-00951 (E.D. Tex) which were voluntarily settled or dismissed. Apple Inc. filed a petition for *inter partes review* on May 4, 2016; the parties settled, terminating the case before a decision by the Patent Trial and Appeal Board.

C. Lead and Back-Up Counsel

Pursuant to 37 C.F.R. § 42.8(b)(3) and 37 C.F.R. § 42.10(a), Petitioner appoints following:

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D. Service Information

The following email should be used for service and all communications: PH-Pinterest-OpenTV-IPR@paulhastings.com.

III. REQUIREMENTS FOR INTER PARTES REVIEW

This Petition complies with all statutory requirements under the AIA and 37 C.F.R. § § 42.104, 42.105, and 42.15, and should be accorded a filing date as the date of filing of this Petition pursuant to 37 C.F.R. § 42.106.

A. Fees

The Director is authorized to charge the fee specified by 37 C.F.R. § 42.15(a) to Deposit Account No. 50-2613.

B. Standing

Petitioner certifies that (i) the '169 Patent is available for IPR and (ii) Petitioner is not barred or estopped from requesting IPR of any claim of the '169 Patent.

IV. SUMMARY OF CHALLENGES

Petitioner requests that Claims 1-3, 11-12, and 22-23 be cancelled based on five prior art references: U.S. Patent 6,141,018 ("Beri"), U.S. Patent 7,120,871 ("Harrington"), Tom Armstrong, *Designing and Using ActiveX Controls* (1st ed. 1997) ("Armstrong"), J. Kunze's "Encoding Dublin Core Metadata in HTML" memorandum ("Kunze"), and U.S. Patent 7,069,571 ("Del Sesto").

The chart below identifies at least two grounds per challenged Claim; neither ground is redundant for each Claim, as explained below.[1] *See infra*, Sec. VIII.

Ground	Claims	Statute	Prior Art
1	1, 2, 22, 23	35 U.S.C. § 103	Beri
2	3, 22		Beri, Harrington

[1] For efficiency, this Petition presents the same prior art grounds for Claims 1, 2, 22, and 23 that the Board considered and instituted in IPR2018-00463. EX1013. The Petition additionally challenges dependent Claims 3, 11, and 12 based on Kunze and Del Sesto and combined with the same prior art previously considered.

3	11		Beri, Kunze
4	12		Beri, Del Sesto
5	1, 2, 23		Armstrong
6	3, 22		Armstrong, Harrington
7	11		Armstrong, Kunze
8	12		Armstrong, Del Sesto

V. THE CHALLENGED PATENT

A. The State of the Art at the Time of the Filing of the '169 Patent

The '169 Patent claims priority to a provisional application filed on April 19, 2002. All prior art addressed in this Petition predates April 19, 2002.

The Challenged Claims purportedly cover rendering web pages using "prerequisite directives." *See* EX1001, 21:8-37; Claim 1. Rendering using "prerequisite directives" was known by a person of ordinary skill in the art ("POSITA") before June 2001. *See infra* Sec. V.C.

By April 2002, the operation of web pages and the Internet was well understood by a POSITA. EX1004 ¶29. The World Wide Web had been available for over a decade. *Id.* At that time a POSITA would understand that web pages were, at a high level, (1) downloaded from a server over the Internet, (2) rendered by a user's computer, and (3) displayed to a user. *Id.*

Downloading a web page is the process in which a web browser retrieves content from the Internet. *Id.*, ¶30. A URL identifies a server on the Internet where the content is located, where the user's computer can download the content. *Id.* The downloaded content comprises of directions that instruct the computer how to render the web page and multiple "resources," that can include text, images, video, and graphics. *Id.* Once the content has been downloaded, a browser will render the page, displaying the page to the user. *Id.*; EX1006, 1:11-48.

Rendering a web page is the process that a web browser uses to turn code and downloaded content from the Internet into a visually displayed page for a user. EX1004 ¶31. This process includes retrieving text, images, styles, and scripts; processing HTML, CSS, and JavaScript code to determine the style, structure, and behavior of the web page; and displaying the content on the screen accordingly. *Id.* HTML (HyperText Markup Language) code may define content on a web page referring to coding an image to be aligned with a certain size border on the web page. *Id.* Rendering software in the web browser will read the code and place the image at the coded location with a certain size border and may display it to the user. *Id.*

"Progressive rendering" refers to a browser displaying partially constructed content as soon as possible. *Id.,* ¶32. Instead of waiting for particular content to be fully downloaded and rendered before displaying, a browser will render and display as it is downloaded and processed. *Id*. Progressive rendering has been around since

the mid-90's, as a performance strategy for web browsers. *Id.* Progressive rendering was the default method for most web browsers at the time of the '169 Patent's inception and today. *Id.* Progressive rendering enables progressive image formats like interlaced GIFs and progressive JPEGs to load and improve in clarity as a web page renders, providing a user an earlier preview. *Id.* Displaying a rendered web page is making the rendered web page available to a display viewable by the user. *Id.*

B. Overview of the '169 Patent

The '169 Patent is entitled "Supporting Common Interactive Television Functionality Through Presentation Engine Syntax." EX1001, Cover. It was filed on April 21, 2003, claims priority to Provisional Application 60/373,883, which was filed on April 19, 2002, and issued on May 30, 2006. *Id.* The claims of the '169 Patent recite methods, devices, and computer readable mediums for handling the presentation of audio, video, and/or graphics. *See id.*, Claims 1, 2, 22, and 23. While the title and portions of the specification suggest that the '169 Patent is directed to "Interactive Television Functionality," the lack of any limitation relating to interactive television in certain independent claims, such as claims 1 and 23, show that the '169 Patent's scope is not so limited. *See id.*, Claims 1 and 23. At most, the '169 Patent briefly references interactive television in claim 3 ("wherein said one or more directives are received by a proxy server *in an interactive television system*")

and in the preamble of claim 22. The '169 Patent also considers metadata specification (claim 11) and expiration handling (claim 12) for the presentation of audio, video, and/or graphics.

The limitations in Claim 1 define a method for handling a set of resources. *See* EX1001, 52:8-22; EX1004 ¶36. An example of a resource is a media file that contains audio, video, and/or graphics. *Id.;* EX1001, 21:8-20 (identifying a file called "background.mpg," *i.e.* a "background" file, as a *resource*). The '169 Patent explains that resources utilize Internet protocols: "HTML pages [(i.e., web pages)] may use 'http:' URLs to load **resources** from the carousel." EX1004 ¶36; EX1001, 24:63-64 (emphasis added). A "carousel" is a term the '169 Patent uses to refer to a collection of data objects being transmitted to the computer over a network from a broadcaster in a cyclical or repeating format. EX1004 ¶36, EX1001, 1:43-2:15.

The resources are organized into a *presentation* for a viewer. EX1004 ¶37. A presentation could be a web page represented by HTML code in an "HTML document." *Id.; see also, e.g.*, EX1001, 11:49-61 (describing a presentation consisting of content from cnn.com).

Claim 1 requires use of *directives* that are *indicative* of the presentation. EX1004 ¶38. The '169 Patent explains that "declarations or other statements used in the creation and/or manipulation of resources and content in this document may

be generally referred to as 'directives.'" EX1004 ¶38; EX1001, 47:7-10. The specification provides examples of directives in an HTML Document:

```
<IMG height=300 width=400 style="position:absolute; left:200px;
        top:80px" src="broadcast://current ">
<OBJECT height=300 width=400 data="broadcast://current
        "></OBJECT>
```

EX1001, 22:30-49. In the example above, the code consists of directives that are indicative of where an image is located ("broadcast://current") and how it should be positioned and sized on the user's display. EX1004 ¶38.

Claim 1 specifies that if a particular resource is designated as a *prerequisite* by one of the received directives, then presentation of the audio, video, or graphics will be *prohibited* until the prerequisite resource is acquired. EX1001, Claim 1; EX1004 ¶39. If there are no resources designated as prerequisite, then the presentation will be *initiated*. *Id.*

One example identified by the '169 Patent of a *prerequisite directive* is:

```
<META name="prerequisite" content="http://ww-
  w.cnn.com/background.mpg">
```

EX1001, 21:18-20; EX1004 ¶40. This example directive is written in HTML (*see id.*, 20:66-21:3) and is identified by the name/value pair: name="prerequisite." EX1004 ¶40. The prerequisite resource is the **background.mpg** file available for download at the location designated by the URL. *Id.* "META" is an HTML tag generally used to provide metadata to the web browser. *Id.* Here, the "META"

HTML tag provides the web browser with an instruction regarding the rendering of the web page. *Id.* By including the "prerequisite" parameter in the HTML code, the web browser prohibits the presentation until the background.mpg file is acquired. EX1004 ¶40; EX1001, 21:8-20.

Furthermore, the resources are labeled as "prerequisites" using the META tag in the HTML code; the '169 Patent discloses three different options for rendering web pages. EX1001, 21:8-52; EX1004 ¶41. The first option is the "progressive rendering policy," wherein the web page is rendered immediately. EX1001, 21:32-36; EX1004 ¶41. Only those resources labeled as prerequisites, if any, cause the display of the web page to be prohibited until the prerequisites are acquired. EX1001, 21:32-36; EX1004 ¶41. The second option is the "layoutComplete rendering policy," wherein display of the web page is prohibited until information determining the complete on-screen layout is acquired, in addition to other prerequisites, if any. EX1001, 21:37-44; EX1004 ¶41. The third option is the "loadComplete rendering policy," wherein the display of the web page is prohibited until all resources are acquired, meaning that all resources are prerequisites. EX1001, 21:45-52; EX1004 ¶41.

The '169 Patent discloses dependent claims involving adjacent technologies, such as <META> tags and interactive television systems. EX1004 ¶42. These dependent claims pertain to interoperability and applicability. *Id.*

C. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is found in a person with a bachelor's degree in computer science, computer engineering, a related science such as physics, or the equivalent, plus approximately two years of experience in the field of computer engineering or software development, or an equivalent amount of relevant work and/or research experience. EX1004 ¶23.

D. Summary of the Prosecution History of the '169 Patent

The '169 Patent issued from U.S. Patent App. 10/419,621 (the "'621 Application"). The '621 Application was filed on April 21, 2003, claiming priority to Provisional Application 60/373,883. *See* EX1001*; see also* EX1003, 2. On October 15, 2004, the Examiner issued a non-final office action rejecting all pending claims. *See* EX1002*,* 278-294. On October 15, 2004, the Examiner found claims 1-7, 11-16, and 20-23 to be anticipated by U.S. Patent Pub. No. 2002/0010798 A1 ("Ben") and claims 8-10 and 17-19 to be obvious over Ben. *Id.* The Examiner also noted U.S. Patent Pub. Nos. 2002/0194219 A1 ("Bradley") and 2002/0088011 A1 ("Lamkin") were prior art made of record and not relied upon but considered pertinent to applicant's disclosure because both disclosed systems related to content deliveries and content attributes. *Id.*

On January 21, 2005, Applicant responded to the Office Action by amending Claims 1-4, 13-14, and 21-22, and by arguing against the rejection. *Id.,* 298-302.

Applicant distinguished Ben by alleging Ben did not disclose various limitations. *Id.*, 303-306.

On June 29, 2005, the Examiner withdrew the rejections based on Ben and issued a Notice of Allowability for all the pending claims, reasoning that Ben failed to teach certain steps of the claims. *Id.*, 317-318. On July 14, 2005, a Supplemental Notice of Allowability along with an Examiner's Amendment issued, amending Claim 23 to be compliant with 35 U.S.C. § 101. *Id.*, 324. On November 28, 2005, another Supplemental Notice of Allowability issued, mimicking the Reasons for Allowance from June 29, 2005 (*id.*, 332), and the '169 Patent issued on May 30, 2006.

VI. CLAIM CONSTRUCTION

The Board construes the claims "using the claim construction standard that would be used" in district courts. 37 C.F.R. § 42.100(b). This Petition establishes the prior art meets each claim limitation under any reasonable construction.[2] Therefore, no express construction is necessary.

