

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

**DECLARATION OF IMMANUEL FREEDMAN, Ph.D.
IN SUPPORT OF PINTEREST, INC'S PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 7,055,169**

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Petition for *Inter Partes* Review of U.S. Patent No. 7,055,169
Declaration of Immanuel Freedman, Ph.D.

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
1005	Curriculum Vitae of Expert Immanuel Freedman, Ph.D.
1006	U.S. Patent No. 6,141,018 (“Berl”)
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”)

I, Immanuel Freedman, hereby declare as follows:

I. INTRODUCTION

1. I have prepared this Declaration in connection with Pinterest, Inc.'s Petition for *Inter Partes* Review of U.S. Patent No. 7,055,169 ("the '169 patent") (Ex. 1001), which is to be filed concurrently with this Declaration.

2. In the course of preparing this Declaration, I reviewed the '169 patent and its prosecution file history, as well as the documents discussed in this Declaration.

3. I have been retained by Pinterest ("Petitioner") as an expert in the fields of computer science, computer communications, and related technologies. I am being compensated at my normal consulting rate of \$450 per hour for my time. My compensation is not dependent on and in no way affects the substance of my statements in this Declaration.

4. I have no financial interest in Petitioner or its products or services. I similarly have no financial interest in the '169 patent or the owner of the '169 patent, and I have had no contact with the named inventors of the '169 patent.

II. QUALIFICATIONS

5. I received a Bachelor of Science and Ph.D. in Physics from the University of Durham in England in 1979 and 1986, respectively. I have over 30 years of industry experience, a substantial portion of which was spent working

with video, imaging, modeling, simulation, systems analysis, design, development, and testing. I am a registered patent agent before the USPTO. Between obtaining my undergraduate and doctoral degree, I developed a microcomputer system for detecting coalmine fires and heatings as a scientist for the National Coal Board and worked as a software engineer for Laser-Scan Ltd. in Cambridge, England.

6. After obtaining my Doctorate, I served as a Research Assistant at University College London from September 1986 to June 1987, where I developed digital image processing algorithms to improve image and stereo-matching quality for a digital terrain modeling system, including software and algorithms for affine transformation, edge filtering, kriging interpolation, and image stereo-matching with sub-pixel acuity. I continued my work with digital image processing as a Research Associate at the University of Maryland, from June 1987 to September 1988. During my time at the University of Maryland, I designed algorithms for filtering, segmenting, clustering, and path planning based on digital images organized by quad-tree data structures.

7. I have worked as a chief systems engineer and have extensive experience in the scientific modeling and statistical data compression space. I received National Aeronautics and Space Administration Group Achievement Awards in 1990 and 1992.

8. I have also worked as a software engineer in contract and in senior positions, notably at the Federal National Mortgage Association in Washington, D.C., General Instrument Inc., Comstream Inc., and Armor Safe Technologies Inc.

9. From 1996-1997, I was the sole proprietor of Anugraha, where I researched and developed algorithms and processes to compress fine art photography at an image quality acceptable to artists based on the JPEG imaging standard implemented with image pre-processing and adaptive quantization. I then went on to work as an engineering contractor or consultant for various companies, working primarily on image processing systems and digital interactive television set-top boxes.

10. From 2000 to 2002, I worked as the chief systems engineer for Media Logic Systems Ltd. where I developed a live interactive television system for customers to communicate with human sales agents in video enabled call centers. I spent significant time researching and developing tools and encoder systems to improve image quality at prescribed latency and bit rate for distributing live video and audio streams encoded via low latency methods.

11. In addition to my over thirty years of relevant industry experience, I have authored many publications relating to video and imaging coding. In 2003, I authored a chapter entitled "Video Compression" for the *Internet Encyclopedia*. In 2004 I authored the chapter entitled "Video" for the *Berkshire Encyclopedia of*

Human-Computer Interaction. And in 2007 I authored a chapter titled “Video Compression” for the *Handbook of Computer Networks*.

12. I am also a Senior Member of the Institute of Electrical and Electronics Engineers (“IEEE”) and currently chair the Philadelphia Chapter of the Communications & Information Theory Societies. I am a former Chair of the American Association of Pharmaceutical Scientists Pharmacology-Imaging and Predictive Modeling Communities. I also served as the 2019 Vice Chair of the IEEE P2673 Intelligence Augmentation for Medical Imaging Standards Working Group, currently lead the Trusted Analytics Sub-Group of the IEEE P2795 Shared Analytics for Secured and Unsecured Networks Standards Working Group, and serve as a member of the IEEE Dynamic Spectrum Access Standards Machine Learning Standards Working Group.

13. For further details regarding my employment and academic history, please refer to my curriculum vitae, attached as Ex. 1005.

III. RELEVANT LAW

14. I understand that statutory and judicially created standards must be considered to determine the validity of a patent claim. I am not an attorney and, consequently, will offer no opinion on the law itself. My understanding of the pertinent law is described in this section and is the result of explanations provided by counsel. I have applied this understanding in my analysis.

15. I understand that a patent claim is unpatentable if it is anticipated by, or obvious in view of, the prior art. I further understand that the time frame of reference for determining whether a claim is unpatentable is from the perspective of a POSITA at the time of invention.

Anticipation.

16. I have been informed that for a patent claim to be anticipated by the prior art, each and every limitation of the claim must be found, expressly, implicitly, or inherently, in a single prior art reference as recited in the claim. I have been informed that a claim limitation not expressly found in a prior art reference is inherent if the prior art necessarily functions in accordance with, or includes, the claim limitation. Mere probability that a limitation is included is not sufficient to establish inherency.

Obviousness.

17. In analyzing obviousness in light of the prior art I have been informed that it is important to understand the scope of the claims, the level of skill in the relevant art, the scope and content of the prior art, the differences between the prior art and the claims, and any objective indicia of non-obviousness (also called secondary considerations).

18. I have been informed that a patent claim is unpatentable for obviousness if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a POSITA to which said subject matter pertains. I have been informed that obviousness may be based on one reference or a combination of references. I have been informed that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.

19. I have been informed that when a patented invention is a combination of known elements, the Patent Trial and Appeal Board (“Board”) must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue by considering the teachings of prior art references, the effects of demands known to people working in a field or present in the marketplace, and the background knowledge possessed by a POSITA.

20. I have been informed that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of the claimed subject matter. I understand that several of these rationales are: (1) combining prior art elements according to known methods to yield predictable results; (2) simple substitution of one known element for another to obtain predictable results; (3) use of a known technique to improve a similar device (method or product) in the same way; (4) applying a known technique to a known device (method or product) ready for improvement to yield predictable results; (5)

choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (6) and some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

21. I have been informed that in order to prove that a claimed invention is not patentable for obviousness, a petitioner must (1) identify the differences between the claim and particular disclosures in the prior art references, singly or in combination, (2) specifically explain how the prior art references could have been combined in order to arrive at the subject matter of the claimed invention, and (3) specifically explain why a POSITA would have had reasons to so combine the prior art references.

Priority.

22. I have been informed that to claim priority to a prior application, each application in the chain that leads to an earlier application must comply with the written description requirement. I have been informed that in order to satisfy the written description requirement, the specification of the provisional application must contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms, that it would enable a person of ordinary skill in the art to practice the invention claimed in the

non-provisional application. I have been informed that the provisional application must describe the invention claimed in the non-provisional application such that a person of skill in the art can clearly conclude that the inventor had invented the claimed invention by the provisional application filing date.

IV. LEVEL OF ORDINARY SKILL IN THE ART

23. Based on my review of the '169 patent and my background and experience in the field of computer science, it is my opinion that one of ordinary skill in the art as of the priority date would be someone 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.

24. I have been informed and understand that claim construction is viewed from the perspective of a person of ordinary skill in the art in question at the time of the invention. The patent was filed on April 21, 2003 and claims priority to Provisional Application 60/378,883, which was filed on April 19, 2002. I have been asked to assume that April 21, 2003 is the proper priority date for the '169 patent. However, the opinions I expressed in this report would be the same if I applied a priority date of April 2002 (the provisional filing date of the '169 patent) or April 2003 (the actual filing date of the '169 patent).

25. The '169 patent generally relates to computer content control and interactive television systems, although the lack of any limitation relating to interactive television in certain claims, such as claims 1 and 23, show that the '169 patent's scope is not so limited. *See* '169 patent at Claims 1 & 23.

26. Based on my education and experience, I am familiar with the level of knowledge that one of ordinary skill would have possessed during the relevant period of time.

27. In reaching this opinion as to the qualifications of the hypothetical person of ordinary skill in the art, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field.

28. By the priority date of the '169 patent, I was a person who had at least ordinary skill in the art.

V. OVERVIEW OF THE STATE OF THE ART IN JUNE 2001

29. By April 2002, the operation of web pages and the Internet was well understood by a POSITA. The World Wide Web had been available for over a decade. It was actively developed and connects web pages that may be viewed in a web browser. In particular, at that time a POSITA would have understood 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.

30. Downloading a web page refers to a process by which a web browser retrieves content from the Internet. Such content can be located via a Uniform Resource Locator ("URL") input to a web browser. An URL identifies a server on the Internet where the content is located, such that the user's computer can download the content. The downloaded content is generally comprised of directions that instruct the computer in how to render the web page as well as multiple "resources," that can include, for example, text, images, video, and graphics. Once the content has been downloaded, a browser may render the page, thus displaying the page to the user.

31. Rendering a web page refers to the process that a web browser uses to turn code and downloaded content from the Internet into a visually displayed page for a user. This process includes retrieving content like 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. For example, HTML (HyperText Markup Language) code may define content on a web page, such that HTML code for a web page that refers to an image, which for example, can be coded to be aligned in a certain way with a certain size border on the web page. 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.

32. “Progressive rendering” refers to a browser displaying partially constructed content as soon as possible. This means that instead of waiting for a particular content to be fully downloaded and rendered before displaying anything, a browser will render and display the content as it is downloaded and processed. Progressive rendering has been available since the mid-90’s, when browsers began to implement it as a performance strategy. Accordingly, progressive rendering was the default method for many web browsers in handling images at the time of the ’169 patent’s inception and continues to this day. 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, instead of making them wait for all the other content to render before being displayed. Thus, displaying a progressively rendered web page refers to the process of making the rendered web page available in a timely manner to a display viewable by the user.

33. In short, progressive rendering is a web development technique that enhances the perceived performance of a web page by loading and displaying content incrementally, rather than waiting for all resources (HTML, CSS, JavaScript, images, etc.) to load completely before rendering the page. This

approach improves user experience by delivering parts of the page to users as soon as they are available, reducing the time to first content display and making the page appear more responsive. It ensures that users can interact with content as soon as possible, even under suboptimal network conditions.

VI. OVERVIEW OF THE '169 PATENT

34. The '169 patent is entitled “Supporting Common Interactive Television Functionality Through Presentation Engine Syntax.” Ex. 1001 at Cover. It was filed on April 21, 2003, claims priority to a provisional application filed on April 19, 2002, and issued on May 30, 2006. *Id.*; *see also* Ex. 1002; Ex. 1003.

35. The '169 patent includes 23 claims. I have been asked to analyze Claims 1, 2, 3, 11, 12, 22, and 23.

36. The limitations in Claim 1 define a method for handling a set of resources. An example of a resource is a media file that contains audio, video, and/or graphics. *See, e.g.*, Ex. 1001 at 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.” *Id.* at 24:63–64. 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. *Id.* at 1:43–2:15.

37. The resources are organized into a *presentation*. For example, a presentation could be a web page, which is represented by HTML code in an “HTML document.” *See, e.g.*, Ex. 1001 at 11:49–61 (describing a presentation consisting of content from cnn.com).