[2] Petitioner reserves the right to argue alternative constructions in other proceedings, including that the claims are indefinite where such a defense is available.

VII. THE CHALLENGED CLAIMS OF THE '169 PATENT ARE UNPATENTABLE

A. Ground 1: Beri Renders Obvious Claims 1, 2, 22 and 23

1. Summary of Beri

Beri, a United States Patent entitled "Method and System for Displaying Hypertext Documents with Visual Effects," was filed on March 12, 1997, and issued on October 31, 2000 (*see* EX1006, Cover), and qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(a), (b) and (e).

Beri explains the structure and operation of the Internet and how "resources," such as images, are transferred over the Internet to a user's computer:

> The Internet comprises a vast number of computers interconnected so that information can be exchanged among the computers. Various protocol and other interface standards have been developed for the Internet so that each computer will understand information of the other computers.
>
> . . .
>
> The Internet facilitates information exchange between servers and clients that are located throughout the World. Each computer on the Internet has a unique address (e.g., "acme.com"). When a client wishes to access a **resource (e.g., document)**, the client specifies a Uniform Resource Locator ("URL") that uniquely identifies the computer on which the server executes and the resource. An example of a URL is "http://acme.com/page1." In this example, the server is identified by "acme.com" and the **resource** is identified by "**page1**."

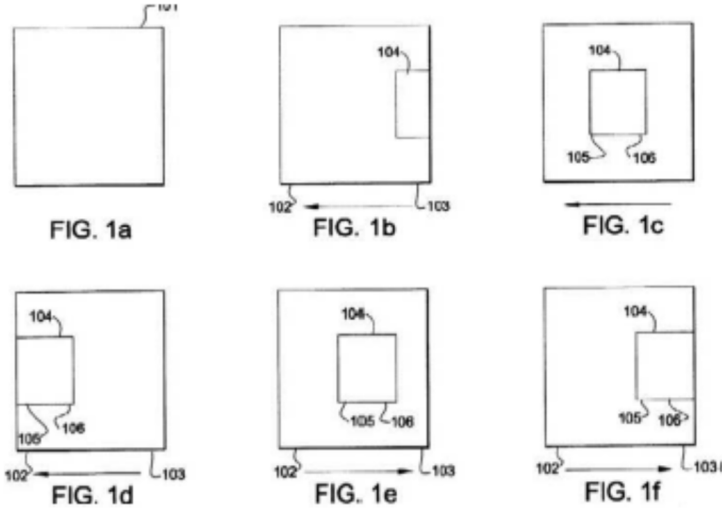
EX1006, 1:11-36 (emphases added); EX1004 ¶46.

Beri explains that prior art software developed by Microsoft allowed for scrolling text to move across a webpage:

> Microsoft Corporation has defined various extension to HTML. One such extension is known as a <marquee> tag. The <marquee> tag indicates that certain text is to be scrolled within a marquee window on a Web page. The attributes of the <marquee> tag specify the size of the marquee window and the direction and speed of scrolling. The <marquee> tag thus provides a visual effect that is similar to the electronic marquees found on some buildings that display the headline news.

EX1006, 2:1-9; EX1004 ¶47.

Beri describes a method and system for displaying resources transferred over the Internet, like an "image in an animated marquee." *Id.* at 2:40-53. Figure 1 shows frames of an arbitrary image over time as it "bounce[s] off each border of the marquee window in which it is displayed":



EX1006, Figure 1, 2:42-44, 2:56-57; EX1004 ¶48.

To enable this functionality of scrolling images on a webpage, Beri discloses use of an ActiveX object to control the animation:

> In one embodiment, the animated marquee is controlled by an ActiveX object (i.e., marquee object) that is specified by an <object> tag an HTML document. The <object> tag identifies the image and specifies various parameters to control the animation. The marquee object exposes various methods for setting the parameters and issues events to notify a Web browser of various conditions.

EX1006, 2:46-53; *see also id.* at 5:13-62 (listing tags and explaining implementation); EX1004 ¶49. ActiveX provides additional capabilities for Internet web browsers. EX1004 ¶49.

Beri discloses parameters, or attributes, of the ActiveX object which control the drawing of the images in the animation. *See, e.g.,* EX1006, 5:13-62 (disclosing various parameters), 3:48-50 ("the parameters can be set to indicate whether the URL is to be drawn immediately or progressively"); 5:57 (disclosing a DrawImmediately flag whose purpose is to "indicat[e] to progressively render the image"); EX1004 ¶50.

Beri discloses that the animation could consist of one or multiple moving images. EX1004 ¶51; EX1006, 3:52-54 ("The animated marquee can also display a sequence of images rather than just one image. Each image is identified by a

URL."). When displaying an animation with multiple images, the images can be set to automatically "follow another image in a continuous manner" or "the user can click on the marquee window to select the next image." EX1006, 3:54-58; 4:18-21, 4:33-35; EX1004 ¶51.

2. Motivation to Combine

Beri discloses a computer system for displaying an image of a hypertext document in an animated marquee. EX1006, Abstract; *see supra* VII.A.1 (summary of Beri). This Petition relies on a combination of embodiments represented by Figures 4,5, 6, 7, 8, 10, 11, and 12. *See* EX1006. Figure 4 depicts the general computer system as taught by Beri. *Id.;* EX1004, ¶52. Figure 5 illustrates the relationship between components to generate Beri's animated marquee. *Id.* Figures 6-12 depict Beri's teachings for timer events, scroll styles, displays, and URL handling, each of which work together in Beri's system. *Id.*

It would have been obvious to a POSITA to combine the multiple embodiments for reasons such as cost, size, power consumption, or performance. EX1004 ¶53. A developer aiming to enable marquee functionality of Beri would need software components of a marquee object, an HTML viewer, and a computing system to execute them, combining the embodiments. *Id.*

Beri teaches the use of ActiveX controls, which are reusable software components developed by Microsoft that can be embedded into applications to

provide interactive features for animation. *Id.,* ¶54*;* EX1006, 2:22-33. A POSITA would include ActiveX control functionality across embodiments given its popularity in Windows-based applications. EX1004 ¶54. Beri, by incorporating ActiveX by reference, reinforces that ActiveX controls were a mainstream technical reference, where integrating it across embodiments was standard. EX1006, 2:14-19; EX1004 ¶54. Thus, the different embodiments have the same goal of delivering an animated marquee. EX1004 ¶55.

3. Reasonable Expectation of Success

A POSITA would have had a reasonable expectation of success combining the embodiments of Beri. EX1004 ¶56.

A POSITA would recognize that the teachings of Beri relied upon in this Ground represent different aspects of the inventions that all operate on the same principle, and work to disclose different aspects relying on the same principles. EX1004 ¶57. The aspect of Figure 4 descriptions relied on would operate on the same principles, serve the same purpose, and maintain the same relevant characteristics when applied to Figure 5. *Id.*

Since ActiveX was a well-known and documented technology, a POSITA would have a reasonable expectation of success in implementing it. *Id.,* ¶58; EX1006, 2:14-19 (incorporating ActiveX controls, a known interface standard, by reference given their applicability to HTML).

A POSITA would have been able to implement the obviousness modifications in this ground without undue difficulty. EX1004 ¶59.

4. Beri renders obvious Claim 1

a. 1[P]: "A method comprising"

Beri discloses this limitation. EX1004 ¶60.

Beri discloses **a method** for "generating [an] animated marquee via a marquee object," as shown in Figures 5-12. *See also* EX1006, 4:65-5:39. The marquee object may be "identified by an <object> tag in an HTML document," like HTML document 504 shown in Figure 5. *Id.*; EX1004 ¶62.

Beri's Figure 4 illustrates "a computer system for practicing" Beri's method, as shown below:

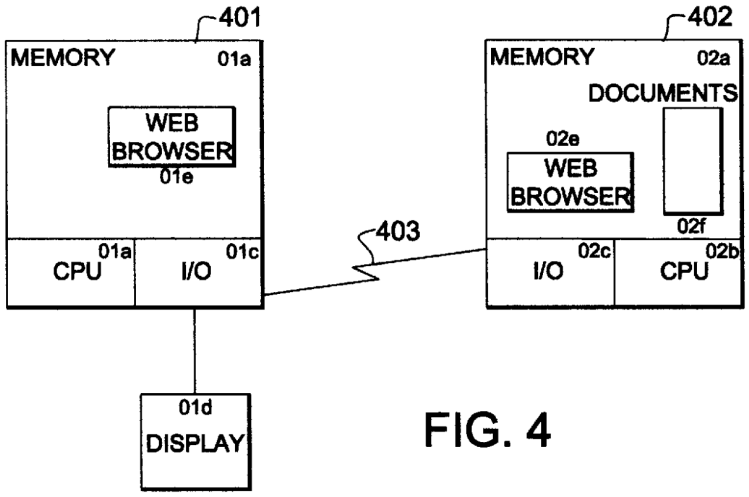


FIG. 4

EX1006, 4:65-5:12; EX1004¶63.

b. 1[A]: "receiving one or more directives, wherein said directives are indicative of an audio, video and/or graphic presentation which requires a set of resources;"

Beri discloses this limitation. EX1004 ¶64.

Beri also discloses **an audio, video, and/or graphic presentation** in the form of an "animated image" or "animated marquee." EX1004 ¶66. Beri's animated marquee is an "animated image" that is "display[ed]" "in the marquee window," which is a portion of a web page. *Id.;* EX1006, 5:34-36; *see also* 5:13-34, 3:60-4:21 ("FIGS. 1A-1F illustrate an animated marquee with the bounce visual effect."), 4:22-36 ("FIGS. 2A-2F illustrate an animated marquee with a circular visual effect."), 4:37-64 ("FIGS. 3A-3F illustrate an animated marquee with the bounce visual effect when the image is larger in the direction of scroll than the marquee window."); 2:40-44. The display of the animated image is a **video presentation and/or a graphic presentation** to a user viewing the web page. EX1004 ¶66.

The "animated image" or "animated marquee" **requires** one or more images (**a set of resources**). *Id.,* ¶67; EX1006, 5:13-63, 4:33-36, 3:20-27, 3:52-54. Each image is referred to using a URL pointing directly to an image file online, where each URL points to a unique image. *Id.*

Beri teaches **receiving** one or more <object> tags in HTML documents (**one or more directives**) that **are indicative of** the "animated image" or "animated marquee" (**audio, video, and/or graphic presentation**). EX1006, 5:2-3 (describing

how the ActiveX control references additional documents that contain the visual content to be displayed and animated); 5:13-39; Fig. 4 (illustrating a web browser receiving and displaying hypertext documents); EX1004 ¶68. Beri's "animated marquee is implemented as an ActiveX object (i.e., a marquee object) identified by an <object> tag in an HTML document," meaning that the contents of the <object> tag(s) defines (i.e., is **indicative of**) the "animated image." EX1006,5:13-39; EX1004 ¶68. Indeed, <object> tag(s) have "parameters" that define the "attributes" of the marquee object, and consequently, the animated marquee. *Id.* A Web browser **receiv[es]** an HTML document containing an <object> tag when it requests it from the Web server. EX1006, 4:65-5:13; EX1004¶68. A Web browser will receive an HTML document with <object> tags and read the document and implement what its tags indicate for animated marquees. EX1004 ¶68.

Beri explains this with Figure 5. EX1004 ¶69. Here, the animated marquee is embedded in an HTML document using the <object> tag. *Id.;* EX1006, 5:17-60. The marquee is an ActiveX control instantiated by the HTML viewer. *Id.* When a web browser launches the HTML viewer to render an HTML document, upon detecting a marquee object, the HTML viewer will instantiate the marquee. *Id.* The marquee's object attributes are based on parameters specified in the <object> tag; if it points to another HTML document, it will reuse the HTML viewer to generate the image. *Id.* The image is then animated and displayed in the marquee window. *Id.*

Alternatively, the web page is also **an audio, video, and/or graphic presentation**, because it includes "animated image" or "animated marquee." EX1004 ¶70.

c. 1[B]: "determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition [sic] of a subset of said set of resources is a prerequisite for initiating the presentation;"

Beri discloses this limitation. EX1004 ¶71.

<object> tag(s) have "parameters" that define the "attributes" of the marquee object andthe animated marquee. EX1006, 5:13-39; EX1004 ¶73. The attributes describe the animation of the marquee. EX1006, 5:13-39; EX1004¶73. Beri's **DrawImmediately** is one such parameter, shown below:

ATTRIBUTE	DESCRPTION
ScrollStyleX	Horizontal scroll style: "circular" or "bounce."
ScrollStyleY	Vertical scroll style: "circular" or "bounce."
ScrollDelay	Time in milliseconds between each movement of the image in the marquee window.
LoopsX	Number of times the image scrolls horizontally if ScrollStyleX is "circular," or number of times the image bounces horizontally if ScrollStyleX is "bounce."
LoopsY	Number of times the image scrolls vertically if ScrollStyleY is "circular," or number of times the image bounces vertically if ScrollStyleY is "bounce."
ScrollPixelsX	Number of pixels to move the image horizontally in the marquee window each ScrollDelay.
ScrollPixelsY	Number of pixels to move the image vertically in the marquee window each ScrollDelay.
URL	URL of the image.
DrawImmediately	Flag indicating to progressiveiy render the image.
Whitespace	Amount of white space between images.
PageFlippingOn	If multiple URLs; indicates that the next image is to be displayed when the marquee window receives a click.
Zoom	Percentage of the original size of the image.
WidthOffPage	Width in pixels of the image.

EX1006, 5:34-61; EX1004 ¶73.

When set to disabled or set to 0, DrawImmediately is **a prerequisite directive which indicates that acciuisition [sic] of a subset of said set of resources is a prerequisite for initiating the presentation**. EX1004 ¶74. **DrawImmediately** prohibits the web browser from displaying the web page until after all of the **resources** (the one or more images) in the marquee are downloaded. *Id.*; EX1006, 5:57, 6:42-44, 3:48-50, 11:24-26. If **DrawImmediately** is disabled, the browser does not immediately load and render the entire webpage. EX1004 ¶74. Beri's **DrawImmediately** directive controls the drawing of the image marquee and can be set to instruct the computer to display the image marquee after the images have been completely loaded. *Id.;* EX1006, 2:40-53, 3:48-50, 6:55-57.

If **DrawImmediately** is enabled, or set to 1, it is *not* a **prerequisite directive** since the resources are not designated as prerequisites; disabling DrawImmediately causes the web browser to initiate display of the marquee progressively before finishing downloading the images from the Internet. EX1004 ¶75.

Beri discloses a method "wherein portions of the image are displayed immediately as the image is generated in accordance with the page description language." EX1006, 11:24-26; EX1004 ¶76. Thus, what has been generated will be displayed and portions of the image are not yet generated because they are not yet downloaded or formatted, they too are not yet displayed. *See* EX1006, 3:48-50.

When the DrawImmediately directive is disabled, it has the effect of designating the resources in the marquee as prerequisites because they must be downloaded before the presentation initiates:

> Slide Image From Bottom Only When Finished Formatting and Rendering
> <PARAM NAME="LoopsY" VALUE=0>
> <PARAM NAME="ScrollPixelsX" VALUE=0>
> <PARAM NAME="ScrollPixelsY" VALUE=-100>
> <PARAM NAME="DrawImmediately" VALUE=0>

EX1006, 8:25-30; EX1004 ¶77. A POSITA would understand this code to indicate that the presentation will not be initiated until all resources are loaded, because DrawImmediately is disabled. EX1004 ¶77.

All the **resources** (the one or more images) of the "animated image" or "animated marquee" is a **subset of said set of resources is a prerequisite for initiating the presentation**. *Id.,* ¶78. Beri's animated marquee may comprise one or more URLs, each of which points to a single image. EX1006, 5:56; 6:46-57; EX1004 ¶78. When DrawImmediately is disabled, all of the one or more images pointed to by the URL attribute constitute the **subset of said set of resources**. *Id.* Upon disabling DrawImmediately, Beri's system treats the image URLs as potential resources because only some are actually drawn. *Id.*

The '169 Patent's **subset of said set of resources** means some or all of said set of resources. *Id.*, ¶79. In the preferred embodiment of a "prerequisite directive",

the '169 Patent teaches all as the subset. *Id.*; EX1001, 21:8-20. Here, "no rendering for the page may occur prior to acquiring 'background.mpg' <META name='prerequisite' content='http://www.cnn.com/background.mpg'>", implying that all of background.mpg must be acquired to initiate the presentation. *Id.* "All" is consistent with the "prerequisite directive" in the '169 Patent, which is that "[w]hen rendering graphics as they are downloaded, it sometimes makes sense to delay displaying to the viewer ***until at least a*** subset of the resources, which have been deemed as essential by the content creator, have been downloaded." *Id.* "Essential" resources include the possibility of "all" resources in that case. *Id.*

The specification suggests that any number of resources may be labeled as prerequisites and contemplates an embodiment in which ***all*** of the resources are labeled "prerequisite resources," where the subset of prerequisite resources would be the same as the set of all resources:

> The loadComplete rendering policy indicates that the graphics may not be displayed until all resources that will be used for rendering the display have been downloaded. The only difference between the loadComplete rendering policy and labeling all resources as prerequisites, is that in the first case the OnLoad event will have been delivered to the appropriate handler, if any, prior to rendering, and hence may affect the rendered view.

EX1001, 21:45-52; EX1004 ¶80. The discussion above contemplates "labeling all resources as prerequisites," and indicates that doing so would be equivalent to the

loadComplete rendering policy (except for the timing of when the OnLoad event is triggered). *Id.* The specification teaches that the META tag mechanism can be used to label all resources as prerequisites as an alternative to the loadComplete rendering policy, differing only when events are triggered. *Id.* A POSITA would understand that both are options for a content author who wants all resources to be prerequisites, given the similar teleological functionality. *Id.*

Under the interpretation that the web page is a **presentation**, the HTML document and/or all objects in the HTML document correspond to the **one or more directives**, and all the resources in the HTML document and/or all objects are **a set of resources**, the one or more images and/or ActiveX marquee constitutes **a subset of the resources** on the entire web page. EX1004 ¶81. A POSITA would understand that the ActiveX marquee contemplated by Beri is only one possible part of a web page, and that web pages contain other resources like images or text, outside of the ActiveX object marquee. *Id.* The ActiveX marquee may be considered a subset of the resources on a web page because it may be one of the components that are referenced, loaded, and executed as part of fully rendering a web page. *Id.* A POSITA would understand that the term "resource" means any external file, object, script, image, or content that a web page pulls and utilizes. *Id.* Beri explains, "Web pages are usually defined to include graphical components" like a "bitmap" within a web page. *Id.*; EX1006, 1:60-67. A POSITA would understand this disclosure to

refer to resources that may be additional to the ActiveX object Beri uses to animate the marquee and that the default marquee implementation is set to progressive rendering. EX1004 ¶81. If DrawImmediately is disabled, and if the web page comprises images additional to the marquee object, the resources additional to the marquee object will be treated as prerequisites. *Id.*

Beri **determine[es] whether** HTML document and/or one or more <object> tags in an HTML document (**said one or more directives**) **includes a prerequisite directive** by determining whether DrawImmediately is enabled or disabled. *Id.*, ¶81. Beri's web browser has software designed to process the directives contained in the ActiveX object that Beri uses to animate the marquee. *Id.*; EX1006, 4:65-5:13, 2:10-53. The ActiveX object handles animation by notifying a browser when an event like the clicking of a mouse occurs. EX1006, 2:24-26; EX1004 ¶82. Potential responses include the browser executing a script or updating the object's parameters. EX1006, 2:26-30; EX1004 ¶82. The browser processes events and responds based upon directives in the ActiveX object. EX1004 ¶82.

To the extent PO argues that DrawImmediately is not a prerequisite directive because prerequisite resources are indicated by the default value, it would be obvious to implement the inverse scheme where required resources are designated by setting a flag, for example, named "DrawDelayed", to be 1 or enabled, and non-prerequisite resources designated by a default setting of DrawDelayed to be 0 or disabled.

EX1004 ¶83; see *also, e.g.*, EX1006, 2:1-33 (explaining flexible HTML framework), 9:55-60 (explaining other embodiments are apparent to a POSITA). By setting a delay, the web browser is instructed to not display what is generated until after an allotted time. EX1004 ¶83. The web browser generates the image in full while the DrawDelayed prerequisite directive is active. *Id.*

d. 1[C]: "initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and"

Beri discloses this limitation. EX1004 ¶84.

Beri discloses *initiating said presentation. Id.*; ¶86. Beri discloses that the presentation is controlled, including being initiated, by a web browser that uses an ActiveX object that controls how the animation is generated. EX1006, 5:13-37; EX1004 ¶86. Since the web browser upon encountering the object will pass the directives to the HTML viewer, the marquee object will be created and configured. EX1004 ¶86. This acts as the moment of instantiation because it provides the attributes which loads the images to animate them. *Id.*

Beri discloses *in response to determining the one or more directives do not include said prerequisite directive*. *Id.*, ¶87. If one or more directives do not include a prerequisite directive (i.e., the DrawImmediately feature is enabled or set to 1), Beri teaches that the web browser will determine that no prerequisite directive exists, and presentation of the animation will be "immediately" *initiated* before the images

have been downloaded. EX1006, 3:48-50, 5:13-39; EX1004 ¶87; *see supra* Sec. VII.A.4.c. Disabling DrawImmediately initiates the presentation without regard to whether other resources have been acquired or conditions have been satisfied because disabling it means the presentation does not need to account for other conditions. EX1004 ¶87. The presence of DrawImmediately effectively overrides prerequisite logic that would otherwise delay the start of rendering. *Id.*

e. [1D]: "prohibiting initiation of said presentation until said subset of resources are acquired, in response to determining the one or more directives include said prerequisite directive."

Beri discloses this limitation. EX1004 ¶88.

Beri discloses **prohibiting initiation of said presentation**. EX1004 ¶90. Beri discloses that the presentation is controlled by a web browser that uses an ActiveX object to specify directives that control how the animation is generated. EX1006, 2:13-37; EX1004 ¶90. Beri teaches the **prohibition of initiation of said presentation** because the animation would otherwise initiate in the web browser without the ActiveX control. EX1004 ¶90. Only once the image(s) is (are) acquired will the marquee object be rendered. *Id.*

Beri discloses that if the one or more directives **include a prerequisite directive**, then presentation of the web page will be **prohibited until the subset of resources are acquired**. *Id.,* ¶91. If the DrawImmediately directive is disabled or set to 0, the presentation will be prohibited until the subset of images are

downloaded. EX1006, 3:48-50, 6:42-44, 5:13-62; EX1004 ¶91; *see supra* Secs. VII.A.4.c-d.

5. Beri renders obvious Claim 2: "The method of claim 1, wherein said prerequisite directive comprises one or more directives selected from the group consisting of: a markup language, a scripting language, and a style sheet."

Beri renders obvious this claim. EX1004 ¶92.

Beri discloses that the *prerequisite directive* can be written with *a markup language, a scripting language,* or *a style sheet*. EX1004 ¶94. The '169 Patent states that a type of "markup language" is "HTML." EX1001, 9:13; EX1004 ¶94. Beri uses HTML, which is one of the most well-known and utilized markup languages. *See, e.g*., EX1006, 5:32-39; EX1004 ¶94. Beri teaches HTML markup language as the vehicle for the exemplary prerequisite directive (DrawImmediately). EX1006, 5:13-62; EX1004 ¶94. The '169 Patent discloses that "scripting language" is used to control multimedia routing. EX1004 ¶94; EX1006, 12:20-29 ("scripting language… to control… sources of audio and video"). A scripting language is used to control web page behavior. EX1004 ¶94. Beri teaches a scripting language that executes a certain script in response to a certain event—a form of control—since said response would not occur unless the prerequisite directive is set. EX1004 ¶94.

6. Beri renders obvious Claim 22

a. 22[P]: "A client device in an interactive television system, said device comprising:"

To the extent the preamble is not limiting, claim 22 is disclosed or rendered obvious by Beri since displaying animated marquees is a well-known feature that can be implemented in interactive television system middleware or the Multimedia Home Platform utilizing software components written in Java. EX1004 ¶96.