38. Claim 1 requires use of *directives* that are *indicative* of the presentation. 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.’” *Id.* at 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>
```

Ex. 1001 at 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. *Id.*

39. 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. Ex. 1001 at Claim 1. And if there are no resources designated as prerequisite, then the presentation will be *initiated*. *Id.*

40. One example identified by the '169 patent of a *prerequisite directive* is:

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

Ex. 1001 at 21:18–20. This example directive is written in HTML (*see id.* at 20:66– 21:3) and the directive is identified by the name/value pair:

name="prerequisite." The "resource" is the background.mpg file available for download at the location pointed to by the URL. "META" is an HTML tag that is generally used to provide metadata to the web browser. In this example, the "META" HTML tag provides the web browser with an instruction regarding the rendering of the web page. The specification indicates that by including the "prerequisite" parameter in the HTML code, the web browser would prohibit the presentation until the background.mpg file is acquired. Ex. 1001 at 21:8–20.

41. In addition to the mechanism described above, in which resources are labeled as "prerequisites" using the META tag in the HTML code, the '169 patent also discloses three different options for rendering web pages. Ex. 1001 at 21:21– 31. The first option is the "progressive rendering policy," wherein the web page is rendered as soon as possible. Ex. 1001 at 21:32–36. Only those resources labeled as prerequisites, if any, cause the display of the web page to be prohibited until the prerequisites are acquired. Ex. 1001 at 21:32–36. The second option is the

“layoutComplete rendering policy,” wherein display of the web page is prohibited until information that determines the complete on-screen layout is acquired, in addition to those resources that are labeled as prerequisites, if any. Ex. 1001 at 21:37–44. The third option is the “loadComplete rendering policy,” wherein the display of the web page is prohibited until all resources are acquired, which means that all resources are prerequisites. Ex. 1001 at 21:45– 52.

42. Furthermore, the ’169 patent discloses dependent claims involving related technologies, such as further use of <META > tags and interactive television systems. These dependent claims pertain to interoperability and application of the ’169 patent.

VII. CLAIM CONSTRUCTION ANALYSIS

43. I have applied the plain meaning of the terms and phrases in the claims in my analysis, as a POSITA would have understood those terms and phrases at the relevant time (around 2003). I understand that the Board will construe the claims using the same claim construction standard that would be used in district courts. My declaration will establish that the prior art meets each of the claim limitations under any reasonable construction. I have not been asked to consider any express constructions.

VIII. GROUND 1: BERI RENDERS OBVIOUS CLAIMS 1, 2, 22, AND 23

44. I have reviewed U.S. Patent No. 6,141,018 (“Beri”), and it is my opinion that Beri renders obvious claims 1, 2, 22, and 23.¹

A. Summary of Beri

45. 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 Ex. 1006 at Cover).

46. Beri explains the structure and operation of the Internet and how some “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

¹ In the sections below for each claim element in each ground, I provide a claim chart with the claim language and excerpts from the references that provide support for the claim language. Further, I have color coded corresponding claim language and disclosure in the references. The color coding is non-limiting but is helpful to efficiently identify the support in the references. Following the claim chart, I further explain the mapping as needed.

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**.”

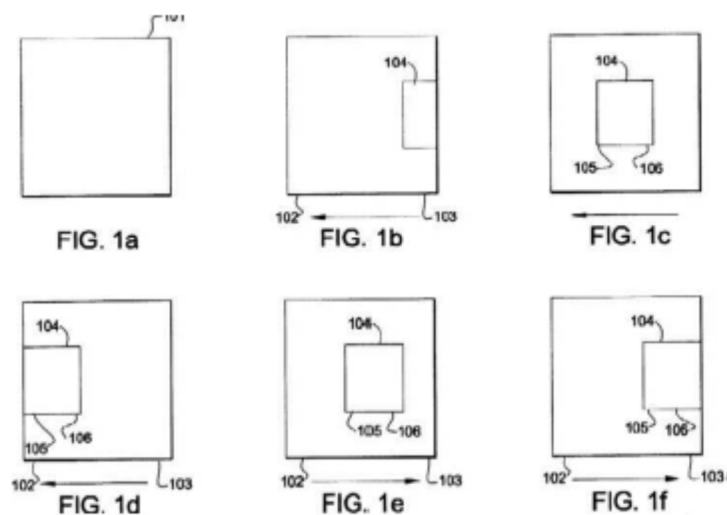
Ex. 1006 at 1:11-36 (emphases added).

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

Microsoft Corporation has defined various extension[s] 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.

Ex. 1006 at 2:1-9.

48. Beri describes a method and system for displaying resources transferred over the Internet, such as an “image in an animated marquee.” *Id.* at 2:40-53. For example, 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”:



Ex. 1006 at Figure 1, 2:42-44, 2:56-57.

49. To enable this functionality of scrolling images, an animation, 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 (*sic*) 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.

Ex. 1006 at 2:46-53; *see also id.* at 5:13-62 (listing tags and explaining implementation). ActiveX is a software framework developed by Microsoft which is primarily aimed at providing additional capabilities for Internet web browsers.

50. Beri discloses parameters, or attributes, of the ActiveX object which control the drawing of the images in the animation. *See, e.g., id.*; Ex. 1006 at 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”).

51. Beri discloses that the animation could consist of one or multiple moving images. Ex. 1006 at 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.” *Id.* at 3:54-58; 4:18-21, 4:33-35.

B. Motivation to Combine

52. Beri discloses a computer system for displaying an image of a hypertext document in an animated marquee. Ex. 1006, Abstract; *see supra* VIII.A (summary of Beri). This declaration relies on a combination of embodiments represented by Figures 4, 5, 6, 7, 8, 10, 11, and 12. *See* Ex. 1006. Figure 4 depicts the general computer system as taught by Beri. Figure 5 illustrates the relationship between components to generate Beri’s animated marquee. *Id.* at Figs. 4, 5. 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.* at Figs. 6-12.

53. It is my opinion that it would have been obvious to a POSITA to combine the multiple embodiments for the sake of facts such as cost, size, power consumption, or performance. *See, e.g.*, Ex. 1006 at 2:1-133 (describing how HTML and its extensions such as <marquee> and <object> can be combined for performance and efficiency improvements). A developer aiming to enable marquee functionality of Beri would need both software components of a marquee object and HTML viewer in addition to a computing system to execute them, thus combining the embodiments of Beri. *Id.* at 1:26-48 (describing that a viewer/browser, i.e. software, is needed to render HTML content).

54. Beri also teaches the use of ActiveX controls. ActiveX controls are reusable software components that were developed by Microsoft that can be embedded into applications to provide interactive features for animation. Ex. 1006 at 2:22-33. It is my opinion that a POSITA would also include ActiveX control functionality across embodiments given its popularity in Windows-based applications. *Id.* Beri, by incorporating ActiveX by reference, reinforced that ActiveX controls were a mainstream technical reference, such that integrating it across embodiments would have been widespread. Ex. 1006 at 2:14-19.

55. As such, it is my opinion that the different embodiments have the same overall goal of delivering an animated marquee, such that a POSITA would be motivated to combine them.

C. Reasonable Expectation of Success

56. It is my opinion that a POSITA would have had a reasonable expectation of success combining the embodiments of Beri.

57. A POSITA would have recognized 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 that rely on the same principles. *See, e.g.*, Ex. 1006 at 2:1-33 (explaining that <marquee> and <object> are both HTML extensions that are interpreted by a browser, such that all content rendered uses the same underlying HTML framework and browser execution model). 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.*; *see also* 4:65-5:22 (describing how Fig. 5 illustrates the relationship between components within a computer system described in Fig. 4).

58. Furthermore, since ActiveX was a well-known and documented technology, a POSITA would have a reasonable expectation of success in implementing it. Ex. 1006, 2:14-19 (incorporating ActiveX controls, a known interface standard, by reference given their applicability to HTML).

59. Thus, in my opinion, a POSITA would have been able to implement the obviousness modifications in this ground without undue difficulty.

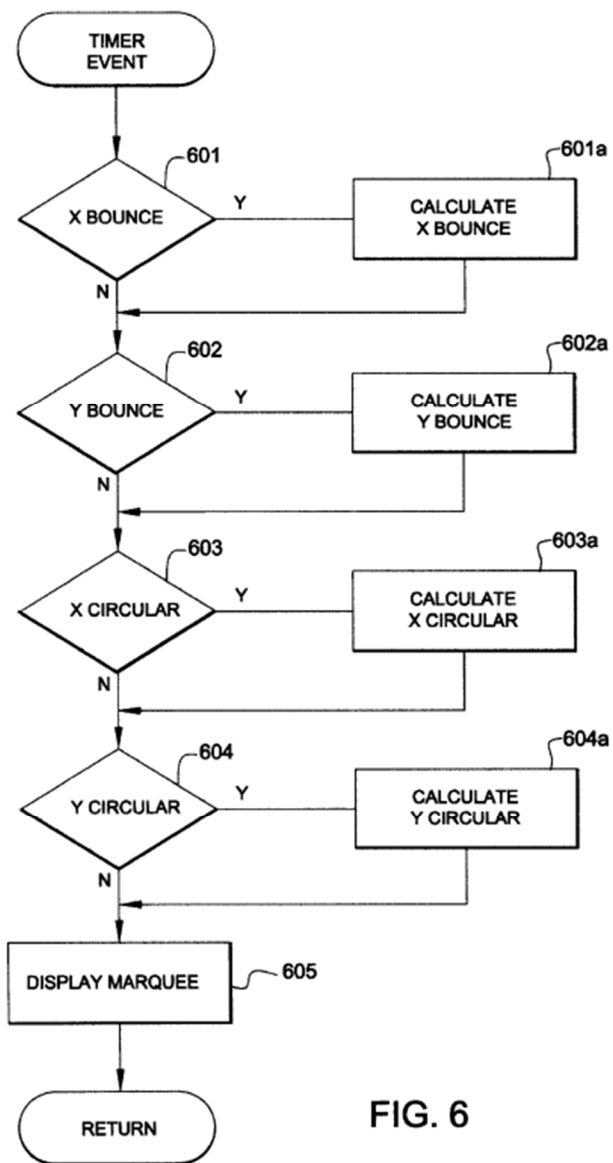
D. Beri renders obvious Claim 1

1. 1[P]: A method comprising:

60. Beri discloses this limitation.

1[P]: A
method
comprising:

Beri renders obvious this limitation based on at least the following exemplary citations:



Ex. 1006, Fig. 6

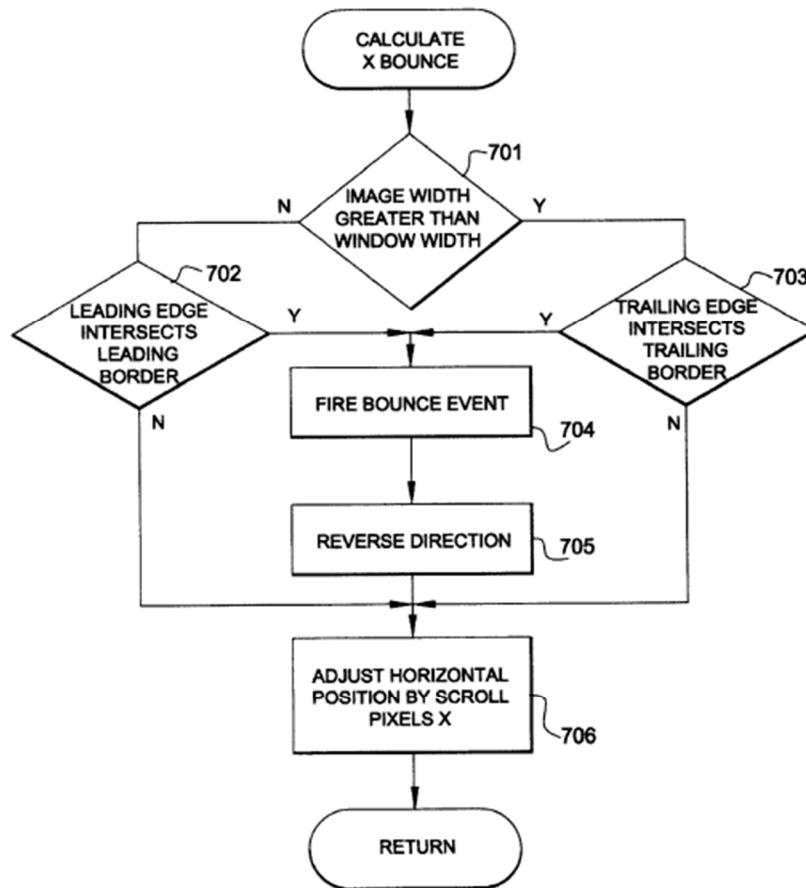


FIG. 7

Ex. 1006, Fig. 7

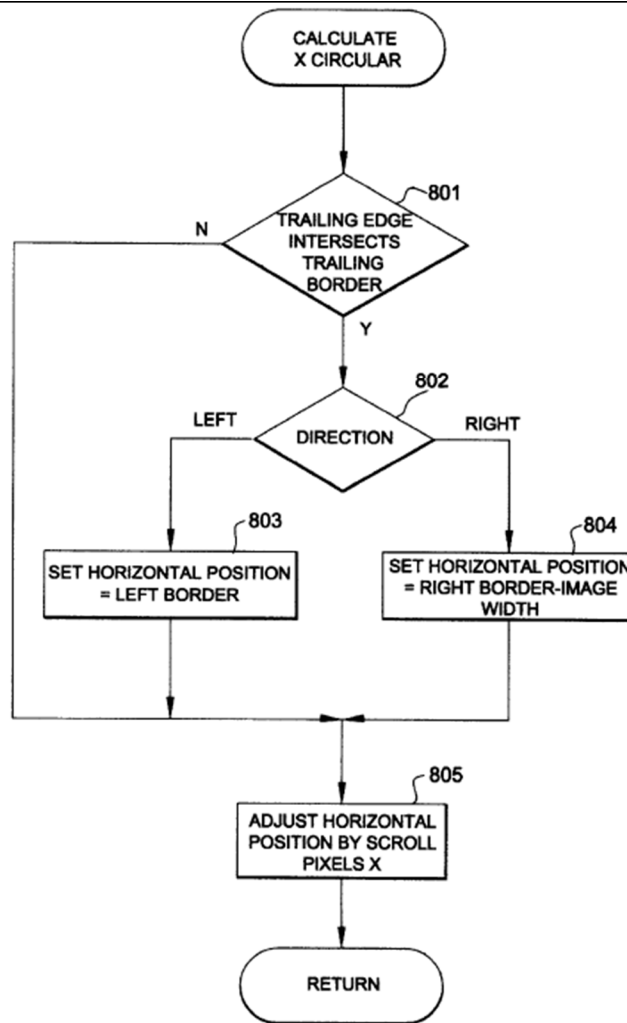


FIG. 8

Ex. 1006, Fig. 8

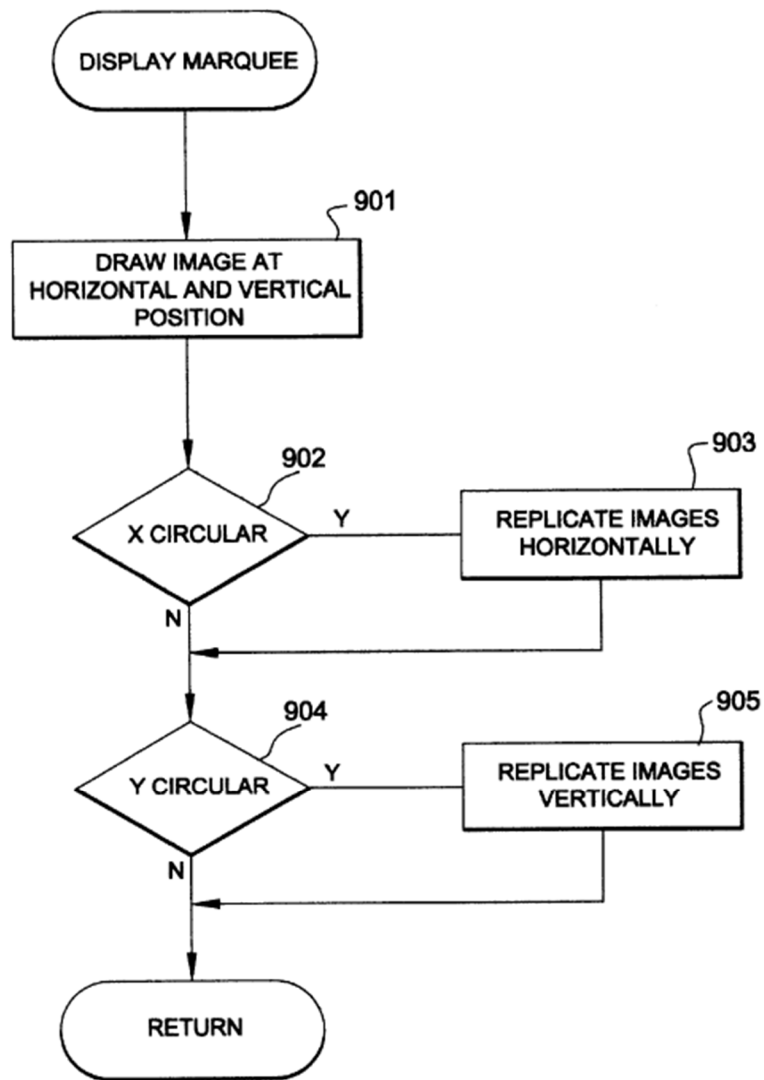


FIG. 9

Ex.

1006 at Fig. 9.

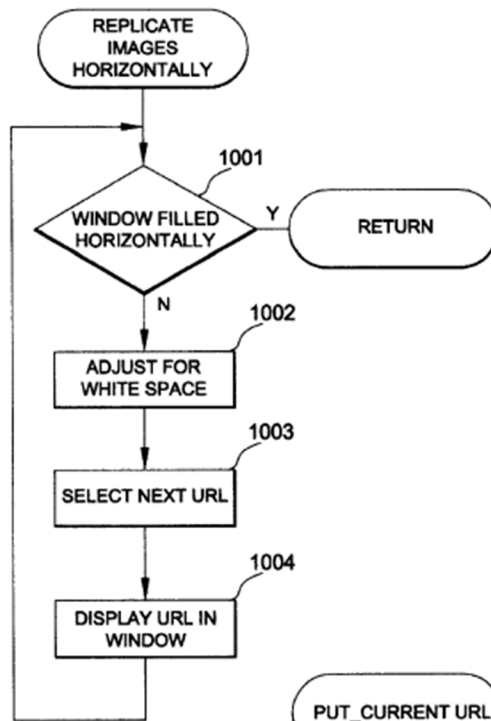


FIG. 10

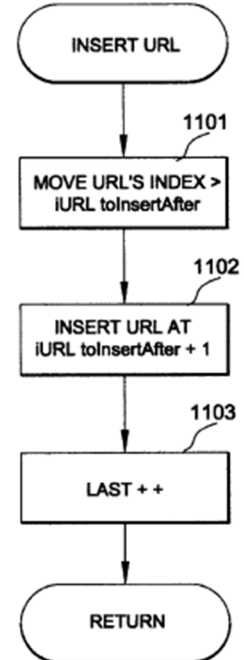


FIG. 11

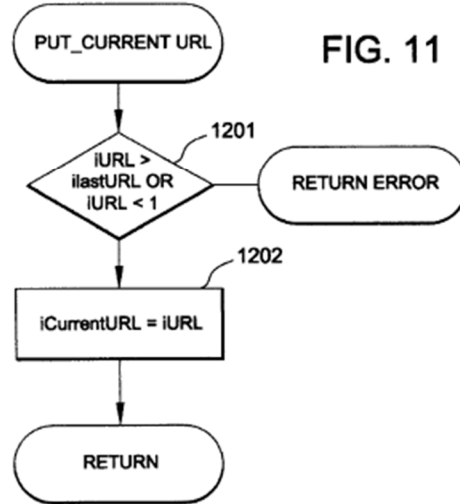


FIG. 12

Ex. 1006 at Fig. 10-12.

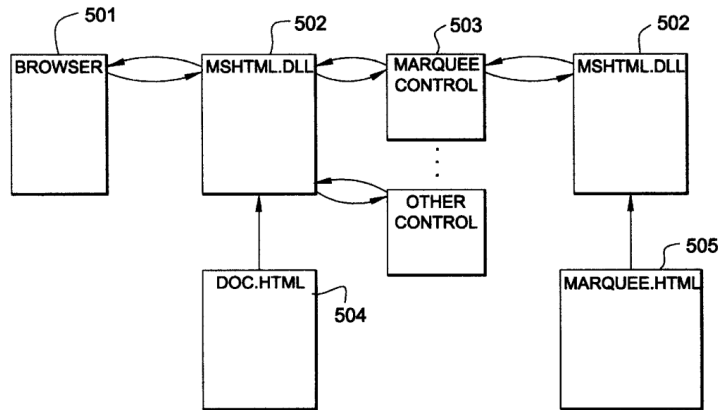


FIG. 5

Ex. 1006 at Fig. 5.

“Fig. 5 is a block diagram illustrating the interrelation between various components for generating the animated marquee.” Ex. 1006 at 2:64-67.

These components are implemented as software components that comprise machine-readable instructions.

“In one embodiment of the present invention, the animated marquee is implemented as an ActiveX object (i.e., a marquee obvious) that is identified by an <object> tag in an HTML document.” *Id.* at 5:14-39; *see also* Fig. 5.

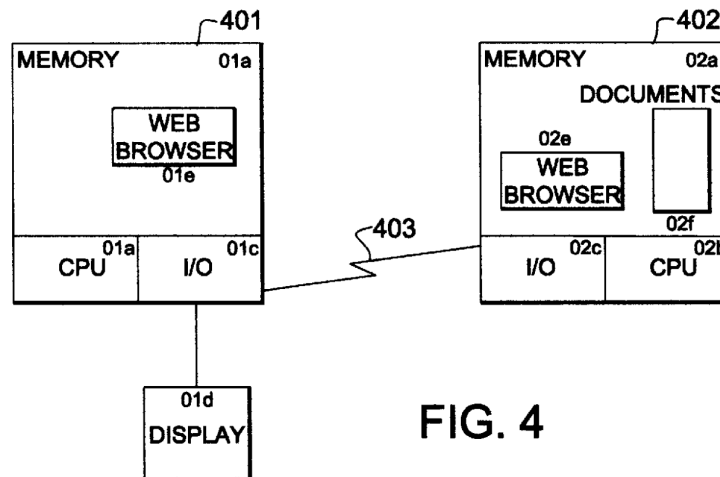


FIG. 4

Ex. 1006 at Fig. 4.

	“FIG. 4 is a block diagram illustrating a computer system for practicing the present invention. The computer system 401 contains a memory 401A, a central processing unit 401B, and an I/O interface 401C. The memory contains a Web browser 401E which receives and displays hypertext documents on display 401D. The computer system 401 is connected to one or more computer systems 402. Computer system 402 contains a memory 402A, a central processing unit 402B, and an I/O interface 402C. The memory 402A contains a Web server 402E and various hypertext documents 402F. When the Web browser requests a document through connection 403, the Web server provides that document to the Web browser. The Web browser then displays a Web page as defined by the hypertext document. The Web browser 401E supports the animated marquee of the present invention.” <i>Id.</i> at 4:65-5:12.
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61. I have identified above that Beri discloses a method, which is a sequence of steps to achieve a result.

62. Beri discloses **a method** for “generating [an] animated marquee via a marquee object,” as shown in Figures 5-12. *See also* Ex. 1006 at 4:65-5:39. The marquee object may be “identified by an <object> tag in an HTML document,” such as HTML document 504 shown in Figure 5. *Id.*

63. Beri’s Figure 4 illustrates “a computer system for practicing” Beri’s method, as shown below:

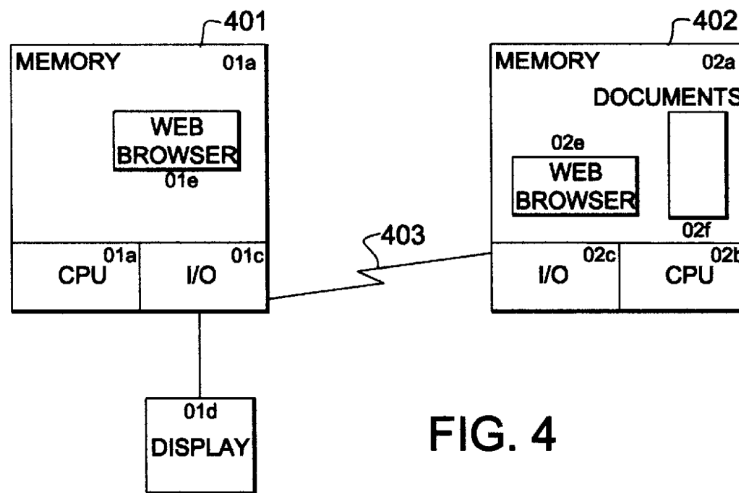


FIG. 4

Ex. 1006 at 4:65-5:12.

2. 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”

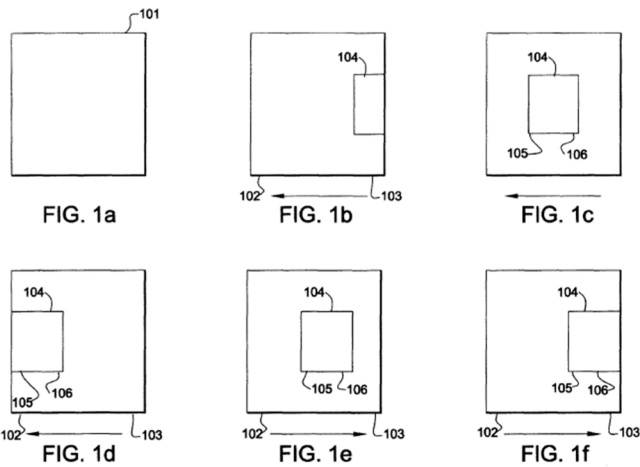
64. Beri discloses this limitation.

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 renders obvious this limitation based on at least the following exemplary citations: “The present invention provides a method and system for providing an animated marquee for display of an arbitrary image as part of a Web page. In one embodiment, the hypertext document that defines the Web page identifies the image to be displayed in a marquee window, identifies the size of the marquee window, and identifies the type of animation to be applied when the image is displayed.” <i>Id.</i> at 3:20-27. “In one embodiment of the present invention, the animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is identified by an <object> tag in an HTML document. The marquee object has various attributes whose values can be specified by the parameters of the <object> tag. FIG. 5 is a block
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	diagram illustrating the interrelation between various components for generating the animated marquee via a marquee object. The Web browser 501 invokes the HTML viewer 502 to display an HTML document 504. The HTML viewer is implemented as a dynamic link library that is loaded by the Web browser. When the HTML document 504 contains an <object> tag that identifies the marquee object class, the HTML viewer instantiates the marquee object 503. The HTML viewer then sets the attributes of the marquee object as identified by the parameters in the object tag using OLE Automation to invoke methods of the marquee object. The attributes include the URL of the image to be displayed in the marquee window. When the URL identifies another HTML document, the marquee object then invokes the HTML viewer (as indicated by the second copy of the HTML viewer 502) to generate the image. The marquee object then applies the animation to the image and displays the animated image in the marquee window. The following table lists the attributes that can be set along with a description of the attributes.” <i>Id.</i> at 5:13-63.
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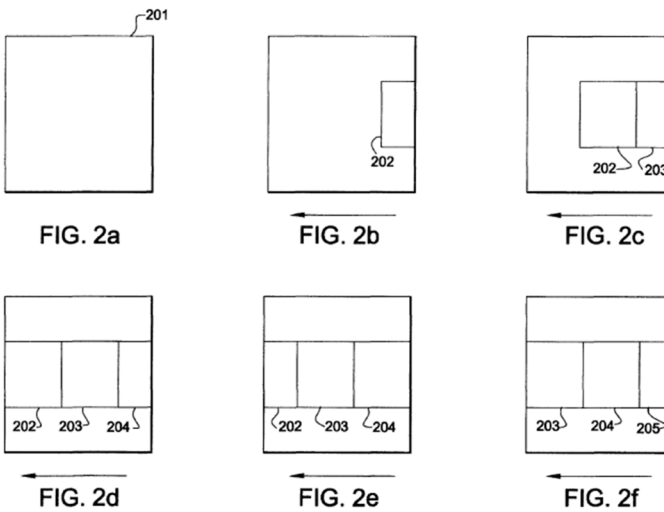
Petition for *Inter Partes* Review of U.S. Patent No. 7,055,169
Declaration of Immanuel Freedman, Ph.D.

ATTRIBUTE	DESCRIPTION
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 progressively 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.
<i>Id.</i>	
“The marquee object then applies the animation to the image and displays the animated image in the marquee window.” Ex. 1006 at 5:34-36.	
“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.” <i>Id.</i> at 4:37-64.	



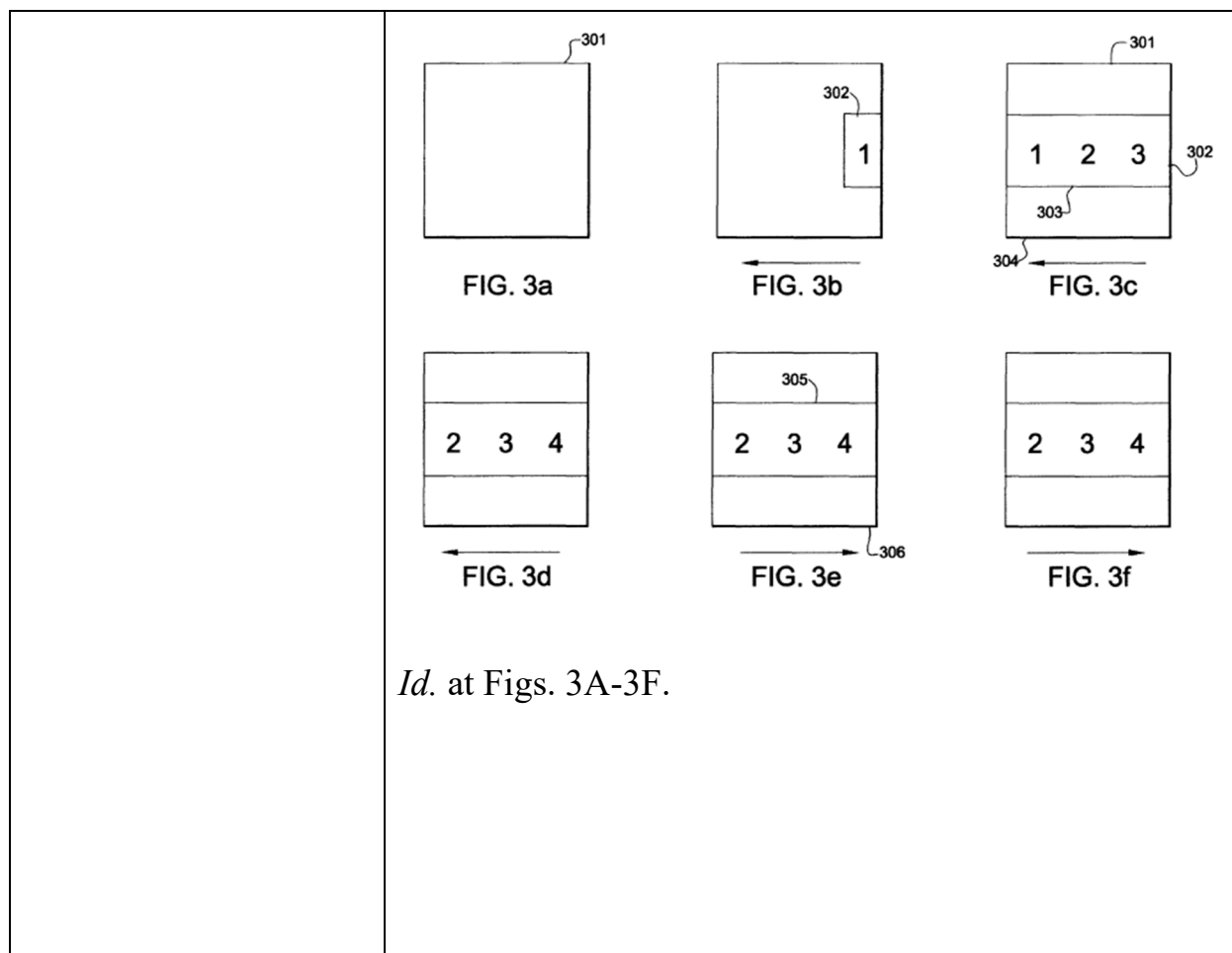
Id. at Figs. 1A-1F.

“FIGS. 1A-1F illustrate an animated marquee with the bounce visual effect.” *Id.* at 3:60-4:21.



Id. at Figs. 2A-2F.

“FIGS. 2A-2F illustrate an animated marquee with a circular visual effect.” *Id.* at 4:22-23.



65. I have identified above that Beri discloses this element by describing a method that receives directives that are indicative of an audio, video, and/or graphic presentation that requires a set of resources.

66. It is my opinion that Beri discloses **an audio, video, and/or graphic presentation** in the form of an “animated image” or “animated marquee.” Beri’s animated marquee is an “animated image” that is “display[ed]” “in the marquee window,” which is a portion of a web page. Ex. 1006 at 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.

67. The “animated image” or “animated marquee” **requires** one or more images (**a set of resources**). Ex. 1006 at 5:13-63, 4:33-36, 3:20-27, 3:52-54. Each image is referred to using a URL. *Id.* The URL points directly to an image file online, where each image link URL points to a unique image.

68. 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**). Ex. 1006 at 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). As Beri explains, “the animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is 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.” Ex. 1006 at 5:13-39. The <object> tag(s) have “parameters” that define the “attributes” of the marquee object, and consequently, the animated marquee. *Id.* For example, a Web browser **receiv[es]** an HTML document

containing an <object> tag when it requests it from the Web server. Ex. 1006 at 4:65-5:13. In receiving an HTML document with <object> tags, a Web browser can then read the document and implement what its tags indicate for animated marquees.

69. Beri explains this point in greater detail in association with Figure 5. Beri explains that the animated marquee is embedded in an HTML document using the <object> tag. Ex. 1006 at 5:17-60. The marquee is an ActiveX control that is instantiated by the HTML viewer. *Id.* Thus, because it is an ActiveX control, when a web browser launches the HTML viewer to render an HTML document, upon detecting a marquee object, the HTML view will instantiate the marquee. *Id.* In my opinion, as an ActiveX control, the marquee's object attributes are based on parameters specified in the <object> tag, such that 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.*

70. Alternatively, the web page is also **an audio, video, and/or graphic presentation**, at least because it includes “animated image” or “animated marquee.” Both involve movement and animation.

3. 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;”

71. Beri discloses this limitation.

1[B]: “determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition (<i>sic</i>) of a subset of said set of resources is a prerequisite for initiating the presentation;”	Beri renders obvious this limitation based on at least the following exemplary citations: “In one embodiment of the present invention, the animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is identified by an <object> tag in an HTML document. The marquee object has various attributes whose values can be specified by the parameters of the <object> tag. FIG. 5 is a block diagram illustrating the interrelation between various components for generating the animated marquee via a marquee object. The Web browser 501 invokes the HTML viewer 502 to display an HTML document 504. The HTML viewer is implemented as a dynamic link library that is loaded by the Web browser. When the HTML document 504 contains an <object> tag that identifies the marquee object class, the HTML viewer instantiates the marquee object 503. The HTML viewer then sets the attributes of the marquee object as identified by the parameters in the object tag using OLE Automation to invoke methods of the marquee object. The attributes include the URL of the image to be displayed in the marquee window. When the URL identifies another HTML document, the marquee object then invokes the HTML viewer (as indicated by the second copy of the HTML viewer 502) to generate the image. The marquee object then applies the animation to the image and displays the animated image in the marquee window. The following table lists the attributes that can be set along with a description of the attributes.” <i>Id.</i> at 5:13-63.
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Petition for *Inter Partes* Review of U.S. Patent No. 7,055,169
Declaration of Immanuel Freedman, Ph.D.

ATTRIBUTE	DESCRIPTION
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 progressively 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.

Id.

ATTRIBUTE	DESCRIPTION
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 progressively 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.

Id. at 5:57 (boxed in green).

	“If the DrawImmediately parameter is set, the image will scroll before the image is fully loaded (i.e., formatted). This gives the effect of progressive rendering.” <i>Id.</i> at 6:42-44. “In addition, the parameters can be set to indicate whether the URL is to be drawn immediately or progressively.” <i>Id.</i> at 3:48-50. “The method of claim 9 wherein portions of the image are displayed immediately as the image is generated in accordance with the page description language.” <i>Id.</i> at 11:24-26. “The parameters can be set to indicate whether the URL is to be drawn immediately or progressively.” <i>Id.</i> at 3:48-50. Slide Image from Bottom Only When Finished Formatting and Rendering <PARAM NAME=“Loops Y” VALUE=0> <PARAM NAME=“ScrollPixelsX” VALUE=0> <PARAM NAME=“ScrollPixelsY” VALUE=-100> <PARAM NAME=“DrawImmediately” VALUE=0>“) <i>Id.</i> at 8:25-30 (emphases added).
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72. I have identified above that Beri discloses this element by describing a method that determines whether a directive includes a prerequisite directive, **DrawImmediately**, that indicates that a subset of said resources is a prerequisite for initiating a presentation.

73. As discussed above, <object> tag(s) have “parameters” that define the “attributes” of the marquee object, and consequently, the animated marquee. It is my opinion that this is because the attributes describe the animation of the marquee. Ex. 1006 at 5:13-39 and Beri’s **DrawImmediately** is one such parameter.

74. 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.” In the alternative, when disabled or set to 0, **DrawImmediately** prohibits the web browser from displaying the web page until after all the resources defined in the marquee are downloaded. Ex. 1006 at 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. In particular, Beri explains that the **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. Ex. 1006 at 2:40-53, 3:48-50, 6:55-57.

75. If **DrawImmediately** is enabled, or set to 1, it is *not* a **prerequisite directive** since the resources are designated as not prerequisites and disabling it causes the web browser to initiate display of the marquee progressively before it finishes downloading the images from the Internet. As Beri explains, “[i]f the **DrawImmediately** parameter is set, the image will scroll before the image is fully

loaded (i.e., formatted). This gives the effect of progressive rendering.” Ex. 1006 at 6:42-44.

76. Progressive rendering displays content as it loads, allowing users to see and interact with parts of a web page or resource before the entire file has been downloaded. In particular, Beri discloses a method “wherein portions of the image are displayed immediately as the image is generated in accordance with the page description language.” Ex. 1006 at 11:24-26. As such, what has been generated will be displayed and while portions of the image are not yet generated because they are not yet downloaded or formatted, they are not yet displayed. *See* Ex. 1006 at 3:48-50 (“the parameters can be set to indicate whether the URL is to be drawn immediately or progressively”).

77. Beri explains that when the DrawImmediately directive is disabled or set to 0, it has the effect of designating the resources in the marquee as prerequisites because they must be downloaded before the presentation can be initiated:

Slide Image from Bottom Only When Finished Formatting and Rendering