Beri discloses "a method and system for displaying an arbitrary image in an animated marquee." *Id.,* ¶97; EX1006, 2:40-41. A **client device in an interactive television system** is an intended environment of Beri's system and does not serve as necessary structure for the claim terms. *Id.*

b. 22[A]: "a receiver configured to receive signals corresponding to directives which are indicative of an audio, video and/or graphic presentation requiring a set of resources; and"

Beri discloses this limitation. EX1004 ¶98.

Beri discloses a r**eceiver** (CPU 401a) **configured to receive signals** (input via I/O interface 401c) **corresponding to directives** (instructions processed and executed by the web browser 01e), **which are indicative of an audio, video, and/or graphic presentation** (the marquee object rendered on display 401d), as shown in Figure 4 below.

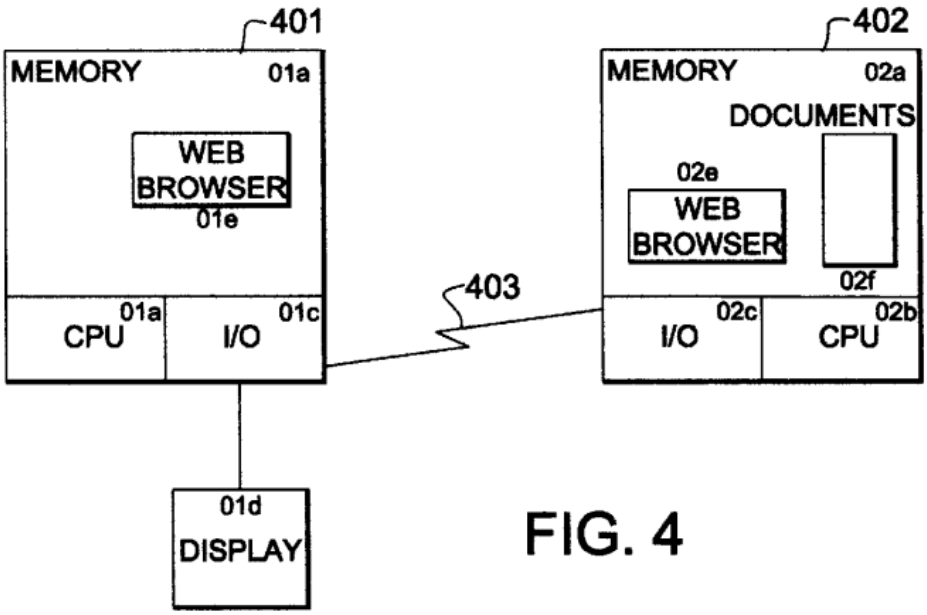


FIG. 4

Id., ¶100; EX1006, Fig. 4.

A POSITA would understand that this system **requires a set of system resources**, including CPU processing cycles, memory access (401a), and rendering options via the display interface (401d). EX1004 ¶101.

c. 22[B]: "a processing unit coupled to said receiver, wherein said processing unit is configured to:"

Beri discloses this limitation. EX1004 ¶102.

Beri discloses **a processing unit** as part of or **coupled to** the **receiver** in the form of central processing unit 402B, as shown in Figure 4.

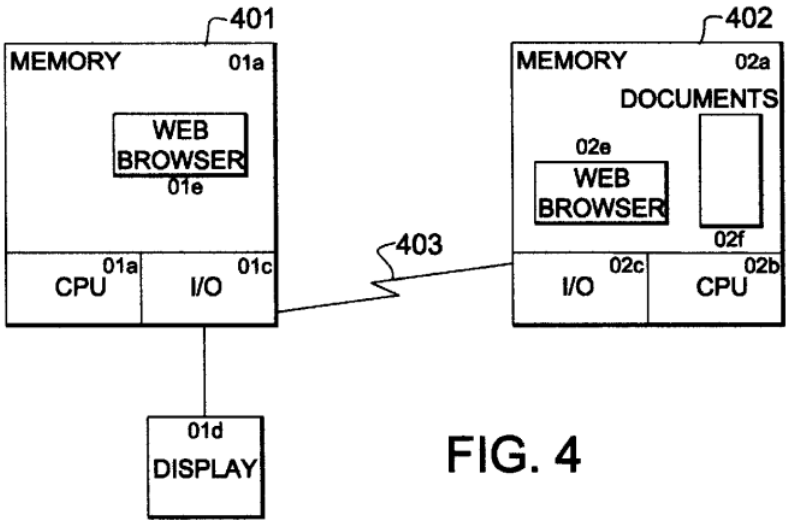


FIG. 4

Id., ¶104; EX1006, Fig. 4.

d. The remainder of Claim 22

The remainder of the Limitations in Claim 22 are disclosed by Beri as explained above in Claim Limitations 1[B], 1[C], and 1[D], which contain similar claim language as shown above for determining whether a prerequisite directive requires certain resources before displaying a presentation. EX1004 ¶107. 1[B] claims determining whether a prerequisite directive requires a resource like 22[C], 1[C] details initiating a presentation like 22[D], and 1[D] details prohibiting a presentation like 22[E]. *Id.* The differences between the claims are minimal (e.g., "determining" versus "determine"). The core semantic meaning remains the same in context. *Id.*

7. Beri renders obvious Claim 23

a. 23[P]: "A computer readable medium comprising program instructions executable by a computer to:"

Beri discloses this limitation. EX1004 ¶108.

Beri discloses a **computer readable medium comprising program instructions executable by a computer** by disclosing a computer that contains a memory, where the memory can store software instructions as shown below.

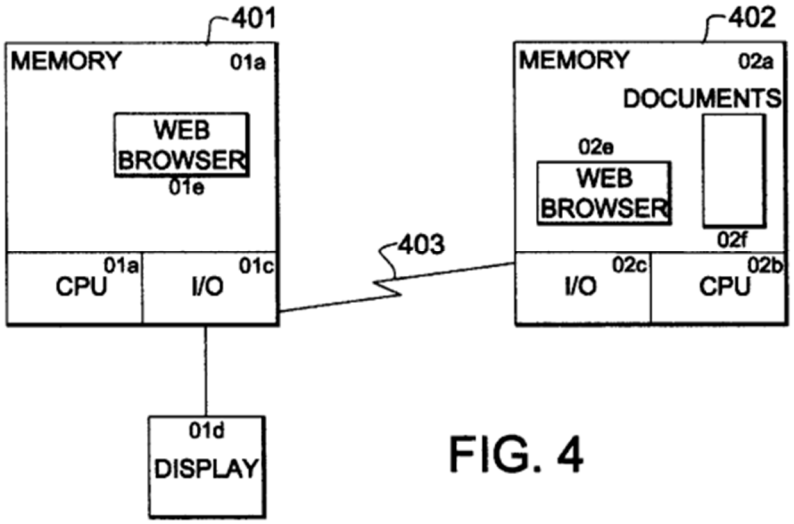


FIG. 4

EX1006, Fig. 4, 4:65-5:13; EX1004 ¶110. A POSITA would understand that a computer that contains memory can store software, for example, a web browser. EX1004 ¶110.

b. The remainder of Claim 23

The remainder of the Limitations in Claim 23 are disclosed by Beri as explained above in Claim Limitations 1[A], 1 [B], 1 [C], and 1[D], which disclose a

computer system that evaluates whether a resource is required before rendering content. EX1004 ¶113. 1[A] claims receiving directives like 23[A], 1[B] claims determining whether a prerequisite directive requires a resource like 23[B], 1[C] details initiating a presentation like 23[C], and 1[D] details prohibiting a presentation like 23[D]. *Id.*; *see supra* Sec. VII.A.4. The differences between the claims are minimal (e.g., "determining" versus "determine"). The core semantic meaning remains the same in context. *Id.*

B. Ground 2: Beri in Combination with Harrington Render Obvious Claims 3 and 22

1. Summary of Harrington

Harrington is a United States Patent entitled "Enhanced Video Programming System and Method Utilizing a Web Page Staging Area." EX1007, Cover. Harrington was filed on September 15, 1999 and issued October 10, 2006. *Id.* Harrington qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(e).

Harrington discloses a system that "combines broadcast television programming and/or video programming . . . , or particular content from the Internet, or video programming at a video server . . . with the massive Internet . . . ." EX1007, 1:65-2:3; EX1004 ¶116. Harrington teaches "a computer based system for receiving a video program along with embedded uniform resource locators (URLs)—which direct the user's computer 16 to address locations, or Web sites, on the Internet 20 to retrieve related Web pages." EX1007, 4:62-66; EX1004 ¶116. While the user is

watching a video, the software downloads the content at the URL and constructs it in a staging area in the system memory. EX1007, 14:61-15:13; EX1004 ¶116. At a predetermined time, the constructed webpage is integrated with the video and displayed to the user. EX1007, 16:12-23; EX1004 ¶116. A user's system will retrieve targeted advertising content from the Internet and integrate that content with the video at a time when that advertising is relevant. EX1007, 2:33-41; EX1004 ¶116. This allows "video programming" or "particular content from the internet" to combine with the "massive Internet" by "synching specific Internet pages to the video signal." EX1007, 1:65-2:27; EX1004 ¶116.

Harrington's "pre-fetch push command" composes of instructions that direct the computer to retrieve content at a URL and begin construction of the web page before the user sees it:

> The machine receives from a server a pre-fetch push command along with a URL and timer event information. A hidden staging frame is setup in memory for constructing the web page, and a timer is initialized using the timer event information. A web browser uses the URL to retrieve content and construct the web page in the hidden staging frame. After the web page is constructed and the timer expires or other relevant timer event occurs, the web browser retrieves the constructed web page and displays it to the user. Therefore, the user is provided with a more television-like experience in viewing content, as the user need not view the web pages being constructed.

EX1007, 4:7-18; EX1004 ¶117. Harrington's "pre-fetch push command may include any type of information instructing client machine 204 to construct a web page hidden from view." EX1007, 15:21-23; EX1004 ¶117. Exemplary instructions include directing the browser to pass URL "and timer event information, if present, to web browser 210, which initializes timer event 212, as shown with connection 224, if timer information is invoked." EX1007, 14:61-64; EX1004 ¶117.

Harrington explains that the content at the URL must be displayed to the user **synchronously** with the television programming being watched. EX1007, 3:34-40, 4:19-22 ("it is an object of the present invention to provide order and direction to the Internet by using television signals to place, orient and control such information in a meaningful context"); EX1004 ¶118. Harrington uses a "timer" to control when the content will be displayed. EX1007, 4:5-22; EX1004 ¶118. Harrington's timer,

> when used, provides an indication of when to display the constructed web page and it may use a **JavaScript timer, or other software or hardware timers**. Also, it may provide a **relative indication** of when to display the web page, such as a particular number of seconds after receiving the command, or it may provide an **indication of an actual time** at which to display it.

EX1007, 15:25-32 (emphases added); EX1004 ¶118.

2. Motivation to Combine

It would have been obvious to a POSITA to modify Beri's web page rendering software based on the teachings of Harrington's *client device in an interactive*

television system to improve user experience. EX1004 ¶119. Such a combination enables televisions to display web-like content—menus, program guides, or applications—on the television screen. *Id.* This would enable more interactivity and functionality for television for clients, alternatively commercial consumers. *Id.*

Harrington identifies the problem of rendering web pages and provides a solution for retrieving and rendering web pages in integrated television. EX1007, 1:65-2:13, 4:5-22; EX1004 ¶119. Beri addresses the problem of rendering web pages and provides a solution for rendering animations. EX1006, 2:1-33; EX1004 ¶119.