```
<PARAM NAME=“Loops Y” VALUE=0>  
<PARAM NAME=“ScrollPixelsX” VALUE=0>  
<PARAM NAME=“ ScrollPixels Y” VALUE=-100>  
<PARAM NAME=“DrawImmediately” VALUE=0>“) . . . .
```

Ex. 1006 at 8:25-30 (emphases added).

It is my opinion that a POSITA would have understood this code to indicate that the presentation would not be initiated until all resources are loaded, because the DrawImmediately directive is disabled.

78. It is my opinion that all the **resources** (the one or more images) of the “animated image” or “animated marquee” are a proper subset of the resources, which **subset of said set of resources is a prerequisite for initiating the presentation**. Beri’s animated marquee may comprise one or more URLs, each of which points to a single image. Ex. 1006 at 5:56; 6:46-57. When the DrawImmediately directive is disabled, all of the one or more images pointed to by the URL attribute comprise a **subset of said set of resources**. Upon disabling DrawImmediately, Beri’s system treats URLs as resources because only some will be rendered.

79. In the context of the ’169 patent, it is my opinion that the **subset of said set of resources** means some or all of the set of resources (a proper subset). The preferred embodiment of a “prerequisite directive” in the ’169 patent teaches all the resources as a subset. Ex. 1001, 21:8-20. In the preferred embodiment, “no rendering for the page may occur prior to acquiring ‘background.mpg’ <META name=‘prerequisite’ content=‘http://www.cnn.com/background.mpg’>.” *Id.* This implies that all the background.mpg resource must be acquired to initiate the presentation. In my opinion, “all” is further consistent with the purpose of the

“prerequisite directive” in the ’169 patent, which is that “[w]hen rendering graphics as they are downloaded, it 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.

80. It is also my opinion that the specification suggests that any number of resources may be labeled as prerequisites and also contemplates an embodiment in which *all* of the resources are labeled “prerequisite resources,” in which case 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.

Ex. 1001 at 21:45-52 (emphasis added). The discussion above contemplates “labeling all resources as prerequisites,” and indicates that this would relate to the **loadComplete** rendering policy (except for the timing of when the OnLoad event is triggered). *Id.* Thus, it is my opinion that the specification teaches that the META tag mechanism may be used to label all the resources as prerequisites, and in so doing would be an alternative to the loadComplete rendering policy, with only a difference in when events are triggered. *Id.* A POSITA would understand that both

alternatives are viable options for a content author who wants all resources to be prerequisites, given the similar teleological functionality.

81. Alternatively, under the interpretation that the web page is a **presentation**, it is my opinion that the HTML document and/or all objects in the HTML document correspond to **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 constitute **a subset of the resources** of the entire web page. A POSITA would have understood that the ActiveX marquee contemplated by Beri is only one possible part of a web page, and that web pages may contain other resources, such as images or text, in addition to the ActiveX object marquee. Therefore, it is my opinion that the ActiveX marquee may be considered a subset of the resources on a web page because it may one of the components that are referenced, loaded, and executed as part of fully rendering a web page. A POSITA would have understood that the term “resource” refers to any external file, object, script, image, or content that a web page pulls and utilizes. Beri explains that “Web pages are usually defined to include graphical components” such as a “bitmap” within a web page. Ex. 1006 at 1:60-67. A POSITA would have understood this disclosure to refer to resources that may be additional to the ActiveX object Beri uses to animate the marquee. A POSITA would have understood that default marquee implementation is set to progressive

rendering. Thus, if DrawImmediately is disabled, and if the web page comprises images additional to the marquee object, the resources additional to the marquee object will then be treated as prerequisites. *Id.*

82. It is my opinion that Beri **determine[es] whether** an 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. For example, Beri's web browser has software designed to process the directives contained in the ActiveX object that Beri uses to animate the marquee. Ex. 1006 at 4:65-5:13; 2:10-53. Here, the ActiveX object handles animation such that it notifies a browser when an event such as a mouse click occurs. Ex. 1006 at 2:24-25. The browser will respond based upon the notification that a mouse has been clicked. Ex. 1006 at 2:25-26. For example, potential responses include the browser executing a script or updating the object's parameters. *Id.* at 2:26-30. Therefore, the browser makes decisions in processing events and responding based upon the directives in the ActiveX object.

83. It is also my opinion that it would have been obvious to implement the inverse scheme so that the 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. *See,*

e.g., Ex. 1006 at 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 would thereby be instructed to not display what is generated until after an allotted time. It is my opinion that during this time, the web browser may render the image in full while a DrawDelayed prerequisite directive is active.

4. 1[C]: “initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and”

84. Beri discloses this limitation.

1[C]: “initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive ² ; and”	Beri renders obvious this limitation based on at least the following exemplary citations: “In one embodiment of the present invention, the animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is identified by an <object> tag in an HTML document. The marquee object has various attributes whose values can be specified by the parameters of the <object> tag. FIG. 5 is a block diagram illustrating the interrelation between various components for generating the animated marquee via a marquee object. The Web browser 501 invokes the HTML viewer 502 to display an HTML document 504. The HTML viewer is implemented as a dynamic link library that is loaded by the Web
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² I mapped the determining step in Element 1b.

	browser. When the HTML document 504 contains an <object> tag that identifies the marquee object class, the HTML viewer instantiates the marquee object 503. The HTML viewer then sets the attributes of the marquee object as identified by the parameters in the object tag using OLE Automation to invoke methods of the marquee object. The attributes include the URL of the image to be displayed in the marquee window. When the URL identifies another HTML document, the marquee object then invokes the HTML viewer (as indicated by the second copy of the HTML viewer 502) to generate the image. The marquee object then applies the animation to the image and displays the animated image in the marquee window. The following table lists the attributes that can be set along with a description of the attributes.” Ex. 1006 at 5:13-37. “The parameters can be set to indicate whether the URL is to be drawn immediately or progressively.” <i>Id.</i> at 3:48-50.
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85. I have identified above that Beri discloses this element by describing a method for initiating a presentation after determining that one or more directives do not include a prerequisite directive, that, in turn, requires that a subset of resources is acquired to initiate a presentation.

86. Beri discloses *initiating said presentation*. It is my opinion that Beri discloses that the presentation is controlled, including being initiated, by a web browser that uses specified directives implemented by an ActiveX object that controls how the animation is generated. Ex. 1006 at 5:13-37. More specifically, because the web browser upon encountering the object will pass the directives to the HTML viewer, this will result in creating and configuring the marquee object. This acts as the moment of instantiation because it provides the attributes which loads the images in order to animate them. Otherwise, the images are not loaded, meaning that the marquee has yet to be instantiated.

87. It is my opinion that Beri discloses “*in response to determining the one or more directives do not include said prerequisite directive.*” Beri discloses that if the one or more directives do not include a prerequisite directive (i.e., the DrawImmediately feature is enabled or set to 1), then 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. Ex. 1006 at 3:48-50, 5:13-39. Thus, 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 consider or account for other conditions. The presence of DrawImmediately thus effectively overrides prerequisite logic that would

otherwise delay the start of rendering. It is my opinion that a POSITA would understand that this directive changes the web browser's behavior from conditional rendering to immediate rendering because it is an instruction specifically designed to set immediate or delayed rendering.

5. [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.”

88. Beri discloses this limitation.

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 ³ .”	Beri renders obvious this limitation based on at least the following exemplary citations: “The <object> tag includes parameters that are to be provided to the computer code to control its execution. The computer code is an ActiveX object (i.e., ActiveX control) that supports an interface standard that is described in Understanding ActiveX and OLE, by David Chappell and published by Microsoft Press in 1996, which is hereby incorporated by reference. The <object> tag includes information that identifies the object and the size of the object window in which the object can display the content that it generates. The ActiveX standard defines a mechanism through which an object can notify the browser of certain events. For example, if a user clicks on the object window, the object could notify the browser that a click was received. The browser could then take some action. The HTML document may even include instructions in a scripting language, such as Visual Basic (VB) Scripting, that are to be executed when an object generates an event. When the browser is notified of an
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³ I mapped the *determining* step in Element 1[b].

	event, it then executes the script for that event. The ActiveX standard also defines a mechanism by which the browser can set attributes of the object. The object exposes its functionality via OLE automation. The <marquee> tag provides a useful, but limited mechanism, for scrolling text on a Web page. It would be desirable to have a mechanism that provides sophisticated animation of arbitrary information on a Web page.” Ex. 1006 at 2:13-37. “The parameters can be set to indicate whether the URL is to be drawn immediately or progressively.” <i>Id.</i> at 3:48-50. “If the DrawImmediately parameter is set, the image will scroll before the image is fully loaded (i.e., formatted). This gives the effect of progressive rendering.” <i>Id.</i> at 6:42-44. “In one embodiment of the present invention, the animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is identified by an <object> tag in an HTML document. The marquee object has various attributes whose values can be specified by the parameters of the <object> tag. FIG. 5 is a block diagram illustrating the interrelation between various components for generating the animated marquee via a marquee object. The Web browser 501 invokes the HTML viewer 502 to display an HTML document 504. The HTML viewer is implemented as a dynamic link library that is loaded by the Web browser. When the HTML document 504 contains an <object> tag that identifies the marquee object class, the HTML viewer instantiates the marquee object 503. The HTML viewer then sets the attributes of the marquee object as identified by the parameters in the object tag using OLE Automation to invoke methods of the marquee object. The attributes include the URL of the image to be displayed in the
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	marquee window. When the URL identifies another HTML document, the marquee object then invokes the HTML viewer (as indicated by the second copy of the HTML viewer 502) to generate the image. The marquee object then applies the animation to the image and displays the animated image in the marquee window. The following table lists the attributes that can be set along with a description of the attributes.” <i>Id.</i> at 5:13-63. <table><tr><th>ATTRIBUTE</th><th>DESCRIPTION</th></tr><tr><td>ScrollStyleX</td><td>Horizontal scroll style: “circular” or “bounce.”</td></tr><tr><td>ScrollStyleY</td><td>Vertical scroll style: “circular” or “bounce.”</td></tr><tr><td>ScrollDelay</td><td>Time in milliseconds between each movement of the image in the marquee window.</td></tr><tr><td>LoopsX</td><td>Number of times the image scrolls horizontally if ScrollStyleX is “circular,” or number of times the image bounces horizontally if ScrollStyleX is “bounce.”</td></tr><tr><td>LoopsY</td><td>Number of times the image scrolls vertically if ScrollStyleY is “circular,” or number of times the image bounces vertically if ScrollStyleY is “bounce.”</td></tr><tr><td>ScrollPixelsX</td><td>Number of pixels to move the image horizontally in the marquee window each ScrollDelay.</td></tr><tr><td>ScrollPixelsY</td><td>Number of pixels to move the image vertically in the marquee window each ScrollDelay.</td></tr><tr><td>URL</td><td>URL of the image.</td></tr><tr><td>DrawImmediately</td><td>Flag indicating to progressively render the image.</td></tr><tr><td>Whitespace</td><td>Amount of white space between images.</td></tr><tr><td>PageFlippingOn</td><td>If multiple URLs; indicates that the next image is to be displayed when the marquee window receives a click.</td></tr><tr><td>Zoom</td><td>Percentage of the original size of the image.</td></tr><tr><td>WidthOffPage</td><td>Width in pixels of the image.</td></tr></table> <i>Id.</i>	ATTRIBUTE	DESCRIPTION	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 progressively 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.
ATTRIBUTE	DESCRIPTION																												
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Zoom	Percentage of the original size of the image.																												
WidthOffPage	Width in pixels of the image.																												

89. I have identified above that Beri discloses this element by describing prohibiting initiating a presentation until a subset of resources are acquired via DrawImmediately.

90. It is my opinion that Beri discloses **prohibiting initiation of said presentation**. Beri discloses that the presentation is controlled by a web browser that utilizes specified directives implemented by an ActiveX object to control how the animation is generated. Ex. 1006 at 2:13-37. Beri teaches the **prohibition of initiation of said presentation** because the animation would otherwise be initiated by the web browser without the ActiveX control. By setting an ActiveX control to prohibit initiation of a presentation, Beri's animated presentation does not begin until a subset of resources is acquired as per the ActiveX control. Only once the image(s) is (are) acquired will the marquee object be rendered.

91. It is also my opinion that 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**. Thus, if the DrawImmediately directive is disabled or set to 0, then the presentation will be prohibited until the subset of images, *i.e.*, the images at the URLs, are downloaded. Ex. 1006 at 3:48-50, 6:42-44; 5:13-62.

E. 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."

92. Beri renders obvious this 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 limitation based on at least the following exemplary citations: “The HTML document may even include instructions in a scripting language, such as Visual Basic (VB) Scripting, when an object generates an event.” Ex. 1006 at 2:26-29 <i>Visual Basic is a scripting language.</i> “The animated marquee is implemented as an ActiveX object (i.e., a marquee object) that is identified by an <object> tag in an HTML document.” Ex. 1006 at 5:15-17. <i>HTML is a markup language.</i>
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93. I have identified above that Beri discloses this element since Beri discloses resources that function as prerequisite directives consisting of a scripting language or a markup language.

94. Beri discloses that the prerequisite directive can be written with *a markup language, a scripting language, or a style sheet*. The ’169 patent states that “HTML” is a type of “markup language.” Ex. 1001 at 9:13. Beri uses HTML, which is one of the most well-known and utilized markup languages. *See, e.g.,* Ex.

1006 at 5:32-39. Beri teaches the use of the HTML markup language as the vehicle for the exemplary prerequisite directive (DrawImmediately), which was rendered obvious by Beri above. Ex. 1006 at 5:13-62. Furthermore, it is my opinion that HTML is well-known by a POSITA. The '169 patent also states that a “scripting language” is used to control multimedia routing. Ex. 1006 at 12:20-29 (“scripting language... to control... sources of audio and video”). A scripting language is used to control web page behavior. Beri also teaches a scripting language that executes a certain script in response to a certain event, which is a form of control, since said response would not otherwise occur unless the prerequisite directive is set.

F. Beri renders obvious Claim 22

1. 22[P]: “A client device in an interactive television system, said device comprising:”

95. It is my opinion that claim 22 is disclosed or rendered obvious by Beri.

22[P]: “A client device in an interactive television system, said device comprising:”	Beri renders obvious this limitation based on at least the following exemplary citation: “A method and system for displaying an arbitrary image in an animated marquee.” Ex. 1006 at 2:40-41.
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96. I have identified above that Beri discloses this element since displaying animated marquees is a well-known feature that could have been

implemented in interactive television system middleware such as that provided by Microsoft utilizing software components written in Active X, or the Multimedia Home Platform utilizing software components written in Java.

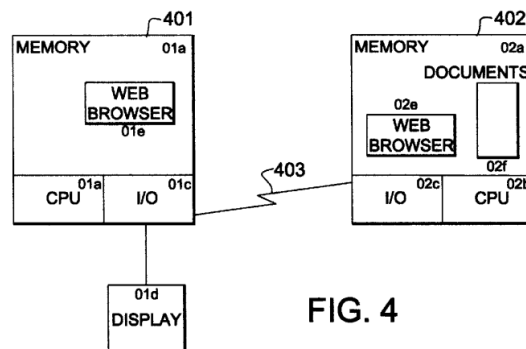
97. Beri discloses “a method and system for displaying an arbitrary image in an animated marquee.” Ex. 1006 at 2:40-41. It is my opinion that a **client device in an interactive television system** is an intended environment within the scope of Beri’s system and does not serve as necessary structure for the claim terms.

2. 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”

98. Beri discloses this limitation. *See Sec. VII.A.2.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 renders obvious this limitation based on at least the following exemplary citations:



Ex. 1006 at Fig. 4.

Beri discloses a receiver (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.
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99. I have identified above that Beri discloses this element by disclosing a receiver that can receive signals corresponding to directives that are indicative of an audio, video, and/or graphic presentation requiring a set of resources via a display configured with a CPU.

100. Beri discloses a receiver (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.

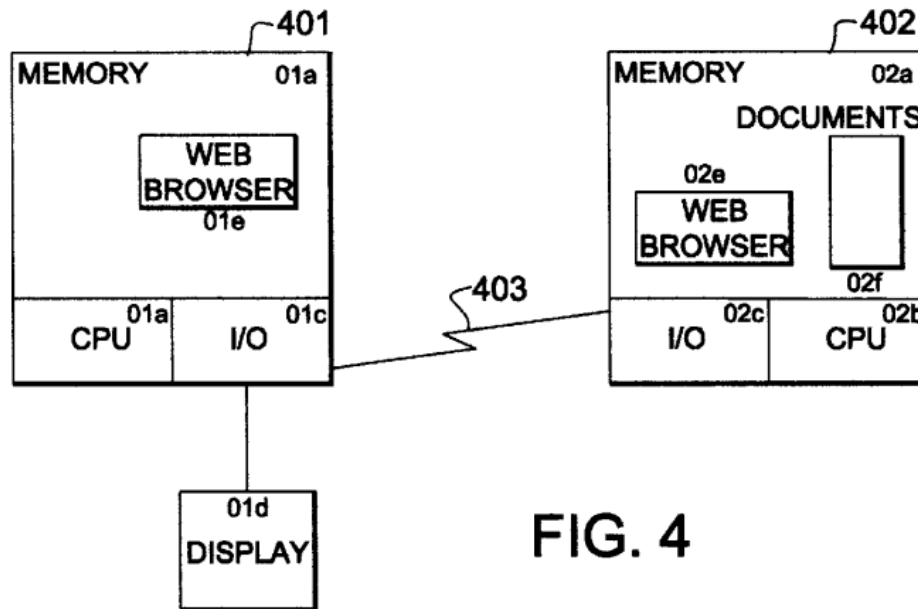


FIG. 4

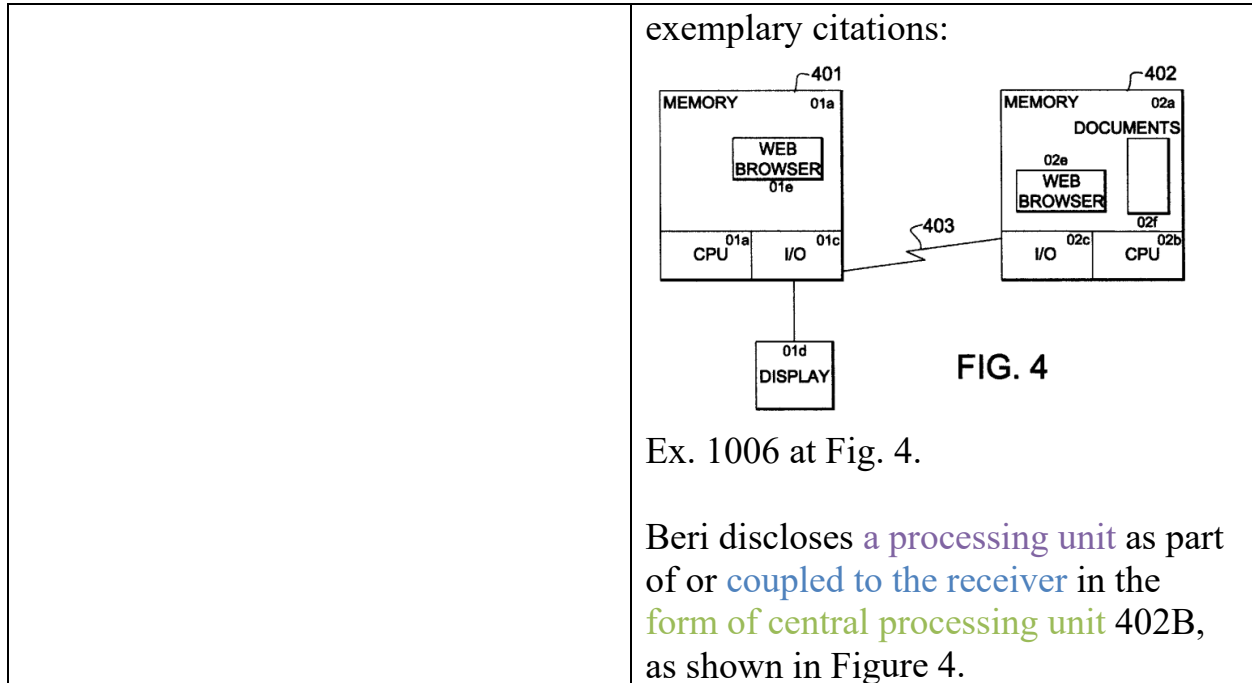
Ex. 1006 at Fig. 4.

101. It is my opinion that a POSITA would also understand that this graphical system also **requires a set of system resources**, including CPU processing cycles, memory access (401a), and rendering options via the display interface (401d).

3. 22[B]: “a processing unit coupled to said receiver, wherein said processing unit is configured to:”

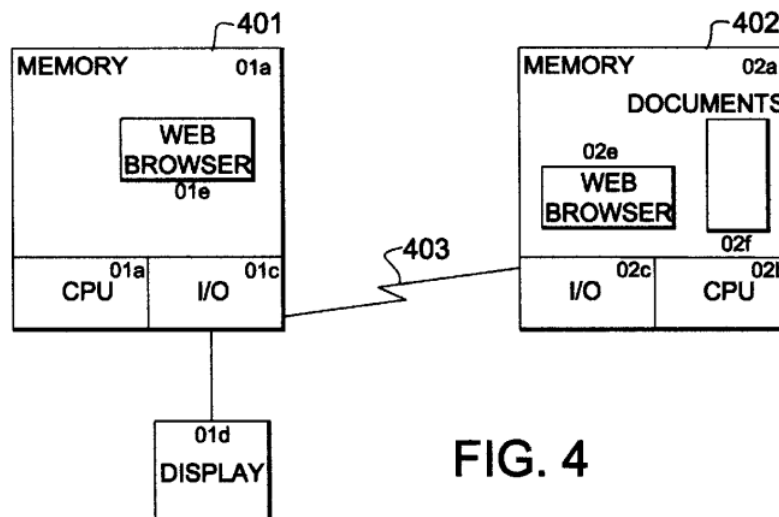
102. Beri discloses this limitation.

22[B]: “a processing unit coupled to said receiver, wherein said processing unit is configured to:”	Beri renders obvious this limitation based on at least the following
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103. I have identified above that Beri discloses this element by describing a processing unit that is coupled with a receiver.

104. 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.



4. The remainder of Claim 22

105. Beri discloses the remainder of claim 22. I have identified the parallel claim language between claim 1 and claim 22 below and refer to my analysis above for claim 1. I have bolded the minimal differences below.

Claim 1	Claim 22
1[B]. determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition (<i>sic</i>) of a subset of said set of resources is a prerequisite for initiating the presentation;	22[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;
1[C]. initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and	22[D]. initiate said presentation, in response to determining the one or more directives do not include said prerequisite directive; and
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.	22[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.

106. I have identified above that Beri discloses determining if a prerequisite directive requires acquiring certain resources before starting a presentation and either initiating the presentation if not required or delaying until those resources are acquired.

107. It is my opinion that 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. Specifically, 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]. *See, supra* Secs. VIII.B-D.2-5 (including my opinion for the combination of embodiments in Beri). Further, it is my opinion that the differences between the claims is minimal (e.g., “determining” versus “determine”). The core semantic meaning remains essentially the same in context.

G. Beri renders obvious Claim 23

1. 23[P]: “A computer readable medium comprising program instructions executable by a computer:”

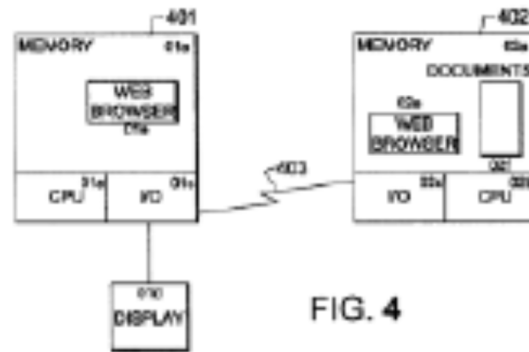
108. Beri discloses this limitation.

23[P]: “A computer readable medium comprising program instructions executable by a computer:”	Beri renders obvious this limitation based on at least the following exemplary citations: FIG. 4 Ex. 1006 at Fig. 4.
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	“FIG. 4 is a block diagram illustrating a computer system for practicing the present invention. The computer system 401 contains a memory 401A, a central processing unit 401B, and an I/O interface 401C. The memory contains a Web browser 401E which receives and displays hypertext documents on display 401D. The computer system 401 is connected to one or more computer systems 402. Computer system 402 contains a memory 402A, a central processing unit 402B, and an I/O interface 402C. The memory 402A contains a Web server 402E and various hypertext documents 402F. When the Web browser requests a document through connection 403, the Web server provides that document to the Web browser. The Web browser then displays a Web page as defined by the hypertext document. The Web browser 401E supports the animated marquee of the present invention.” <i>Id.</i> at 4:65-5:13.
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109. I have identified above that Beri discloses a computer system.

110. In my opinion, Beri discloses a **computer readable medium comprising program instructions executable by a computer** because by disclosing a computer with a memory that contains a web browser, where the memory can store software instructions.



Ex. 1006 at Fig. 4, 4:65-5:13; Therefore, it would be obvious to a POSITA that a computer that contains memory can store software, e.g. a web browser.

2. The remainder of Claim 23

111. Beri discloses the remainder of claim 23. I have identified the parallel claim language between claim 1 and claim 23 below and refer to my analysis above for claim 1. I have bolded the minimal differences below.

Claim 1	Claim 23
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;	23[A]. receive directives which are indicative of an audio, video and/or graphic presentation which requires a set of resources;
1[B]. determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition (<i>sic</i>) of a subset of said set of resources is a prerequisite for initiating the presentation;	23[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;
1[C]. initiating said presentation, in response to determining the one or more	23[C]. initiate said presentation, in response to determining the one or

directives do not include said prerequisite directive; and	more directives do not include said prerequisite directive; and
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.	23[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.

112. I have identified above that Beri discloses determining if a prerequisite directive requires acquiring certain resources before starting a presentation and either initiating the presentation if not required or delaying until those resources are acquired.

113. It is my opinion that 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. Specifically, 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]. *See supra* Secs. VIII.B-D.2-5 (including my opinion for the combination of embodiments in Beri). It is my opinion that the differences between the claims is minimal (e.g., “determining” versus “determine”). The core semantic meaning remains essentially the same in context.

**IX. GROUND 2: BERI IN COMBINATION WITH HARRINGTON
RENDER OBVIOUS CLAIMS 3 AND 22**

114. I have reviewed Beri and U.S. Patent No. 7,120,871 (“Harrington”), and it is my opinion that Beri in combination with Harrington renders obvious claims 3 and 22.

A. Summary of Harrington

115. Harrington is a United States Patent entitled “Enhanced Video Programming System and Method Utilizing a Web Page Staging Area.” Ex. 1007 at Cover. Harrington was filed on September 15, 1999 and issued October 10, 2006. *Id.*

116. 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” Ex. 1007 at 1:65-2:3. To achieve this end, Harrington discloses “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.” *Id.* at 4:62-66. 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. *Id.* at 14:61-15:13. Then, at a predetermined time, the constructed webpage is integrated with the video and displayed to the user. *Id.* at 16:12-23. Thus, for example, the

user's system could retrieve targeted advertising content from the Internet and integrate that content with the video, at a time when that advertising is relevant to the video. *Id.* at 2:33-41. This functionality allows "video programming" or "particular content from the internet" to be combined with the "massive Internet" by "synching specific Internet pages to the video signal." *Id.* at 1:65-2:27. "The video programing and corresponding Internet pages can be viewed on personal computers equipped with a television card." *Id.* at 2:50-53.

117. To obtain the web page for construction, Harrington uses a "pre-fetch push command," which is composed 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.

Ex. 1007 at 4:7-18. Harrington explains that the “pre-fetch push command may include any type of information instructing client machine 204 to construct a web page hidden from view.” *Id.* at 15:21-23. These instructions include, for example, instructions that direct 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.” *Id.* at 14:61-64.

118. Harrington explains that the content at the URL must be displayed to the user **synchronously** with the television programming being watched. *Id.* at 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”). To ensure correct synchronization, Harrington uses, for example, a “timer” to control when the content will be displayed to the user. *Id.* at 4:5-22. Harrington explains that the 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.

Ex. 1007 at 15:25-32 (emphases added).

B. Motivation to Combine

119. 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. *See, e.g.*, Ex. 1006 at 1:9-2:37 (describing interactive content rendering, graphical user interfaces, and visual media integration functionality that is present in interactive television systems). 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 integrating television with rendering of web pages and provides a solution for retrieving and rendering web pages within the context of integrated television. Ex. 1007 at 1:65-2:13, 4:5-22. Beri also addresses the problem of rendering web pages and provides a solution for rendering animations within web pages. Ex. 1006 at 2:1-33.

120. A POSITA would have been motivated to combine the two references because they both involve solutions to the problem of rendering of web pages. Ex. 1006 at 2:40-53 (describing animated image rendering in a web page using ActiveX controls); Ex. 1007 at 1:65-2:13 (describing off-screen web page rendering to eliminate delays and visual disruption during content display), 4:5-22 (describing how the invention addresses visual disruption caused by progressive

rendering on a web page). It was well known that many users enjoyed looking at animations on web pages. *Id.* It was also well known that televisions display videos, such that 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.*; *see supra* Sec. V (overview of the state of the art in June 2001).

C. Reasonable Expectation of Success

121. A POSITA would have found it straightforward to implement the combination because Harrington and Beri both render web pages on a personal computer, and the software environments are the same. *See, e.g.*, Ex. 1006 at 2:1-33 (discussing Microsoft environment and Microsoft ActiveX tools for use in web browsers); Ex. 1007 at Figure 7 (using Netscape Navigator web browser in Windows environment), 10:48-64.

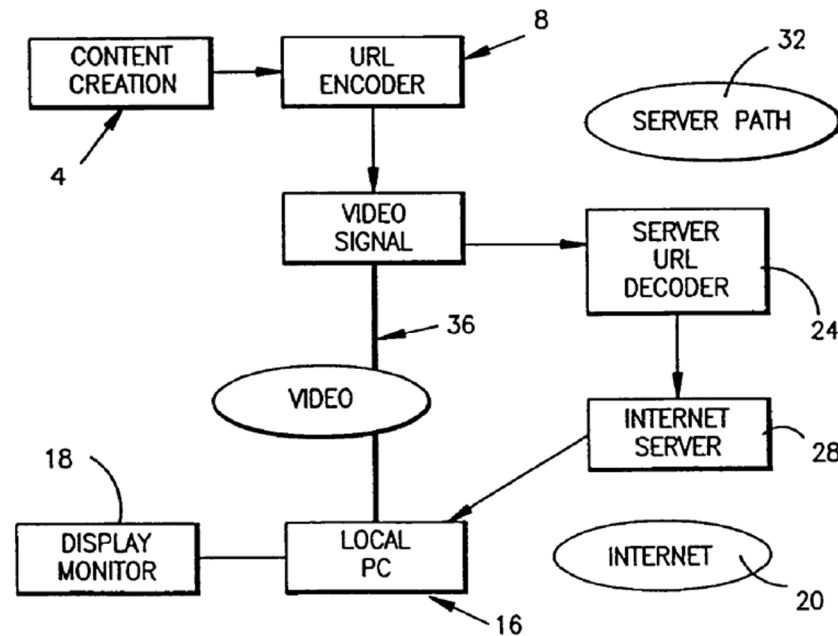
122. A POSITA would recognize that the software environments for the technologies closely parallel to each other because they rely on similar, if not identical, frameworks, interfaces, and rendering behaviors. Ex. 1006 at 2:40-53 (describing animated image rendering in a web page using ActiveX controls); Ex. 1007 at 1:65-2:13 (describing off-screen web page rendering to eliminate delays and visual disruption during content display), 4:5-22 (describing how the invention addresses visual disruption caused by progressive rendering on a web page by

using a hidden staging frame). This would suggest to a POSITA that the overlap would lead to functionally equivalent user experiences and implementation approaches. *Id.* Thus, 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 that would have yielded predictable results. *Id.*, *see supra*, Sec. V (overview of the state of the art in June 2001); *see also*, Ex. 1007 at 1:65-2:3 (disclosing 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”). The result would have been software with the same overall purpose (rendering web pages) that would have the combined ability to render animations while the user was watching television. *Id.*

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

123. Beri and Harrington together renders obvious this 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 in combination with Harrington renders obvious this limitation based on at least the following exemplary citation(s):
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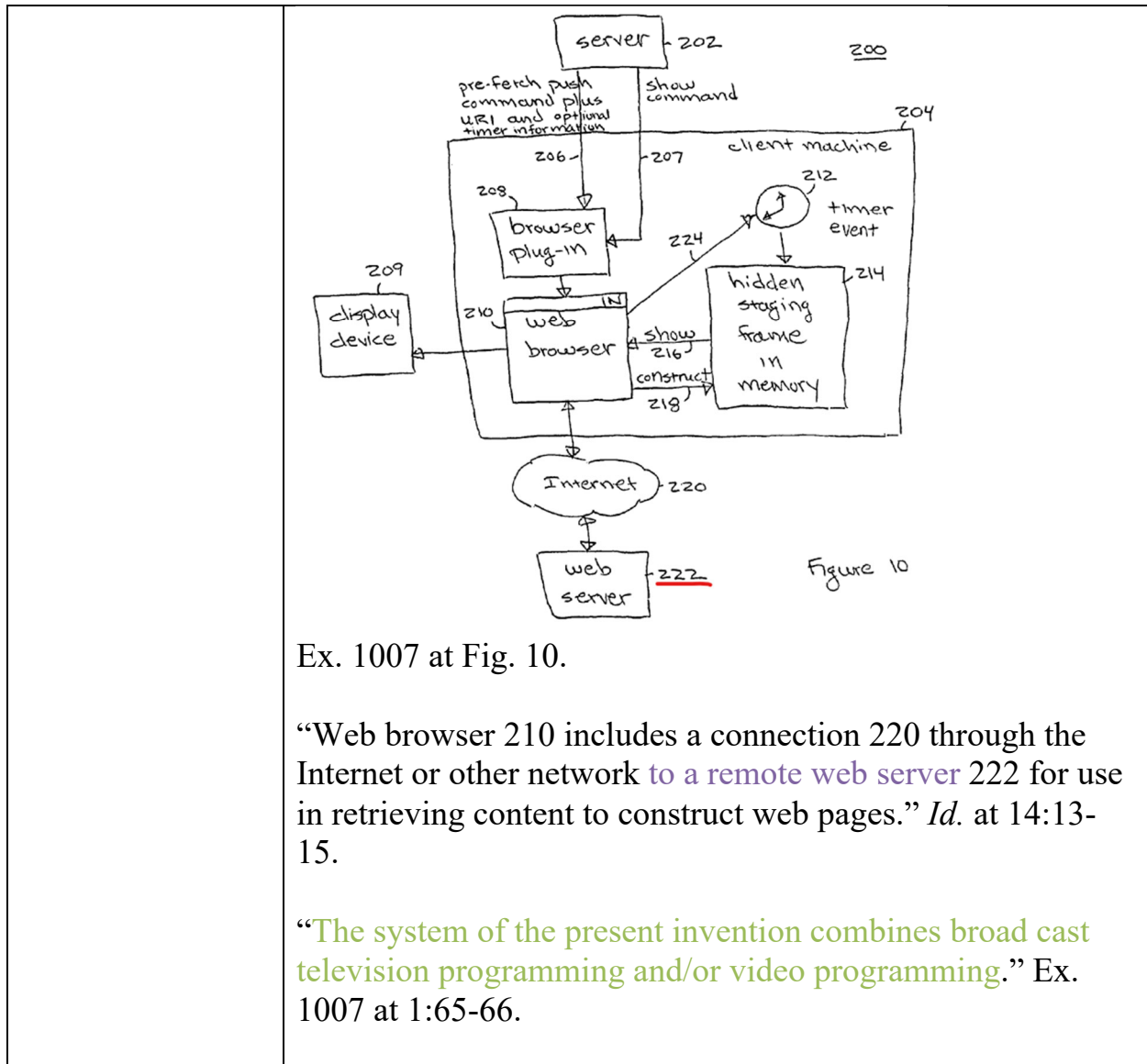
Ex. 1007 at Fig 2.

“ *** the URL decoder 24 is located at the server site, as opposed to the subscriber location.

When the decoder receives the video program signal, it strips out the URL codes on line 21 of the VBI and delivers these codes independently to an Internet server 28. The URL code is then subsequently delivered over the Internet 20 to the user PC.”

Ex. 1007 at 6:10-15.

This setup effectively acts as a proxy server, facilitating the delivery of URLs and associated web pages to the user.



124. I have identified above that Beri and Harrington together disclose this element by describing a method applicable to a proxy server in an interactive television system.

125. As discussed above, Beri renders obvious claim 2, to which claim 3 refers to. *See* Sec. VII.A.4. Beri discloses that the prerequisite directive can be written with a markup language.

126. Both Beri and Harrington disclose *directives* which are *indicative of an audio, video and/or graphic presentation requiring a set of resources*. It is my opinion that it would have been obvious for a POSITA to combine Beri's disclosed prerequisite directives comprising markup language with Harrington's remote web server. Ex. 1007 at 14:13-17. Beri and Harrington's teachings run closely in parallel because they rely on similar, if not identical, frameworks, interfaces, and rendering behaviors. Thus, it is my opinion that a POSITA would recognize that combining Beri and Harrington utilizes the overlap and would lead to functionally equivalent user experiences and implementation approaches.

127. Harrington discloses a remote web server, which is a *proxy server*. Ex. 1007 at 14:13. A proxy server does not need to be local to the client and can be located anywhere on the network. Thus, a proxy server can be a remote web server. A proxy acts as an intermediary between a client and another server by forwarding requests and responses. Accordingly, Harrington teaches that the proxy server is "for use in retrieving content to construct web pages." Ex. 1007 at 14:13-15. Notably, Harrington teaches this proxy server in the context of an interactive

television system. Ex. 1007 at 1:65-66. (“The system of the present invention combines broad cast television programming and/or video programming.”)

128. Therefore, it is my opinion that a POSITA would understand that Beri’s use of directives, which implement a markup language, would be implemented 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. In implementing Harrington’s *remote web server*, a POSITA would enhance Beri’s scope.

E. Beri and Harrington render obvious Claim 22

1. 22[P]: “A client device in an interactive television system, said device comprising:”

129. To the extent Beri alone does not disclose, it is my opinion that Harrington discloses this limitation.

22[P]: “A client device in an interactive television system, said device comprising:”	Beri in combination with Harrington renders obvious this limitation based on at least the following exemplary citation(s): “The system of the present invention combines broadcast television programming and/or video programming.” Ex. 1007 at 1:65-66. “The video programming and corresponding Internet pages can be viewed on personal computers equipped with a television card, but the open software-based approach enables
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	anyone with a television set and JAVA enabled PC to experience the system of the invention.” Ex. 1007 at 2:50-54.
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130. I have identified above that Harrington discloses this element since displaying animated marquees is one of a multitude of functions in an interactive television system.

131. 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” which in my opinion together constitute the **interactive television system**. Ex. 1007 at 1:65-66, 2:50-54.

2. 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”

132. Harrington discloses this 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”	Beri in combination with Harrington renders obvious this limitation based on at least the following exemplary citations: “The video programming and corresponding Internet pages can be viewed on personal computers equipped with a television card, but the open software-based approach enables anyone with a television set and JAVA enabled PC to experience the system of the invention.” Ex. 1007 at 2:50-54.
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	“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. The local PC 16 is preferably connected to either a cable and/or broadcast television connection or to a local VCR or other video source. At each subscriber site, the local personal computer 16 preferably receives the cable transmission by cable connection on the back of the personal computer 16. The video/audio program can then be processed for display on the computer screen using any conventional PC card capable of displaying NTSC signals on a computer monitor, such as a WinTV card. In addition to the cable connection, however, in the present invention there is also an Internet 20 connection created concurrently with the cable connection.” <i>Id.</i> at 5:45-59.
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133. I have identified above that Beri in combination with Harrington discloses this element by disclosing a device, wherein there would be a receiver, that can receive signals corresponding to directives that are indicative of an audio,

video, and/or graphic presentation requiring a set of resources via a display configured with a CPU.

134. It is my opinion that Harrington discloses a *receiver configured to receive signals corresponding to directives* because it discloses use of, for example, “a personal computer equipped with a **television card**” (Ex. 1007 at 2:50-54; 5:45-59) (emphasis added), which a POSITA would understand to refer to a card that is capable of receiving broadcast television signals. It is also my opinion that Harrington further discloses that the personal computer has an “Internet connection” through, for example, a “conventional modem” (Ex. 1007 at 5:60-64), which a POSITA would understand to refer to a receiver for Internet signals.

135. Both Beri and Harrington disclose *directives* which are *indicative of an audio, video and/or graphic presentation requiring a set of resources*. It is my opinion that a POSITA would have been motivated to combine Beri and Harrington to achieve the predictable goal of rendering web pages within the context of integrated television. *See supra* Secs. IX.A-C. This is because such functionality would increase consumer interaction with television as well as improve connectivity and delivery of content.

3. 22[B]: “a processing unit coupled to said receiver, wherein said processing unit is configured to:”

136. Harrington discloses this limitation.

22[B]: “a processing unit coupled to said receiver , wherein said processing unit is configured to:”	Beri in combination with Harrington renders obvious this limitation based on at least the following exemplary citation(s): “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.” Ex. 1006 at 5:45-48.
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137. I have identified above that Harrington discloses this element by disclosing a well-known receiver, like an Intel x86 machine. It is my opinion that it would be obvious that said receiver could receive signals that correspond to directives that are indicative of audio, video, and/or graphic presentations that require a set of resources.

138. It is my opinion that Harrington discloses a *processing unit* as part of or *coupled to* the *receiver*. Ex. 1007 at 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.”). It is also my opinion that it was well-known at the time that processing units are part of or coupled to the receiver.

4. The remainder of Claim 22

139. Beri discloses the remainder of claim 22. I have identified the parallel claim language between claim 1 and claim 22 below and refer to my analysis above for claim 1. I have bolded the minimal differences below.

Claim 1	Claim 22
1[B]. determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition (<i>sic</i>) of a subset of said set of resources is a prerequisite for initiating the presentation;	22[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;
1[C]. initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and	22[D]. initiate said presentation, in response to determining the one or more directives do not include said prerequisite directive; and
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.	22[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.

140. 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. Specifically, 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]. *See, supra* Secs. VIII.B-D (including my opinion for the combination of embodiments in Beri). Further, it is my opinion that the differences between the claims is minimal (e.g., “determining” versus “determine”). The core semantic meaning remains essentially the same in context.

x. **GROUND 3: BERI IN COMBINATION WITH KUNZE RENDERS OBVIOUS CLAIM 11**

141. I have reviewed Beri and Kunze, and it is my opinion that Beri in combination with Kunze renders obvious claim 11.

A. Summary of Kunze

142. Kunze was published in December 1999 to the Metadata Initiative. Kunze’s publication date predates the ’169 patent’s filing date.