A POSITA would be motivated to combine because they both involve solutions to rendering web pages. EX1004 ¶120. It was well known that many users enjoyed looking at animations on web pages. *Id.* It was also well known that televisions display videos, where it would have been obvious to a POSITA to combine animations with the proven technology of video display, leading to televisions displaying animated content from web pages. *Id.*

3. Reasonable Expectation of Success

A POSITA would have found it straightforward to combine Harrington and Beri because both render web pages on a personal computer and the software environments are the same. *See, e.g.*, EX1006, 2:1-33 (discussing Microsoft environment and Microsoft ActiveX tools for use in web browsers); EX1007,

Figure 7 (using Netscape Navigator web browser in Windows environment), 10:48-64; EX1004 ¶121. A POSITA would recognize that the software environments for the technologies run closely in parallel because they rely on identical, if not similar, frameworks, interfaces, and rendering behaviors. EX1004 ¶121. A POSITA would recognize that the overlap would lead to functionally equivalent user experiences and implementation approaches. *Id.* The combination of Harrington's client device in an interactive television system with Beri's rendering software would have been an obvious combination of known elements yielding predictable results. *Id.* The result would have been software with the same overall purpose (rendering web pages) with the combined ability to render animations and while the user watches television. *Id.*

4. Beri and Harrington render obvious Claim 3: "The method of claim 2, wherein said one or more directives are received by a proxy server in an interactive television system."

Beri and Harrington together renders obvious this claim. EX1004 ¶123.

As discussed above, Beri renders obvious claim 2, to which claim 3 refers to. *See* Sec. VII.A.5, EX1004 ¶125.

Both Beri and Harrington disclose *directives* which are *indicative of an audio, video and/or graphic presentation requiring a set of resources*. EX1004 ¶126. It would be obvious for a POSITA to combine Beri's disclosed prerequisite directives comprising of markup language with Harrington's remote web server. EX1004

¶126; EX1007, 14:13-17. Both teachings rely on identical, if not similar, frameworks, interfaces, and rendering behavior. EX1004 ¶126. Combining utilizes the overlap, leading to functionally equivalent user experiences and implementation approaches. EX1004 ¶126.

Harrington discloses a remote web server, which is a *proxy server*. EX1007, 14:13, EX1004 ¶127. A proxy server does not need to be local to the client and can be located anywhere on the network. EX1004 ¶127. A proxy server can be a remote web server. EX1004 ¶127. A proxy acts as an intermediary between a client and another server by forwarding requests and responses. EX1004 ¶127. Harrington's proxy server is "for use in retrieving content to construct web pages" in the context of an interactive television system. EX1007, 14:13-15; EX1004 ¶127.

A POSITA would understand that Beri's use of directives would be used in the same environment as Harrington's *remote web server* because they are designed to be transmitted to and interpreted by a proxy server. EX1004 ¶128. Implementing Harrington's *remote web server* would enhance Beri's scope. *Id.*

5. Beri and Harrington render obvious Claim 22

a. 22[P]: "A client device in an interactive television system, said device comprising:"

To the extent Beri alone does not disclose, Harrington discloses this limitation. EX1004 ¶129.

Harrington discloses a television and receiver combination consisting of a personal computer equipped with a television card (the **client device**) that receives video from "broadcast television programming" (constituting the **interactive television system**). EX1007, 1:65-66, 2:50-54; EX1004 ¶131.

b. 22[A]: "a receiver configured to receive signals corresponding to directives which are indicative of an audio, video and/or graphic presentation requiring a set of resources; and"

Harrington discloses this limitation. EX1004 ¶132.

Harrington discloses a **receiver configured to receive signals corresponding to directives** because it discloses use of "a personal computer equipped with a **television card**" (EX1007, 2:50-54; 5:45-59) (emphasis added), which a POSITA would understand to refer to a card that can receive broadcast television signals. EX1004 ¶134. Harrington discloses that the personal computer has an "Internet connection" through a "conventional modem", which is a receiver for Internet signals. EX1007, 5:60-64; EX1004 ¶134.

Both Beri and Harrington disclose **directives** which are **indicative of an audio, video and/or graphic presentation requiring a set of resources**. *See* EX1006, EX1007; EX1004 ¶135. A POSITA would be motivated to combine to achieve the predictable goal of rendering web pages in integrated television. *See supra* Secs. VII.A.4-6; EX1004 ¶135. Such functionality would increase consumer

interaction with television and improve connectivity and delivery of content. EX1004¶135.

c. 22[B]: "a processing unit coupled to said receiver, wherein said processing unit is configured to:"

Harrington discloses this limitation. EX1004 ¶136.

Harrington's *processing unit* is part of or *coupled to* the *receiver*. EX1007, 5:45-48 ("Preferably, each receiver station comprises any Intel x86 machine (preferably a 486 processor, pentium processor, etc.), an Apple Computer, UNIX or any other type of standard computer workstation."); EX1004 ¶138. It was well-known to a POSITA at the time that processing units are part of, or coupled to, the receiver. EX1004¶138.

d. The remainder of Claim 22

The remainder of the Limitations in Claim 22 are disclosed by Beri as explained above in Claim Limitations 1[B], 1[C], and 1[D], which contain similar claim language for determining whether a prerequisite directive requires certain resources before displaying a presentation. EX1004 ¶140. 1[B] claims determining whether a prerequisite directive requires a resource like 22[C], 1[C] details initiating a presentation like 22[D], and 1[D] details prohibiting a presentation like 22[E]. *Id.* The differences between the claims are minimal (e.g., "determining" versus "determine") and more grammatical in nature, such that the core semantic meaning remains the same in context. *Id.*

C. Ground 3: Beri in Combination with Kunze Renders Obvious Claim 11

1. Summary of Kunze

Kunze, a memorandum, was published in December 1999 to the Metadata Initiative. *See* EX1012 ¶56[3] (finding that Kunze was publicly available as of December 1, 1999). Kunze's publication date predates the '169 Patent's filing date and qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(b).

Kunze details the Dublin Core metadata elements. EX1010, 1; EX1004 ¶143. The elements describe information resources, where a sequence of metadata elements embedded in an HTML file constitutes as a description of the file. *Id.* By embedding metadata into the HTML of a webpage, the web page can be better parsed by search engines, archives, or digital tools because they act as categorizing information. *Id.* Search engines like Google and Yahoo use metadata to categorize and rank content in search results. *Id.* The Dublin Core is a standardized form of encoding metadata using <meta> tags in HTML. *Id.* By using a standard, interoperability between systems is enabled, including the exchange of information, in a consistent manner. *Id.*

For example, Kunze discloses the following snippet:

[3] Dr. Hall-Ellis's declaration (EX1012) refers to the same EX1010 as this Petition.

```
<meta name    = "DC.Relation.Requires"
      content = "LWP::UserAgent; HTML::Parse; URI::URL;
                 Net::DNS; Tk::Pixmap; Tk::Bitmap; Tk::Photo">
```

EX1010, 12; EX1004 ¶144

Here, the <meta> tags act as an indicator pointing to information about the document, named "DC.Relation.Requires." EX1004 ¶144. Here, the snippet shows the attributes ("content") required for DC.Relation. *Id.* A web page will search for the attributes in determining if all are met to show DC.Relation. *Id.*

2. Motivation to Combine

A POSITA would be motivated to combine based on the teachings of Kunze's system to ensure uniformity with external sources like search engines to better index the web page in Beri. *See* EX1006, 1010; EX1004 ¶145. Kunze teaches a standardized <meta> tag format that covers attributes, including requirements and instructions, to standardize and make metadata readily accessible, which a POSITA would have found beneficial to the Beri system that relies upon the Internet. *See* EX1010; EX1004 ¶145. A POSITA would recognize that Kunze's teachings would enable increased interoperability between web browsers (i.e., Safari, Internet Explorer, Mozilla Firefox, etc.), allowing for more consistent visual user experiences. EX1004 ¶145.

3. Reasonable Expectation of Success

A POSITA would have a reasonable expectation of success combining the teachings of Beri and Kunze. *See* EX1006, EX1010; EX1004 ¶146. A POSITA would rely on Kunze's teachings to guide the formatting and usage of <meta> tags in developing the system to ensure consistently readable web pages and accessibility of correct content. *See* EX1010; EX1004 ¶146. Such a combination would be easily achieved given the prevalence, available documentation, and known success of Kunze's standardized system in other technologies. EX1004 ¶146.

4. Beri in combination with Kunze renders obvious claim 11: "The method of claim 1, further comprising defining a META name/value pair, wherein said name is indicative that said corresponding value is a prerequisite resource."

Beri in combination with Kunze renders obvious this limitation. EX1004 ¶147.

Kunze discloses **defining a META name/value pair**. *See* EX1010; EX1004 ¶149. A POSITA would utilize Kunze's Dublin Core <meta> tags in a myriad of ways, including storing requirements for content to display, making the value a **prerequisite resource**. EX1004 ¶149. Kunze's standardized tags are **indicative that said corresponding value is a prerequisite resource** because the standardized meta <tags> can be universally interpreted and utilized to correspond with specific prerequisite resources. *Id.* A POSITA would find such universal operability and

utilization to be a well-known consideration in web development, where it would have been obvious to utilize standardized tags. *Id.*

D. Ground 4: Beri in Combination with Del Sesto Renders Obvious Claim 12

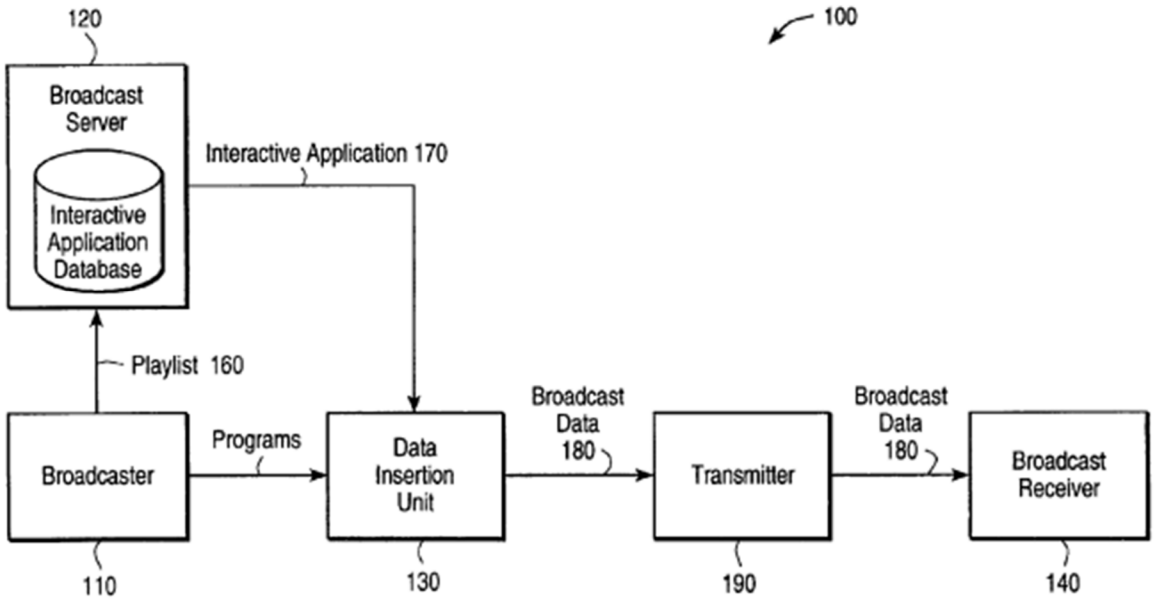
1. Summary of Del Sesto

Del Sesto, a United States Patent entitled "Automated Retirement of Interactive Applications Using Retirement instructions for Events and Program States," was filed June 15, 1999, and issued on June 27, 2006. EX1011, Cover. Del Sesto qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(e).

Del Sesto discloses "a system for selectively retiring interactive applications in a manner associated with an external event and program state of the interactive application." EX1011, 2:31-34; EX1004 ¶152 Del Sesto addresses the management of interactive applications embedded in broadcast content, like interactive television programs. EX1011, Cover; EX1004 ¶152.