143. Kunze details the Dublin Core metadata elements. Ex. 1010 at 1. The Dublin Core metadata elements describe information resources, such that 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 categorical information. For example, search engines like Google and Yahoo use metadata to categorize and rank content in search results. The Dublin Core approach is a standardized form of encoding metadata using <meta> tags in HTML. Thus, by using a common metadata standard,

interoperability between systems is enabled, including the exchange of information, in a consistent manner.

144. For example, Kunze discloses the following snippet:

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

Ex. 1010 at 12.

Here, the <meta> tags act as an indicator pointing to information about the document, named “DC.Relation.Requires.” In other words, this snippet shows the attributes (“content”) required for DC.Relation. A web page would have searched for the attributes in determining if all are met in order to show DC.Relation.

B. Motivation to Combine

145. A POSITA would have been 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* Ex. 1010 at 1 (describing standardized <meta> tags on web pages); *see also* Ex. 1006 at 2:34-37 (describing <meta> tags for marquees). Kunze teaches a standardized <meta> tag format that covers attributes, including requirements and instructions, in hopes to standardize and make metadata readily accessible, which a POSITA would have found beneficial to the Beri system because Beri relies upon the Internet. *Id.* A POSITA would have also recognized 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. *Id.*; *see supra* Sec. V (overview of the state of the art in June 2001).

C. Reasonable Expectation of Success

146. A POSITA would have also had a reasonable expectation of success combining the teachings of Beri and Kunze. Specifically, a POSITA would have relied 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* Ex. 1010, 1 (describing standardized <meta> tags on web pages); *see supra* Sec. VIII.A (summary of Beri). Such a combination would have been easily achieved given the prevalence, available documentation, and known success of Kunze’s standardized system in other technologies. *Id.*

D. 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.”

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

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 based on at least the following exemplary citation(s): “The Dublin Core [DC1] is a small set of metadata elements for describing information resources. This document explains how these elements are
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	expressed using the META and LINK tags of HTML [HTML4.0]. A sequence of metadata elements embedded in an HTML file is taken to be a description of that file. Examples illustrate conventions allowing interoperation with current software that indexes, displays, and manipulates metadata, such as [SWISH-E], [freeWAIS-sf2.0], [GLIMPSE], [HARVEST], [ISEARCH], etc., and the Perl [PERL] scripts in the appendix.” Ex. 1010 at 1.
--	--

148. I have identified above that Beri in combination with Kunze discloses this element by describing a standardized META name/value pair that can universally be understood to be indicative that its corresponding value is a prerequisite resource.

149. It is my opinion that Kunze discloses *defining a META name/value pair*. A POSITA would have recognized that since Beri’s framework depends on the Internet it would be obvious to utilize the <meta> tags taught by Kunze for reasons such as interoperability and uniformity for external sources like search engines to better index the web page. As such, a POSITA would utilize Kunze’s Dublin Core <meta> tags including storing requirements for content to display, making the value a *prerequisite resource*. Thus, it is my opinion that Kunze’s teachings operate to standardize tags across systems such that they 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. Furthermore, it is my opinion that such universal operability and utilization is a common focus and consideration in web development and it would have been obvious to a POSITA to utilize standardized tags.

XI. GROUND 4: BERI IN COMBINATION WITH DEL SESTO RENDERS OBVIOUS CLAIM 12

150. I have reviewed Beri and U.S. Patent No. 7,069,571 (“Del Sesto”), and it is my opinion that Beri in combination with Del Sesto renders obvious claim 12.

A. Summary of Del Sesto

151. 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. Ex. 1011 at Cover.

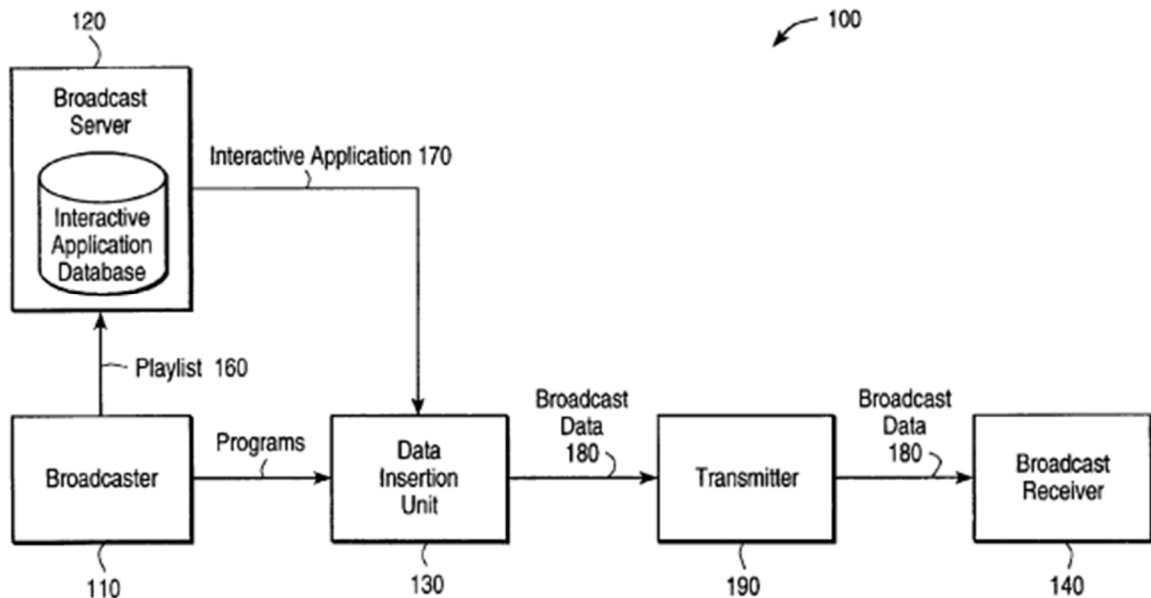
152. Del Sesto discloses “a system for selectively retiring interactive applications in a manner associated with an external event and program state of the interactive application.” Ex. 1011 at 2:31-34. Del Sesto addresses the management of interactive applications embedded in broadcast content, such as interactive television program. *Id.* at Cover.

153. Del Sesto explains that the prior art for interactive television faced a “serious problem” when dealing with orphaned applications. Ex. 1011 at 1:35-36.

Orphaned applications are interactive applications that are still running or active but no longer associated with their intended program, content, or environment.

This translates to issues with ensuring that what is in the interactive application is synchronized with real time or time-constrained access. Orphaned applications result in resource waste and poor user experience by continuously executing.

154. To remedy the problem of orphaned applications, Del Sesto provides a system that selectively retires interactive applications in a manner associated with an external event and a program state of the interactive application. 2:30-34. Figure 1 is an illustration of the high-level system architecture that Del Sesto teaches that “one skilled in the art will appreciate that the system... may be incorporated into larger, more complex systems.” Ex. 1011 at 4:54-58. Figure 1 comprises of a broadcaster 110, a broadcast server 120, a data insertion unit 130, and at least one broadcast receiver (BR) 140.



Ex. 1011 at Fig. 1.

155. 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. Ex. 1011 at 2:61-65. The broadcast receiver then transmits the interactive application with the program for as long as it is appropriate that the application continue to be executed. *Id.* at 3:1-5. As such, the retirement of interactive applications 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. Such functionality “provides for timely retirement of the interactive applications by the broadcast receiver” *Id.* at 2:45-50.

B. Motivation to Combine

156. It would have been obvious to modify Beri based on the teachings of Del Sesto to deal with the problem of orphaned applications to improve user experience. *See* Ex. 1011 at 1:8-2:26 (describing how orphaned applications detract from user experience because they continue to execute even after the associated broadcast program has ended, resulting in confusing or misaligned content on user screen). Del Sesto addresses automatic retirement or deactivation of interactive applications, which a POSITA would have understood would be beneficial to Beri's system, which focuses on present display. Ex. 1011 at 2:31-34. A POSITA would have recognized that Del Sesto's teachings would have expanded Beri's applicability and ability to time-sync, thus eliminating the issue of orphaned applications as well as providing a more time-realistic user experience. *Id.* at 4:54-58 ("one skilled in the art will appreciate that the system... may be incorporated into larger, more complex systems).

C. Reasonable Expectation of Success

157. A POSITA would have also had a reasonable expectation of success combining the teachings of Beri and Del Sesto. Specifically, a POSITA would have relied on Del Sesto's teachings to implement additional functionality that considers automatic retirement or deactivation of interactive applications. Ex. 1011 at Abstract, 4:54-58. Such a combination would have been easily achieved in

the Beri system since Beri provides the infrastructure for interactive applications considered by Del Sesto. Ex. 1006 at Summary (Beri's disclosure of a computer system); Ex. 1011 at 5:16-18 (Del Sesto's disclosure of a preferred application on a computer system), 4:54-58 (disclosing that one skill in the art will appreciate that the system can be incorporated into larger, more complex systems).

D. 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.”

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

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 based on at least the following exemplary citations: “Upon receipt of this information, the Broadcast Receiver initializes an internal time counter and begins keeping track of the passage of time relative to the reference time base.” Ex. 1011 at 24:6-9. “[T]he Broadcast Receiver 140 retires the interactive applications according to the store retirement instructions.” <i>Id.</i> at 24:20-23.
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159. I have identified above that Beri in combination with Del Sesto discloses this element by describing a broadcast receiver that tracks time based on a reference and manages presentation of application availability by allowing or retiring them according to expiration timing or retirement instructions.

160. It is my opinion that a POSITA would find it obvious that the retirement mechanism for interactive applications taught by Del Sesto is logically integrated with Beri's system because it would increase functionality by enabling animated marquees embedded in broadcast-linked applications to be retired in response to changes in broadcast conditions or program states. Del Sesto's teaching offers a more complete approach to ensuring that a user does not experience lagging or expired animated marquees.

161. It is also my opinion that Del Sesto discloses **prohibiting is in further response to detecting a corresponding time for expiration has not yet expired**. Del Sesto teaches a mechanism to determine when to stop displaying animated marquees, whereas Beri by default teaches indefinite display, which leads to orphaned applications, as explained above in Secs. VII.A., XI.A. A POSITA would find it obvious to integrate Del Sesto's teachings of complex time-related functionality into Beri's system for more a more sophisticated and cohesive user experience.

162. Del Sesto also discloses **detecting a corresponding time for expiration**. Del Sesto teaches an internal time counter that keeps track of the passage of time relative to the reference time base. Ex. 1011 at 24:6-9. Del Sesto's internal time counter, which enables the retirement of interactive applications based on a defined execution time window, is a mechanism that detects when an application should expire. It is my opinion that Del Sesto teaches that each interactive application may define a time period in which it is permitted to execute, such that upon expiry, the broadcast receiver will retire the application. As such, it is also my opinion that a POSITA would have found it obvious to integrate Del Sesto's teaching into Beri's marquee object to improve functionality, such that a viewer can experience time-sensitive content. Additionally, the user experience would be improved because retired or expired content, would cease to be displayed. Otherwise, expired or retired content would continue to display, impacting a viewer's experience. A POSITA therefore would be motivated to apply Del Sesto's expiration detection mechanism to Beri's animated marquee object to enhance functionality and to provide a better live experience for a viewer.

163. Del Sesto discloses **allowing the presenting of said presentation in response to detecting said time for expiration has expired**. It is my opinion that Del Sesto teaches that if the period during which the interactive application is expired and the interactive application has not been retired, the receiver will retire

the interactive application according to the stored retirement instructions. Ex. 1011 at 24:20-23. It is my opinion that POSITA would recognize that these stored retirement instructions could include various conditional instructions to allow the presentation given how conditional instructions can effectuate retirement based upon a set criterion. In implementing Beri, it is my opinion that a POSITA would recognize the benefit of using flexible retirement options made available by Del Sesto. As a result, Beri's animated marquees that are live or time-sensitive can be dictated by program relevance or timing. Del Sesto's conditional expiration logic would align Beri's presentation display behavior with live or scheduled broadcast events. Therefore, a POSITA would recognize that Del Sesto's teachings would provide better control and real-time synchronization, which are relevant to television broadcasting, to Beri's teachings that default to indefinite display.

XII. GROUND 5: ARMSTRONG RENDERS OBVIOUS CLAIMS 1, 2 AND 23

164. I have reviewed Tom Armstrong's book, *Designing and Using ActiveX Controls* ("Armstrong"), which was published in 1997, and it is my opinion that Armstrong renders obvious claims 1, 2, and 23.

A. Summary of Armstrong

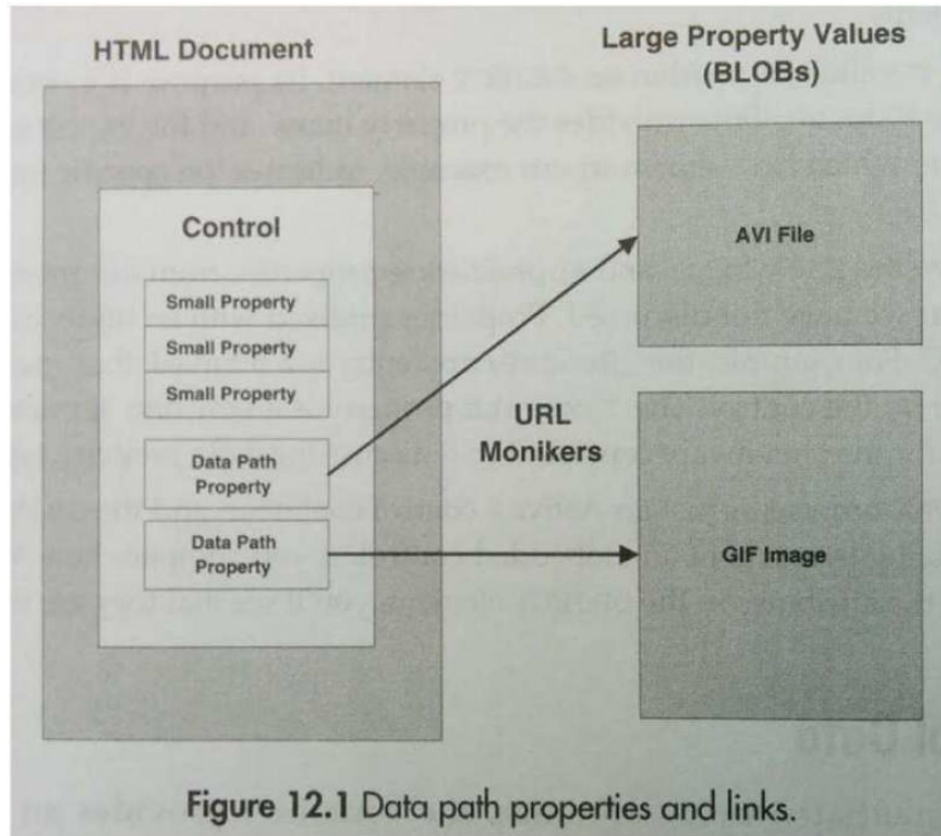
165. Armstrong, entitled *Designing and Using ActiveX Controls*, is a book published in the United States in 1997. *See* Ex. 1008 at 3; Ex. 1009.

166. 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.” Ex. 1009 at 258-259. An HTML document is identified by an URL that “specifies the exact location of a resource within a Web-based environment.” *Id.* at 260. An HTML document describes the contents of a web page using “elements.” *Id.* at 258. ActiveX controls, which add dynamic capabilities to Web documents, can be included in HTML-based documents. *Id.* at 258-260. An OBJECT element is utilized to embed an ActiveX control into an HTML document. *Id.* at 261. A PARAM tag is code that can be used inside of an OBJECT element. *Id.* at 261. A PARAM tag can be used to store and retrieve a resource, such as an image. *Id.* at 261. If the PARAM tag identifies a resource explicitly, the resource is termed “embedded.” *Id.* at 260.

167. In ActiveX OBJECT elements, if the resource is embedded, then the web browser will not display the web page at all until the resource is fully downloaded. Ex. 1009 at 261-262. 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.” Ex. 1009 at 261-262.

168. Thus, as described in Armstrong, ActiveX was modified to include a new “data path property” that allows the PARAM tag to interpret and use a link,

such as an URL, to point to or refer to a resource. Ex. 1009 at 262. 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 framework:



Ex. 1009 at 262. In the picture above, the “small” resources are embedded directly into the HTML document. Ex. 1009 at 261-63. The “large” resources or “BLOBs” are pointed to with a “data path property,” that 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). Ex. 1009 at 261-63.

169. One of the purposes of using a data path property is that it enables “progressive rendering.” Ex. 1009 at 263. Progressive rendering means the web

page starts to display immediately, before resources that are pointed to by the data path properties are loaded. *Id.* at 263; *see also* Sec. V.A. (state of the art at the time of the filing of the '169 patent). This allows large resources to be displayed asynchronously to the user (i.e., the user does not wait for them to be loaded). *Id.* at 263. Thus, the web browser can load some resources without using a data path property (by embedding them in the HTML document), and the presentation of the web page to the user would be prohibited until those resources are entirely downloaded. Ex. 1009 at 263. While the web page with 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. Ex. 1009 at 263.

170. Another benefit of the data path property is that it allows the web browser to display the web page while downloading a stream of continuous data (such as audio data). Ex. 1009 at 263. A POSITA would have understood this disclosure to mean, for example, that a user could visit a web page and listen to music being played on the web page while reading the text on the web page, even though the entire song has not yet downloaded. The advantage is that the user could start reading and listening immediately rather than waiting for a large audio file to entirely download over a slow Internet connection. *Id.*

B. Motivation to Combine

171. In my opinion, it would have been obvious to a POSITA to combine the various teachings of Armstrong for the sake of increased functionality of ActiveX controls, such that that would be more functionality within applications such as web browsers, enabling websites to deliver animated content. *See* Ex. 1009 at 261-3 (describing using URLs to link web browsers to an AVI file or GIF file). Armstrong teaches multiple ways to implement ActiveX controls to address low-bandwidth environments, to better load resources efficiently, and to enable progressive rendering. *Id.*; *see also* Ex. 1008. A POSITA would be motivated to combine these teachings to better support simultaneous streaming and display, providing a user a more immediate user experience, such that they can listen to audio content while reading a webpage without having to wait for the audio content to fully download. *Id.*; *see also* Sec. XII.A (summary of Armstrong); *see also* Sec. V (overview of the state of the art in June 2001).

172. A developer would have known, given the widespread applicability of Microsoft Office applications, that it would have been beneficial to implement the various teachings by Armstrong because they are reusable software modules. Ex. 1009 at 260 (discussing Microsoft ActiveX tools for use in Microsoft web browsers such as Internet Explorer).

C. Reasonable Expectation of Success

173. A POSITA would have recognized the teachings of Armstrong to represent different aspects of ActiveX controls that operate on the same software framework. *See generally* Ex. 1008; *see also* Ex. 1009. Given Armstrong’s disclosure of using data path properties to stream audio while displaying webpage content, a POSITA would have understood that such a combination would also successfully support simultaneously streaming a display. Ex. 1009 at 262. As such, a POSITA would have reasonably expected that such a combination would provide a more comprehensive user experience. *Id.*

174. Given the reusability of modules, a POSITA would have also reasonably expected success in repurposing existing ActiveX controls to implement new functionality or developing a control given how ActiveX controls are well-known and documented. *See* Ex. 1008; *see* Ex. 1009.

175. Therefore, it is my opinion that a POSITA would have been able to implement the obviousness modifications in this ground without undue difficulty.

D. Armstrong renders obvious Claim 1

1. 1[P]: “A method comprising:”

176. It is my opinion that Armstrong discloses the preamble.

1[P]: “A method comprising:”	Armstrong renders obvious this limitation based on at least the following exemplary citations:
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Petition for *Inter Partes* Review of U.S. Patent No. 7,055,169
Declaration of Immanuel Freedman, Ph.D.

	<pre>CLASSID="CLSID:0C7B4FD3-13C1-11D0-A644-B4C6CE000000" CODEBASE="http://www.sky.net/~toma/Async.ocx"> <PARAM NAME="_Version" VALUE="65536"> <PARAM NAME="_ExtentX" VALUE="7403"> <PARAM NAME="_ExtentY" VALUE="8567"> <PARAM NAME="_StockProps" VALUE="173"> <PARAM NAME="BackColor" VALUE="16777215"> <PARAM NAME="Appearance" VALUE="1"> <PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log"> </OBJECT></pre> Ex. 1009 at 261. The above snippet depicts a method.
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177. I have identified above that Armstrong discloses a method in terms of software instructions that define a sequence of steps to achieve a result.

178. As discussed above in Sec. XII.A (Summary of Armstrong), it is my opinion that 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. Ex. 1009 at 261. Armstrong explains that this approach allows the web browser to display the web page while downloading a stream of continuous data to enable a user to read and listen immediately rather than wait for the file to download entirely. Ex. 1009 at 261-262.

2. 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”

179. Armstrong discloses this limitation.

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Declaration of Immanuel Freedman, Ph.D.

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 renders obvious this limitation based on at least the following exemplary citations:

```
CLASSID="CLSID:0C7B4FD3-13C1-11D0-A644-B4C6CE000000"  
CODEBASE="http://www.sky.net/~toma/Async.ocx">  
  <PARAM NAME="_Version" VALUE="65536">  
  <PARAM NAME="_ExtentX" VALUE="7403">  
  <PARAM NAME="_ExtentY" VALUE="8567">  
  <PARAM NAME="_StockProps" VALUE="173">  
  <PARAM NAME="BackColor" VALUE="16777215">  
  <PARAM NAME="Appearance" VALUE="1">  
  <PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">  
</OBJECT>
```

Ex. 1009 at 261.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">  
<HTML>  
<HEAD>  
<TITLE>Our First Script</TITLE>  
<SCRIPT LANGUAGE="VBScript">  
  <!--  
    document.write "<CENTER>"  
    document.write "<H2>" & "Here's some information about your browser" & "</H2>"  
    document.write "Name:  " & Window.Navigator.AppName & "<BR>"  
    document.write "Version: " & Window.Navigator.AppVersion & "<BR>"  
    document.write "Code name: " & Window.Navigator.AppCodeName & "<BR>"  
    document.write "User agent: " & Window.Navigator.UserAgent  
    document.write "</CENTER>"  
    document.close  
  -->  
</SCRIPT>  
</HEAD>  
<BODY>  
</BODY>  
</HTML>
```