Del Sesto explains that the prior art for interactive television faced a "serious problem" when dealing with orphaned applications. EX1011, 1:35-36; EX1004 ¶153. Orphaned applications are interactive applications that are still running or active but no longer associated with its intended program, content, or environment. EX1004 ¶153. Orphaned applications lead to resource waste and poor user experience. *Id.*

To remedy these problems, Del Sesto provides a system that selectively retires interactive applications associated with an external event and a program state of the interactive application. EX1011, 2:30-34; EX1004 ¶154. Del Sesto teaches that "one skilled in the art will appreciate that the system… may be incorporated into larger, more complex systems." *Id.*, 4:54-58; EX1004 ¶154. Figure 1 comprises of a broadcaster 110, a broadcast server 120, a data insertion unit 130, and at least one broadcast receiver (BR) 140.



EX1011, Fig. 1; EX1004 ¶154.

A broadcast signal containing an interactive application and broadcast data is received by the broadcast receiver, wherein the broadcast receiver decodes the signal and stores information describing the interactive application. *Id.*, 2:61-65; EX1004 ¶155. The broadcast receiver transmits the interactive application with the program.

so long as it is appropriate that the application continue to be executed. *Id.*, 3:1-5; EX1004 ¶155. The retirement of interactive applications occurs in response to a transmission from the broadcaster, indicating that the program with which the interactive application is associated is about to be terminated or suspended, providing for timely retirement of the interactive applications by the broadcast receiver. EX1011, 2:45-50; EX1004 ¶155.

2. Motivation to Combine

It would be obvious to a POSITA to modify Beri based on the teachings of Del Sesto to deal with the problem of orphaned applications to improve user experience. EX1004 ¶156. Del Sesto addresses automatic retirement or deactivation of interactive applications, which a POSITA would understand to be beneficial to Beri's system, which focuses on present display. *See* EX1006, EX1011; EX1004 ¶156. A POSITA would recognize that Del Sesto's teachings would have expanded Beri's applicability and ability to time-sync, eliminating the issue of orphaned applications and providing a more time-realistic user experience. EX1004 ¶156.

3. Reasonable Expectation of Success

A POSITA would have a reasonable expectation of success combining the teachings of Beri and Del Sesto. EX1004 ¶157. Specifically, a POSITA would rely on Del Sesto's teachings to implement additional functionality that considers automatic retirement or deactivation of interactive applications. *Id.; see also*

EX1006, EX1011. Such a combination would be easily achieved since Beri provides the infrastructure for interactive applications considered by Del Sesto. EX1004 ¶157.

4. Beri in combination with Del Sesto renders obvious claim 12: "The method of claim 1, wherein said prohibiting is in further response to detecting a corresponding time for expiration has not yet expired, and wherein said method further comprises allowing the presenting of said presentation in response to detecting said time for expiration has expired."

Beri in combination with Del Sesto renders obvious this limitation. EX1004 ¶158.

A POSITA would find it obvious that the retirement mechanism for interactive applications taught by Del Sesto is logically integrated into Beri's system because it increases functionality by enabling animated marquees embedded in broadcast-linked applications to be retired in response to changes in broadcast conditions or program states. *See* EX1006, EX1011; EX1004 ¶160.

Del Sesto discloses **prohibiting is in further response to detecting a corresponding time for expiration has not yet expired.** *See* EX1011; EX1004 ¶161. Del Sesto teaches when to stop displaying animated marquees, whereas Beri by default teaches indefinite display. EX1004 ¶161. A POSITA would find it obvious to integrate Del Sesto's teachings to add complex time-related functionality

into Beri's system for a more sophisticated and time-synchronized user experience. EX1004 ¶161.

Del Sesto also discloses **detecting a corresponding time for expiration.** EX1004 ¶162. Del Sesto's internal time counter tracks the passage of time relative to the reference time base. EX1011, 24:6-9; EX1004 ¶162. The internal time counter enables the retirement of interactive applications based on a defined execution time window and detects when an application should expire. EX1004 ¶162. A POSITA would find it obvious to integrate Del Sesto's teachings into Beri's marquee object to improve functionality. *Id.* Otherwise, expired or retired content would continue to display, impacting a viewer's experience. *Id.*

Del Sesto discloses **allowing the presenting of said presentation in response to detecting said time for expiration has expired.** *Id.* , ¶163. Del Sesto teaches that if the period during which the interactive application may be expired but the interactive application has not been retired that the receiver will retire the interactive application according to stored retirement instructions. EX1011, 24:20-23; EX1004 ¶163. A POSITA would recognize that these stored retirement instructions would include various conditional instructions to allow the presentation. EX1004 ¶163. Therefore, a POSITA would recognize that Del Sesto's teachings would provide better control and real-time synchronization, which are relevant to television broadcasting. *Id.*

E. Ground 5: Armstrong Renders Obvious Claims 1, 2 and 23

1. Summary of Armstrong

Armstrong, entitled *Designing and Using ActiveX Controls*, is a book published in the United States in 1997 and qualifies as prior art under at least 35 U.S.C. § 102(a) and (b). *See* EX1008, 3; *see also* EX1012 ¶48[4] (finding that Armstrong was published on December 19, 1996 and registered with U.S. Copyright Office on May 1, 1997); *see also* EX1014 (Library of Congress Entry).

Armstrong explains that "Hypertext Markup Language (HTML) is *the* language of the Web environment" and its purpose is to "specify text- and image-based documents in a machine- and display-independent way. HTML describes the formatting characteristics of a document." EX1009, 258-259; EX1004 ¶166. An HTML document is identified by a URL that "specifies the exact location of a resource within a Web-based environment." EX1009, 260; EX1004 ¶166. ActiveX controls add dynamic capabilities to Web documents and can be included in HTML-based documents. EX1009, 258-260; EX1004 ¶166. An OBJECT element is used to embed an ActiveX control into an HTML document. EX1009, 261; EX1004 ¶166. A PARAM tag is code that can be used inside of an OBJECT element. EX1009, 261; EX1004 ¶166. A PARAM tag can be used to store and

[4] Dr. Hall-Ellis's declaration (EX1012) refers to the same EX1008-EX1009 (Armstrong pts. 1 and 2) as this Petition.

retrieve a resource, like an image. EX1009, 261; EX1004 ¶166. If the PARAM tag identifies a resource explicitly, the resource is called "embedded." EX1009, 260; EX1004 ¶166.

In ActiveX OBJECT elements, if the resource is embedded, the web browser will not display the web page until the resource is fully downloaded. EX1009, 261-262; EX1004 ¶167. Armstrong explains that the user's wait for large embedded resources such as large images or videos would "be excruciating" in a "low bandwidth-environment." EX1009, 261-262; EX1004 ¶167.

ActiveX was modified to include a new "data path property" that allows the PARAM tag to interpret and use a link, like a URL, to point to or refer to a resource. EX1009, 262; EX1004 ¶168. With a data path property, "[i]nstead of embedding the data for the property within the HTML document, you store a link to the data." *Id.* Armstrong illustrates this:

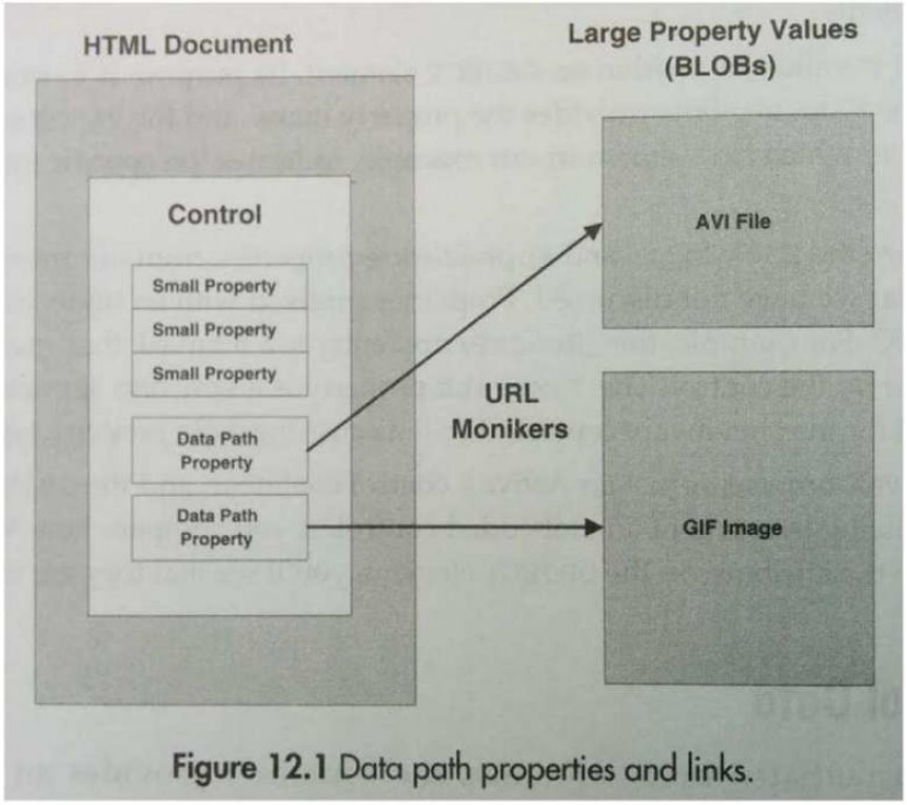


Figure 12.1 Data path properties and links.

EX1009, 262; EX1004 ¶168. Here, the "small" resources are embedded directly into the HTML document. EX1009, 261-63; EX1004 ¶168. The "large" resources or "BLOBs" are pointed to with a "data path property," which uses "URLs" to link the web browser to an AVI file (a type of video file) and a GIF file (a type of picture file). EX1009, 261-63; EX1004 ¶168.

A data path property enables "progressive rendering." EX1009, 263; EX1004 ¶169. Progressive rendering allows large resources to be displayed asynchronously. EX1009, 263; EX1004 ¶169. The web browser can load some resources without using a data path property (by embedding them in the HTML document), prohibiting the presentation of the web page until those resources are entirely downloaded.

EX1009, 263; EX1004 ¶169. While the web page with any embedded resources is being displayed to the user, the web browser will use the data path property to acquire other resources and display them as they are downloaded. EX1009, 263; EX1004 ¶169.

The data path property also allows the web browser to display the web page while downloading a stream of continuous data (e.g., audio data). EX1009, 263; EX1004 ¶170. Thus, a user could view a web page and listen to music being played on the web page while reading the text on the web page, even though the song has not yet been downloaded. EX1004 ¶170. A user can read and listen immediately rather than waiting for a file to entirely download over a slow Internet connection. *Id.*

2. Motivation to Combine

It would be obvious to a POSITA to combine the teachings of Armstrong for the sake of increased functionality of ActiveX controls for more functionality within applications like web browsers or enabling websites to deliver animated content. EX1004 ¶171. Armstrong teaches multiple ways to implement ActiveX controls to address low-bandwidth environments, to better load resources efficiently, and to enable progressive rendering. *See* EX1008, EX1009; EX1004 ¶171. A POSITA would be motivated to combine these teachings to better support simultaneous streaming and display, providing a user a more immediate user experience so they

can listen to audio content while reading a webpage without having to wait for the audio content to fully download. EX1004 ¶171. A developer would have known, given the widespread applicability of Microsoft Office applications, that it would be beneficial to implement Armstrong's teachings because they are reusable software modules. *Id.*

3. Reasonable Expectation of Success

A POSITA would recognize the teachings of Armstrong to represent different aspects of ActiveX controls operating on the same software framework. *See* EX1008, EX1009; EX1004 ¶173. Given Armstrong's disclosure of using data path properties to stream audio while displaying webpage content, a POSITA would understand that such a combination would also successfully support simultaneously streaming a display. EX1004 ¶173. A POSITA would reasonably expect that the combination would provide a more comprehensive user experience. *Id.*

A POSITA would have also reasonably expected success repurposing existing ActiveX controls to implement new functionality or developing a control since ActiveX controls are well-known, re-usable, and documented. *Id.*, ¶174.

Therefore, a POSITA would be able to implement the obviousness modifications in this ground without undue difficulty. *Id.,* ¶175.

4. Armstrong renders obvious Claim 1

a. 1[P]: "A method comprising:"

To the extent limiting, Armstrong discloses the preamble. EX1004 ¶176.