Id. at 259.

The above version, ExtentX, ExtentY, StockProps, BackColor reflect directives indicative of an audio, graphic, video and/or graphic presentation.

The above name, version, code name snippets reflect a set of resources.

180. I have identified above that Armstrong discloses this element by describing a method that receives directives that are indicative of an audio, video, and/or graphic presentation that requires a set of resources.

181. Armstrong discloses **receiving one or more directives**. It is my opinion that Armstrong teaches ActiveX controls, which perform various tasks such as displaying animations, collecting data, and viewing certain types of files. In determining what function to execute, Armstrong's ActiveX controls take **one or more directives** through method calls, properties, and events from a web browser. Ex. 1009 at 261-262.

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

<PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">
Ex. 1009 at 267-68. 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, meaning without having to wait. Thus, it is a directive that is **indicative of an audio, video, or graphic presentation** because it is a declaration or statement instructing the computer should handle presentation of the audio, video, or graphic content that is downloaded from the link. *See supra* Sec. VI.

(explaining the '169 patent's disclosure of an example of a directive). For example, it indicates that the link is a "data path property," meaning it should be downloaded asynchronously compared to embedded resources. *See supra* Secs. XII.D.2-3. It is also my opinion that Armstrong indicates that the data path properties are intended to be used for large images and videos in terms of BLOBs. Ex. 1009 at 261-62.

183. Armstrong discloses a **presentation which requires a set of resources**. 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. Ex. 1009 at 261-262. It is my opinion that these resources constitute a *set* of resources, because the web pages referenced in Armstrong require multiple resources in order to display a web page in full. Ex. 1009 at 261-262. For example, Armstrong provides one example containing multiple resources consisting of multiple strings of text for display on the web page. Ex. 1009 at 259. And Armstrong provides another example where one HTML document contains three small, embedded properties (*i.e.*, small strings of text or small images) and two data path properties (*i.e.*, large GIF or BMP images or videos). Ex. 1009 at 261-262. These different resources comprise a web page's presentation, since they cover things such as images, titles, headers, and design choices.

3. 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;”

184. Armstrong discloses this limitation.

1[B]: “determining whether said one or more directives includes a prerequisite directive which indicates that acciuisition [<i>sic</i>] of a subset of said set of resources is a prerequisite for initiating the presentation;”	Armstrong renders obvious this limitation based on at least the following exemplary citations: <pre><!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN"> <HTML> <HEAD> <TITLE>Our First Script</TITLE> <SCRIPT LANGUAGE="VBScript"> <!-- document.write "<CENTER>" document.write "<H2>" & "Here's some information about your browser" & "</H2>" document.write "Name: " & Window.Navigator.AppName & "
" document.write "Version: " & Window.Navigator.AppVersion & "
" document.write "Code name: " & Window.Navigator.AppCodeName & "
" document.write "User agent: " & Window.Navigator.UserAgent document.write "</CENTER>" document.close --> </SCRIPT> </HEAD> <BODY> </BODY> </HTML></pre> Ex. 1009 at 259. When Internet Explorer executes HTML code, it identifies embedded controls and determines if all prerequisite directives such as control availability and resource parameters are met. This process is essentially determining whether a prerequisite directive exists and is satisfied.
---	--

185. I have identified above that Armstrong discloses this element by describing a method that determines whether a directive includes a prerequisite directive, DrawImmediately, that indicates that a subset of said resources is a prerequisite for initiating a presentation.

186. First, Armstrong discloses **determining whether said one or more directives includes a prerequisite directive**. It is my opinion that the *determining whether* aspect of this limitation is performed in Armstrong by a web browser such as “Internet Explorer,” because the web browser is the software that processes the ActiveX control and other software disclosed in Armstrong. *See, e.g.*, Ex. 1009 at 259 (describing use of Internet Explorer to execute HTML code). When Internet Explorer executes HTML code, it identifies embedded controls and determines if all prerequisite directives such as control availability and resource parameters are met. This process is essentially *determining whether* a prerequisite directive exists and is satisfied.