As discussed above in Sec. VII.E.1, Armstrong teaches a *method* for storing a link to data instead of embedding the data for the property within the HTML to give the effect of progressive rendering. EX1009, 261; EX1004 ¶178. This allows the web browser to display the web page while downloading a stream of continuous data, enabling a user to read and listen immediately rather than wait for the file to download entirely. EX1009, 261-262; EX1004 ¶178.

b. 1[A]: "receiving one or more directives, wherein said directives are indicative of an audio, video and/or graphic presentation which requires a set of resources"

Armstrong discloses this limitation. EX1004 ¶179.

Armstrong discloses **receiving one or more directives.** *Id.,* ¶181. Armstrong's ActiveX controls perform various tasks such as displaying animations, collecting data, and viewing certain types of files. *Id.* To determine what function to execute, Armstrong's ActiveX controls take **one or more directives** through method calls, properties, and events from a web browser. EX1009, 261-262; EX1004 ¶181.

Furthermore, Armstrong discloses **wherein said directives are indicative of an audio, video and/or graphic presentation.** EX1004 ¶182. Armstrong discloses **directives that are indicative of an audio, video, or graphic presentation.** *Id.* Armstrong discloses sample code that includes the line:

<PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">

EX1009, 267-68; EX1004 ¶182. This line of code is a *directive* that indicates to the Web browser that the URL (http://www.sky.net/~toma/log) points to a resource that will be downloaded asynchronously without having to wait. EX1004 ¶182. It is a directive **indicative of an audio, video, or graphic presentation** because it is a declaration or statement instructing the computer how to handle presentation of the downloaded audio, video, or graphic content. EX1004 ¶182; *see* Sec. V.B (explaining the '169 Patent's disclosure of an example of a directive). For example, it indicates that the link is a "data path property" to be downloaded asynchronously compared to embedded resources. EX1004 ¶182. Armstrong's data path properties are intended to be used for large images and videos in terms of BLOBs. EX1009, 261-62; EX1004 ¶182.

Armstrong discloses a **presentation which requires a set of resources**. EX1004 ¶183. Armstrong teaches the use of ActiveX software to display to the user a presentation consisting of a web page with various **resources,** such as fonts, colors, text strings, images, videos, and audio. EX1009, 261-262; EX1004 ¶183. These are a *set* of resources, because the web pages require multiple resources to display a web page fully. EX1009, 261-262; EX1004 ¶183. Armstrong provides an example containing multiple resources consisting of multiple strings of text for display on the web page. EX1009, 259; EX1004 ¶183. These different resources comprise a web

page's presentation, covering things such as images, titles, headers, and design choices. EX1004 ¶183.

> c. 1[B]: "determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition [sic] of a subset of said set of resources is a prerequisite for initiating the presentation;"

Armstrong discloses this limitation. EX1004 ¶184.

First, Armstrong discloses **determining whether said one or more directives includes a perquisite directive**. EX1004 ¶186. The *determining whether* aspect is performed in Armstrong by a web browser such as "Internet Explorer," because the web browser is the software that processes the ActiveX control. *See, e.g.*, EX1009, 259 (describing use of Internet Explorer to execute HTML code); EX1004 ¶186. When Internet Explorer executes HTML code, it identifies embedded controls and determines if all prerequisite directives like control availability and resource parameters are met. EX1004 ¶186.

Armstrong's **prerequisite directive which indicates that acquisition of a subset of [[a]] said set of resources is a prerequisite for initiating the presentation.** *Id.,* ¶187. Armstrong's web page includes a prerequisite directive which indicates that acquisition of a subset of said set of resources is a prerequisite for initiating the presentation. *Id.* The web pages may have embedded resources such as images, fonts, colors, and text strings, and that the "primary purpose of HTML is to specify text- and image-based" web pages. EX1009, 259-262; EX1004

¶187. Specifically, Armstrong states that HTML is "used to embed images, documents, applets, and, in our case, ActiveX controls." EX1009, 260. EX1004 ¶187. Embedded resources are designated as prerequisite resources because the presentation of the web page is prohibited until the embedded resources are downloaded. EX1004 ¶187. Contrastingly, for resources indicated by data path properties like TextPath, the initiation of the presentation of the web page can begin immediately, before the image or other resources pointed to by the data path properties are downloaded. EX1009, 261-63, 267-68; EX1004 ¶187. The embedded resources are the *subset of resources*. EX1004 ¶187. Resources referred to using a data path property, which are not embedded, are part of the full set of resources that constitute the web page presentation. *Id*.; EX1009, 267-68. EX1004 ¶187.

To the extent PO argues that Armstrong does not explicitly disclose a prerequisite directive to indicate embedded resources that are a prerequisite for initiating the presentation, such a prerequisite directive would be obvious because HTML uses directives for specifying web pages and includes a resource embedding functionality that creates a distinction for the web browser between embedded resources and optional resources, like those indicated by data path properties. EX1009, 258-59, 261-63, 289-90; EX1004 ¶188.

d. 1[C]: "initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and"

Armstrong discloses this limitation. EX1004 ¶189.

Armstrong discloses **initiating said presentation.** EX1004 ¶191. Armstrong discloses that the presentation is controlled, including being initiated, by a web browser like "Internet Explorer," because the web browser is the software that executes the ActiveX control. *See, e.g.*, EX1009, 259 (describing use of Internet Explorer to execute HTML code); EX1004 ¶191. When Internet Explorer processes a web page containing an ActiveX control and all required conditions are met, it will begin displaying content, *initiating the presentation*. EX1004 ¶191.

Second, Armstrong discloses **in response to determining the one or more directives do not include said prerequisite directive.** EX1004 ¶192. Armstrong discloses that if the web page does not include a prerequisite directive, where none of the OBJECT elements have embedded resources, that all resources are indicated by data path properties; the web browser will determine no prerequisite directive exists and presentation of the web page will be *initiated*. EX1009, 261-63, 275-76; *see supra*, Secs. VII.E.4.d; EX1004 ¶192.

e. 1[D]: "prohibiting initiation of said presentation until said subset of resources are acquired, in response to determining the one or more directives include said prerequisite directive."

Armstrong discloses this limitation. EX1004 ¶193.

Armstrong discloses **prohibiting initiation of said presentation**. EX1004 ¶195. Armstrong discloses that the presentation is controlled, including being prohibited, by a web browser such as "Internet Explorer". *See, e.g.*, EX1009, 259 (describing use of Internet Explorer to execute HTML code); EX1004 ¶195. Internet Explorer will not execute if a prerequisite directive is missing, *prohibiting initiation of a presentation*. EX1004 ¶195.

Furthermore, Armstrong discloses **until said subset of resources are acquired**. EX1004 ¶196. If an OBJECT element has an embedded image, then the presentation will be prohibited until the OBJECT element is loaded. EX1009, 261-63; *see supra* Secs. VII.E.4.c-d; EX1004 ¶196. The OBJECT element must load the entire image before the presentation can load. EX1004 ¶197. Since an embedded image is a subset of the OBJECT element, the presentation will not load until the image loads, which is *until said subset of resources are acquired. Id.*

Armstrong also discloses **in response to determining the one or more directives include said prerequisite directive**. *Id.*, ¶197. If the *one or more directives include a prerequisite directive*, then presentation of the web page will be prohibited until the subset of resources are acquired. *Id.* Prerequisite directives can be implemented within the ActiveX control to determine if resources have been acquired. EX *Id.*

5. Armstrong renders obvious Claim 2: "The method of claim 1, wherein said prerequisite directive comprises one or more directives selected from the group consisting of: a markup language, a scripting language, and a style sheet."

Armstrong renders obvious this claim. EX1004 ¶198.

First, Armstrong discloses the method of claim 1. *Id.,* ¶200; *see above* Sec. VII.E.4.

Second, Armstrong discloses *wherein said prerequisite directive comprises one or more directives selected from the group consisting of: a markup language, a scripting language, and a style sheet.* EX1004 ¶201. Armstrong's *prerequisite directive* can be written with a *markup language, a scripting language, or a style sheet*. EX1004 ¶201. The '169 Patent states that a type of "markup language" is "HTML." EX1001, 9:13; EX1004 ¶201. Armstrong uses HTML, a well-known and utilized markup language. *See, e.g.*, EX1009, 257-63; EX1004 ¶201. Armstrong teaches that HTML is the language of web development. EX1009, 258; EX1004 ¶202. A POSITA would know that HTML markup language should be used as the language for the prerequisite directive in Armstrong. EX1009, 258-59; EX1004 ¶201.

6. Armstrong renders obvious Claim 23

a. 23[P]: "A computer readable medium comprising program instructions executable by a computer to:"

To the extent limiting, Armstrong discloses the preamble. EX1004 ¶202.

Armstrong discloses a *computer readable medium comprising program instructions executable by a computer* because it discloses a computer that contains a memory, where the memory stores software consisting of a web browser program. *See, e.g.*, EX1008, 22 (disclosing hardware and software for running the applications disclosed in Armstrong); EX1004 ¶204.

b. The remainder of Claim 23

The remainder of the Limitations in Claim 23 are disclosed by Armstrong as explained above in Claim Limitations 1[A], 1 [B], 1 [C], and 1[D], which disclose a computer system that evaluates whether a resource is required before rendering content. EX1004 ¶206. 1[A] claims receiving directives like 23[A], 1[B] claims determining whether a prerequisite directive requires a certain resource like 23[B], 1[C] details initiating a presentation like 23[C], and 1[D] details prohibiting a presentation like 23[D]. *Id.; see supra* Secs. VII.E.4.b-e. The differences between the claims are minimal (e.g., "determining" versus "determine"). The core semantic meaning remains the same in context. EX1004 ¶206.

F. Ground 6: Armstrong in Combination with Harrington Render Obvious Claims 3 and 22

1. Motivation to Combine

It would be obvious to a POSITA to modify Armstrong's web page rendering software based on the teachings of Harrington's client device in an interactive television system to enhance user experience. *See* EX1008, EX1009;

EX1004 ¶208. Indeed, the software environments being the same means that the technologies run closely in parallel because they rely on identical, if not similar, frameworks, interfaces, and rendering behaviors. EX1004 ¶208. A POSITA would find the overlap to lead to functionally equivalent user experiences and implementation approaches. *Id.*

2. Reasonable Expectation of Success

A POSITA would find it simple to effectuate the combination because combine Harrington and Armstrong since both render web pages on a personal computer, and the software environments are the same. *See, e.g.*, EX1009, 260 (discussing Microsoft ActiveX tools for use in Microsoft web browsers like Internet Explorer); EX1007, Figure 7 (disclosing use of Netscape Navigator web browser in Windows operating system), 10:48-64; EX1004 ¶209. The combination of Harrington's client device in an interactive television system with Armstrong's asynchronous rendering software would be an obvious combination of known limitations yielding predictable results in rendering web pages within integrated television. EX1004 ¶209. The result would be software with the same overall purpose (rendering web pages) that would have the combined ability to render web page resources asynchronously and to do so while the user was watching television. *Id.*

3. Armstrong and Harrington render obvious Claim 3: "The method of claim 2, wherein said one or more directives are

received by a proxy server in an interactive television system."

Armstrong and Harrington together renders obvious this claim. EX1004 ¶210.

As discussed above, Armstrong renders obvious claim 2, to which claim 3 refers to. *See* Sec. VII.E.5, EX1004 ¶212. Armstrong discloses that the prerequisite directive can be written with a markup language, HTML. *See* EX1009; EX1004 ¶212.

Harrington **discloses wherein said one or more directives are received by a proxy server.** EX1004 ¶213. Harrington discloses a remote web server, which is a *proxy server*. EX1007, 14:13; EX1004 ¶213; *see also* Sec. VII.B.4 (describing Harrington's remote web server).

Harrington teaches the proxy server in the context of **an interactive television system**. EX1004 ¶214. A POSITA would understand that Armstrong's use of directives would be used in the same environment as Harrington's *remote web server* because such directives are designed to be transmitted to and interpreted by a proxy server. *Id.* In implementing Harrington's *remote web server,* a POSITA would enhance Armstrong's scope. *Id.*

4. Armstrong and Harrington render obvious Claim 22

a. Limitation 22[P]: "A client device in an interactive television system, said device comprising:"

To the extent limiting, Armstrong and Harrington together disclose the preamble. EX1004 ¶215.

Harrington discloses a television and receiver combination consisting of a personal computer equipped with a television card (the **client device**) that receives video from "broadcast television programming" (constituting the **interactive television system**). EX1007, 1:65-66, 2:50-54; EX1004 ¶217.

Harrington identifies the problem of integrating television with rendering of web pages and provides a solution for retrieving and rendering web pages in integrated television. EX1007, 1:65-2:13, 4:5-22. EX1004 ¶218. Armstrong addresses the problem of rendering web pages and teaches a solution for how to asynchronously render the various resources in a web page. EX1009, 261-64; EX1004 ¶218. A POSITA would be motivated to combine because they both involve solutions to the problem of rendering of web pages. EX1004 ¶218. The combination of Harrington's client device in an interactive television system with Armstrong's asynchronous rendering software would be an obvious combination yielding predictable results in rendering web pages in integrated television. *Id.* The result would be software with the same overall purpose (rendering web pages) that

can render web page resources asynchronously while the user watches television. *Id.*

b. Limitation 22[A]: "a receiver configured to receive signals corresponding to directives which are indicative of an audio, video and/or graphic presentation requiring a set of resources; and"

Armstrong and Harrington disclose this limitation. EX1004 ¶219.

Harrington discloses a **receiver configured to receive signals corresponding to directives** because it discloses use of "a personal computer equipped with a **television card**" (EX1007, 2:50-54; 5:45-59), which a POSITA would understand to refer to a card capable of receiving broadcast television signals. EX1004 ¶221. Harrington's personal computer has an "Internet connection" through a "conventional modem" (EX1007, 5:60-64), which a POSITA would understand to refer to a receiver for Internet signals since conventional modems are well-known to Internet functionality. EX1004 ¶221.

Armstrong discloses *directives* which are **indicative of an audio, video and/or graphic presentation requiring a set of resources,** and a POSITA would be motivated to combine Armstrong and Harrington for interoperability and scope. *See supra*, Sec. VII.E.4.b (describing Armstrong's Claim Limitation 1[A]); EX1004 ¶222.

c. Limitation 22[B]: "a processing unit coupled to said receiver, wherein said processing unit is configured to:"

Harrington discloses this limitation. EX1004 ¶223.

Harrington discloses a processing unit as part of, or coupled to, the receiver. EX1007, 5:45-48 ("Preferably, each receiver station comprises any Intel x86 machine (preferably a 486 processor, pentium processor, etc.), an Apple Computer, UNIX or any other type of standard computer workstation."); EX1004 ¶225.

d. The remainder of Claim 22

The remainder of the Limitations in Claim 22 are disclosed by Armstrong as explained above in Claim Limitations 1[B], 1[C], and 1[D], which contain similar claim language for determining whether a prerequisite directive requires certain resource before displaying a presentation. EX1004 ¶227. 1[B] claims determining whether a prerequisite directive requires a certain resource like 22[C], 1[C] details initiating a presentation like 22[D], and 1[D] details prohibiting a presentation like 22[E]. *Id; see supra* Secs. VII.E.4.c-e. The differences between the claims are minimal (e.g., "determining" versus "determine"). The core semantic meaning remains the same in context. EX1004¶229.

G. Ground 7: Armstrong in Combination with Kunze Renders Obvious Claim 11

1. Motivation to Combine

It would be obvious to a POSITA to modify Armstrong's web page rendering software based on the teachings of Kunze for better user experience between

devices. *See* EX1008, EX1009; EX1004 ¶229. It would be obvious to utilize Kunze's standardized <meta> tags for metadata for interoperability and seamless integration for web page rendering software that Armstrong relies upon across devices. *See* EX1010; EX1004 ¶229. A POSITA would also find it obvious that Kunze's teachings would have enabled increased interoperability between web browsers (i.e., Safari, Internet Explorer, Mozilla Firefox, etc.), allowing for more consistent visual user experiences, because Kunze's Dublin Core metatags enable better content filtering and handling. EX1004 ¶229.

2. Reasonable Expectation of Success

A POSITA would have a reasonable expectation of success combining the teachings of Armstrong and Kunze. EX1004 ¶230. Specifically, a POSITA would rely on Kunze's teachings regarding the structure and application of <meta> tags in developing ActiveX controls, particularly those in conformity with the Dublin Core metadata standard, to guide the formatting and parsing of web pages with embedded ActiveX controls. *See* EX1008, EX1009, EX1010; EX1004 ¶230. Given the mainstream use of Dublin Core metadata tags in other technologies, a POSITA would find it simple to effectuate Kunze's teachings in implementing Armstrong. EX1004 ¶230.

3. Armstrong in combination with Kunze renders obvious claim 11: "The method of claim 1, further comprising defining a META name/value pair, wherein said name is indicative that said corresponding value is a prerequisite

resource."

Armstrong in combination with Kunze renders obvious this limitation. EX1004 ¶231.

Kunze discloses *defining a META name/value pair. See* EX1010; EX1004 ¶233. Since Armstrong's framework depends on the internet, it would be obvious to a POSITA to utilize the <meta> tags taught by Kunze for interoperability and uniformity for external sources like search engines to better index the web page. *See* EX1008, EX1009; EX1004 ¶233.

Kunze in combination with Armstrong discloses *wherein said name is indicative that said corresponding value is a prerequisite resource.* EX1004 ¶234. A POSITA would utilize Kunze's <meta> tags to store requirements for content to display, making the value a *prerequisite resource*. *Id.* A POSITA would find it obvious that using Kunze's teachings increase the likelihood that web browsers would recognize that the <meta> tags are *indicative that said corresponding value is a prerequisite resource. Id.*

H. Ground 8: Armstrong in Combination with Del Sesto Renders Obvious Claim 12

1. Motivation to Combine

It would be obvious to a POSITA to modify Armstrong based on the teachings of Del Sesto to deal with the problem of orphaned applications to improve user experience. EX1004 ¶236. Del Sesto addresses automatic retirement or deactivation

of interactive applications, which a POSITA would find obvious to use as an ActiveX control. *See* EX1011; EX1004 ¶236. Integrating Del Sesto's teachings create a controller that determines when and how the ActiveX component taught by Armstrong should be deactivated. *See* EX1008, EX1009; EX1004 ¶236. Combining Del Sesto and Armstrong's teachings would improve systems allowing for better user experience. EX1004 ¶236.

2. Reasonable Expectation of Success

A POSITA would have a reasonable expectation of success combining the teachings of Armstrong and Del Sesto. EX1004 ¶237. A POSITA would have found it simple to effectuate Del Sesto's focus on application lifecycle control into ActiveX technology because they are functionally complementary since one manages lifecycles whereas the other delivers applications. *See* EX1008, EX1009, EX1011; EX1004 ¶237. In combining them, a POSITA would reasonably expect better performance and application behavior, thus a better user experience. EX1004 ¶237.

3. Del Sesto in combination with Armstrong renders obvious Claim 12: "The method of claim 1, wherein said prohibiting is in further response to detecting a corresponding time for expiration has not yet expired, and wherein said method further comprises allowing the presenting of said presentation in response to detecting said time for expiration has expired."

Armstrong in combination with Del Sesto renders obvious this limitation. EX1004 ¶238.

First, Del Sesto discloses *wherein prohibiting is in further response to detecting a corresponding time for expiration has not yet expired.* A POSITA would find it obvious that the retirement mechanism taught by Del Sesto would be utilized in an ActiveX object embedded in a webpage or application. *See* EX1008, EX1009; EX1004 ¶240. The retirement mechanism is a logical integration to a POSITA into Armstrong's system since it increases functionality by enabling an ActiveX control, like an animated marquee, to be retired in response to changes in broadcast conditions or program states. EX1004 ¶240.

Del Sesto permits the interactive element to run if the execution time window has not expired. EX1004 ¶241. A POSITA would find it obvious to utilize this feature for ActiveX controls to maintain visibility and functionality. *Id.* A POSITA would find it obvious to integrate Del Sesto to effectuate the prohibiting of an ActiveX control's retirement. *Id.* Del Sesto's internal time counter keeps track of the passage of time relative to the reference time base. *Id.;* EX1011, 24:6-9. The internal time counter detects when an application should expire, where each interactive application may define a period in which it is permitted to execute, that upon expiry, the broadcast receiver will retire the application. EX1004 ¶241. A POSITA would be motivated to apply Del Sesto's expiration detection mechanism to Armstrong's ActiveX control to enhance functionality and to provide a better live experience for a viewer. *Id.*

Second, Del Sesto discloses **allowing the presenting of said presentation in response to detecting said time for expiration has expired**. *Id.,* ¶242. Del Sesto teaches that if the period during which the interactive application may be expired but the interactive application has not been retired that the receiver will retire the application according to stored retirement instructions. *Id.;* EX1011, 24:20-23. These stored retirement instructions include various conditional instructions to allow the presentation. EX1004 ¶242. A POSITA would find it obvious that Armstrong's ActiveX controls can be dictated by program relevance or timing. *Id.* A POSITA would find it obvious to combine Del Sesto's conditional expiration logic with Armstrong's ActiveX control display behavior in the context of live or scheduled broadcast events because the time-sensitive functionality would be present. *Id.*

VIII. CONCLUSION

For the reasons set forth above, Petitioner respectfully requests that the Board institute an *inter partes* review of the '169 Patent based on all of the grounds specified in this Petition.

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CLAIM LISTING APPENDIX

1, 2, 3, 11, 12, 22, and 23

1[P]. A method comprising:

[A]. receiving one or more directives, wherein said directives are indicative of an audio, video and/or graphic presentation which requires a set of resources;

[B]. determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition [sic] of a subset of said set of resources is a prerequisite for initiating the presentation;

[C]. initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and

[D]. prohibiting initiation of said presentation until said subset of resources are acquired, in response to determining the one or more directives include said prerequisite directive.

2. The method of claim 1, wherein said prerequisite directive comprises one or more directives selected from the group consisting of: a markup language, a scripting language, and a style sheet.

3. The method of claim 2, wherein said one or more directives are received by a proxy server in an interactive television system.

11. The method of claim 1, further comprising defining a META name/value pair, wherein said name is indicative that said corresponding value is a prerequisite resource.

12. The method of claim 1, wherein said prohibiting is in further response to detecting a corresponding time for expiration has not yet expired, and wherein said method further comprises allowing the presenting of said presentation in response to detecting said time for expiration has expired.

22[P]. A client device in an interactive television system, said device comprising:

[A]. a receiver configured to receive signals corresponding to directives which are indicative of an audio, video and/or graphic presentation requiring a set of resources; and

[B]. a processing unit coupled to said receiver, wherein said processing unit

is configured to:

[C]. determine whether said one or more directives includes a prerequisite directive which indicates that acquisition of a subset of said set of resources is a prerequisite for initiating the presentation;

[D]. initiate said presentation, in response to determining the one or more directives do not include said prerequisite directive; and

[E]. prohibit initiation of said presentation until said subset of resources are acquired, in response to determining the one or more directives include said prerequisite directive.

23[P]. A computer readable medium comprising program instructions executable by a computer to:

[A]. receive directives which are indicative of an audio, video and/or graphic presentation which requires a set of resources;

[B]. determine whether said one or more directives includes a prerequisite directive which indicates that acquisition of a subset of said set of resources is a prerequisite for the presentation;

[C]. initiate said presentation, in response to determining the one or more directives do not include said prerequisite directive; and

[D]. prohibit the presenting of said presentation until said subset of resources are acquired, in response to determining the one or more directives include said prerequisite directive.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that foregoing

PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 7,055,169

exclusive of the parts exempted as provided in 37 C.F.R. §42.24(a), contains 13,838 words and therefore complies with the type-volume limitations of 37 C.F.R. §42.24(a).

Dated: July 11, 2025

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,055,169 AND EXHIBITS EX1001-1014** are being served on July 11, 2025, via U.S. Mail on counsel of record for U.S. Patent No. 7,055,169 as addressed below:

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