187. It is my opinion that Armstrong’s prerequisite directive which indicates that acquisition of [[a]] subset of a said set of resources is prerequisite for initiating the presentation. 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. Armstrong discloses that 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. Ex. 1009 at 259-262. Specifically, Armstrong states that HTML is “used to embed images, documents, applets, and, in our case, ActiveX controls.” Ex. 1009 at 260. Embedded resources are designated as prerequisite resources because the

presentation of the web page is prohibited until the embedded resources are downloaded. In contrast, for resources indicated by data path properties such as 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. Ex. 1009 at 261-63, 267-68. Thus, the embedded resources are the *subset of resources*. Resources referred to using a data path property, which are not embedded, are part of the full set of resources that constitutes the web page presentation. *Id.*; Ex. 1009 at 267-68.

188. It is my opinion that such a prerequisite directive to indicate embedded resources that are a prerequisite for initiating the presentation would have been obvious because HTML uses directives for specifying web pages and includes a resource embedding functionality that creates a distinction for the web browser between those embedded resources and optional resources, such as those indicated by data path properties. Ex. 1009 at 258-59, 261-63, 289-90.

4. 1[C]: “initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and”

189. Armstrong discloses this limitation.

1[C]: “initiating said presentation, in response to determining the one or more directives do not	Armstrong renders obvious this limitation based on at least the following exemplary citations:
---	--

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include said
prerequisite directive;
and”

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>
<HEAD>
<TITLE>Our First Script</TITLE>
<SCRIPT LANGUAGE="VBScript">
  <!--
    document.write "<CENTER>"
    document.write "<H2>" & "Here's some information about your browser" & "</H2>"
    document.write "Name:  " & Window.Navigator.AppName & "<BR>"
    document.write "Version:  " & Window.Navigator.AppVersion & "<BR>"
    document.write "Code name:  " & Window.Navigator.AppCodeName & "<BR>"
    document.write "User agent:  " & Window.Navigator.UserAgent
    document.write "</CENTER>"
    document.close
  -->
</SCRIPT>
</HEAD>
<BODY>
</BODY>
</HTML>
```

Ex. 1009 at 259.

```
CLASSID="CLSID:0C7B4FD3-13C1-11D0-A644-B4C6CE000000"
CODEBASE="http://www.sky.net/~toma/Async.ocx">
  <PARAM NAME="_Version" VALUE="65536">
  <PARAM NAME="_ExtentX" VALUE="7403">
  <PARAM NAME="_ExtentY" VALUE="8567">
  <PARAM NAME="_StockProps" VALUE="173">
  <PARAM NAME="BackColor" VALUE="16777215">
  <PARAM NAME="Appearance" VALUE="1">
  <PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">
</OBJECT>
```

Id. at 261.

```
//  
// AsyncCtl.h  
//  
...  
class CAsyncCtrl : public COleControl  
{  
    DECLARE_DYNCREATE(CAsyncCtrl)  
    ...  
    // Implementation  
protected:  
    ~CAsyncCtrl();  
    CAsyncText m_ddpText;  
    HINSTANCE m_hRTF;  
  
//  
// AsyncCtl.cpp  
//  
...  
#include "Async.h"  
// Include our new CDataPathProperty-derived class  
#include "AsyncTxt.h"  
#include "AsyncCtl.h"  
#include "AsyncPpg.h"
```

Id. at 276.

When Internet Explorer processes a web page containing an ActiveX control and all required conditions are met, it will begin displaying content, thus *initiating the presentation*.

190. I have identified above that Armstrong discloses this element by describing a method for initiating a presentation after determining that one or more directives do not include a prerequisite directive that requires that a subset of resources is acquired first to initiate a presentation.

191. Armstrong discloses **initiating said presentation**. It is my opinion that Armstrong discloses that the presentation is controlled, including being initiated, by a web browser such as “Internet Explorer,” because the web browser is the software that executes the ActiveX control and other software disclosed in Armstrong. *See, e.g.*, Ex. 1009 at 259 (describing use of Internet Explorer to execute HTML code). When Internet Explorer processes a web page containing an ActiveX control and all required conditions are met, it will begin displaying content, thus *initiating the presentation*.

192. Second, Armstrong discloses **in response to determining the one or more directives do not include said prerequisite directive**. It is my opinion that since Armstrong discloses that if the web page does not include a prerequisite directive, meaning that none of the OBJECT elements have embedded resources, that all resources are thus indicated by data path properties, such that the web browser will determine no prerequisite directive exists and presentation of the web page will be *initiated*. Ex. 1009 at 261-63, 275-76; *see supra*, Secs XII.A, XIID.2-3.

5. 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.”

193. Armstrong discloses this limitation.

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Declaration of Immanuel Freedman, Ph.D.

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 renders obvious this limitation based on at least the following exemplary citations:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>
<HEAD>
<TITLE>Our First Script</TITLE>
<SCRIPT LANGUAGE="VBScript">
  <!--
    document.write "<CENTER>"
    document.write "<H2>" & "Here's some information about your browser" & "</H2>"
    document.write "Name: " & Window.Navigator.AppName & "<BR>"
    document.write "Version: " & Window.Navigator.AppVersion & "<BR>"
    document.write "Code name: " & Window.Navigator.AppCodeName & "<BR>"
    document.write "User agent: " & Window.Navigator.UserAgent
    document.write "</CENTER>"
    document.close
  -->
</SCRIPT>
</HEAD>
<BODY>
</BODY>
</HTML>
```

Ex. 1009 at 259.

```
CLASSID="CLSID:0C7B4FD3-13C1-11D0-A644-B4C6CE000000"
CODEBASE="http://www.sky.net/~toma/Async.ocx">
  <PARAM NAME="_Version" VALUE="65536">
  <PARAM NAME="_ExtentX" VALUE="7403">
  <PARAM NAME="_ExtentY" VALUE="8567">
  <PARAM NAME="_StockProps" VALUE="173">
  <PARAM NAME="BackColor" VALUE="16777215">
  <PARAM NAME="Appearance" VALUE="1">
  <PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">
</OBJECT>
```

Id. at 261.

Internet Explorer will not execute if a prerequisite directive is missing, thus prohibiting initiation of a presentation.

194. I have identified above that Armstrong discloses this element by describing prohibiting initiating a presentation until a subset of resources are acquired.

195. Armstrong discloses **prohibiting initiation of said presentation**. It is my opinion that Armstrong discloses that the presentation is controlled, including being prohibited, by a web browser such as “Internet Explorer,” because the web browser is the software that executes the ActiveX control and other software disclosed in Armstrong. *See, e.g.*, Ex. 1009 at 259 (describing use of Internet Explorer to execute HTML code). Internet Explorer will not execute if a prerequisite directive is missing, thus *prohibiting initiation of a presentation*.

196. Furthermore, Armstrong discloses **until said subset of resources are acquired**. It is my opinion that Armstrong teaches that if an OBJECT element has an embedded image, then the presentation will be prohibited until the OBJECT element is loaded. Ex. 1009 at 261-63; *see supra* Secs. XII.A, XII.D.2-3. Armstrong teaches that the OBJECT element must load the entire image before the presentation is able to load. 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*.

197. Armstrong also discloses **in response to determining the one or more directives include said prerequisite directive**. Armstrong 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. It is my

opinion that Armstrong teaches that prerequisite directives can be implemented within the ActiveX control to determine if resources have been acquired.

E. 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.”

198. Armstrong renders obvious this 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 limitation based on at least the following exemplary citations: “Hypertext Markup Language (HTML) is <i>the</i> language of the Web environment. The development of HTML along with a standard protocol (HTTP) to transport HTML documents is the primary reason for the tremendous growth of the web.” Ex. 1009 at 258.
---	--

199. I have identified above that Armstrong discloses this element since Armstrong discloses HTML which is used as a prerequisite directive since HTML is a markup language.

200. First, Armstrong discloses the method of claim 1. See above Sec. XII.B.

201. 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. Armstrong discloses that the

prerequisite directive can be written with a *markup language, a scripting language, or a style sheet*. The '169 patent states that a type of “markup language” is “HTML.” Ex. 1001 at 9:13. Armstrong precisely uses HTML, which in my opinion is the most well-known and utilized markup language. *See, e.g.*, Ex. 1009 at 257-63. Armstrong teaches that the HTML is the language of web development. Ex. 1009 at 258. Thus, a POSITA would know that HTML markup language should be used as the language for the prerequisite directive disclosed in Armstrong. Ex. 1009 at 258-59.

D. Armstrong renders obvious Claim 23

1. 23[P]: “A computer readable medium comprising program instructions executable by a computer to:”

202. In my opinion, Armstrong discloses the preamble.

23[P]: “A computer readable medium comprising program instructions executable by a computer to:”	Armstrong renders obvious this limitation based on at least the following exemplary citations: “The examples were developed on a 90-MHz Pentium with 24 megabytes of memory running Windows NT 4.0. The software tools required to build and test the samples include: Microsoft’s Visual C++ version 4.0 or higher running on Windows 95 or Windows NT 3.51 or higher. The screen shots are of Visual C++ 4.2.” Ex. 1008 at 22.
--	---

203. I have identified above that Armstrong discloses this element by a computer system.

204. Armstrong discloses a **computer readable medium comprising program instructions executable by a computer** because it discloses a computer that contains a memory, and that the memory stores software consisting of, for example, a web browser program. *See, e.g.*, Ex. 1008 at 22 (disclosing hardware and software for running the applications disclosed in Armstrong).

2. The remainder of Claim 23

205. Armstrong discloses the remainder of claim 23. I have identified the parallel claim language between claim 1 and claim 23 below. I have bolded the minimal differences below.

Claim 1	Claim 23
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;	23[A]. receive directives which are indicative of an audio, video and/or graphic presentation which requires a set of resources;
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;	23[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;
1[C]. initiating said presentation, in response to determining the one or	23[C]. initiate said presentation, in response to determining the one or

more directives do not include said prerequisite directive; and	more directives do not include said prerequisite directive; and
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.	23[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.

206. It is my opinion that 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. Specifically, 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]. *See, supra* Secs. XII.B - D.2-5 (including my opinion for the combination of embodiments in Beri). It is my opinion that the differences between the claims is minimal (e.g., “determining” versus “determine”). The core semantic meaning remains essentially the same in context.

XIII. GROUND 6: ARMSTRONG IN COMBINATION WITH HARRINGTON RENDER OBVIOUS CLAIMS 3 AND 22

207. I have reviewed Armstrong and Harrington, and it is my opinion that Armstrong in combination with Harrington render obvious claims 3 and 22.

A. Motivation to Combine

208. It would have been 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. Indeed, the software environments being the same demonstrate that the technologies run closely in parallel because they rely on similar, if not identical, frameworks, interfaces, and rendering behaviors. *See, e.g.*, Ex. 1009 at 260 (discussing Microsoft ActiveX tools for use in Microsoft web browsers such as Internet Explorer); Ex. 1007 at Figure 7 (disclosing use of Netscape Navigator web browser in Windows operating system), 10:48-64. A POSITA would find the overlap to lead to functionally equivalent user experiences and implementation approaches. *Id.*

B. Reasonable Expectation of Success

209. A POSITA would have found it simple to effectuate the combination because Harrington and Armstrong both render web pages on a personal computer, and thus the software environments are the same. *See, e.g.*, Ex. 1009 at 260 (discussing Microsoft ActiveX tools for use in Microsoft web browsers such as Internet Explorer); Ex. 1007 at Figure 7 (disclosing use of Netscape Navigator web browser in Windows operating system), 10:48-64. Thus, the combination of Harrington's client device in an interactive television system with Armstrong's asynchronous rendering software would have been an obvious combination of

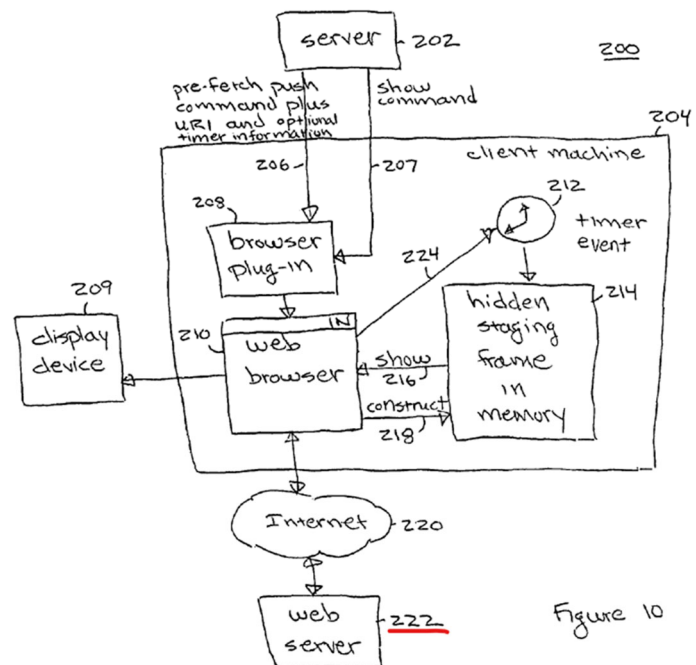
known limitations that would have yielded predictable results in rendering web pages within the context of integrated television. *Id.* The result would have been software with the same overall purpose (rendering web pages) that would have the combined ability to render web page resources asynchronously and to do so while the user was watching television. *Id.*; see also Ex. 1009 at 263 (disclosing the web browser while downloading a stream of continuous data).

C. 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”

210. Armstrong and Harrington together disclose this 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 in combination with Harrington renders obvious this limitation based on at least the following exemplary citation(s):



Ex. 1007 at Fig. 10.

	“Web browser 210 includes a connection 220 through the Internet or other network to a remote web server 222 for use in retrieving content to construct web pages.” <i>Id.</i> at 14:13-15. “The system of the present invention combines broad cast television programming and/or video programming.” Ex. 1007 at 1:65-66.
--	--

211. I have identified above that Armstrong and Harrington together disclose this element by describing a method applicable to a proxy server in an interactive television system.

212. As discussed above, Armstrong discloses claim 2, to which claim 3 refers to. See Sec. VIII.A.4. Notably, Armstrong discloses that the prerequisite directive can be written with a markup language, HTML.

213. Harrington **discloses wherein said one or more directives are received by a proxy server.** It is my opinion that Harrington discloses a remote web server, which is a *proxy server*. Ex. 1007 at 14:13. A proxy server does not need to be local to the client and can be located anywhere on the network. A proxy server can be a remote web server. This is because a proxy acts as an intermediary between a client and another server by forwarding requests and responses. Harrington teaches that the proxy server is “for use in *retrieving* content to

construct web pages” which is an intermediary action since it is not loading content, but rather, retrieving it in preparation to load. Ex. 1007 at 14:13-15.

214. It is also my opinion that Harrington teaches the proxy server in the context of **an interactive television system**. A POSITA would understand that Armstrong’s use of directives, which implement markup language, could 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 given the similarities between the two systems. In implementing Harrington’s *remote web server*, a POSITA would enhance Armstrong’s scope.

D. Armstrong and Harrington render obvious Claim 22

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

215. It is my opinion that Armstrong and Harrington together disclose the preamble.

22[P]: “A client device in an interactive television system, said device comprising:”	Armstrong in combination with Harrington renders obvious this limitation based on at least the following exemplary citations: “The system of the present invention combines broad cast television programming and/or video programming.” Ex. 1007 at 1:65-66. “The video programming and corresponding Internet pages can be viewed on personal computers equipped with a television card, but the open software-based approach enables anyone with a television set and JAVA
---	--

	enabled PC to experience the system of the invention.” Ex. 1007 at 2:50-54. “The system of the present invention combines broadcast television programming and/or video programming which appears on a VHS or Beta tape, CD-ROM, DVD or other medium, or particular content from the Internet, or video programming at a video server (hereinafter “video programming”), with the massive Internet, creating a new and powerful educational and entertainment medium. The system allows consumers to receive more information in a more efficient manner than either television or the Internet alone. Consumers not only can see a news report on television, but they can also read pertinent information about the report, as well as explore related information about the story. The program becomes the introduction to a particular subject, rather than the entire subject itself. The act of viewing a program has now become a more engaging, enriching experience.” <i>Id.</i> at 1:65-2:13. “In another embodiment of the present invention, a web page staging area is used on a client's machine to construct a web page hidden from view. The machine receives from a server a pre-fetch push command along with a URL and timer event information. A hidden staging frame is set-up 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. Thus, 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.
--	---

It is an object of the present invention to create a more intimate relationship between the viewer and the program by enriching the learning experience through the provision of more in-depth information.” *Id.* at 4:5-22.

```
CLASSID="CLSID:0C7B4FD3-13C1-11D0-A644-B4C6CE000000"  
CODEBASE="http://www.sky.net/~toma/Async.ocx">  
  <PARAM NAME="_Version" VALUE="65536">  
  <PARAM NAME="_ExtentX" VALUE="7403">  
  <PARAM NAME="_ExtentY" VALUE="8567">  
  <PARAM NAME="_StockProps" VALUE="173">  
  <PARAM NAME="BackColor" VALUE="16777215">  
  <PARAM NAME="Appearance" VALUE="1">  
  <PARAM NAME="TextPath" VALUE="http://www.sky.net/~toma/log">  
</OBJECT>
```

Ex. 1009 at 261.

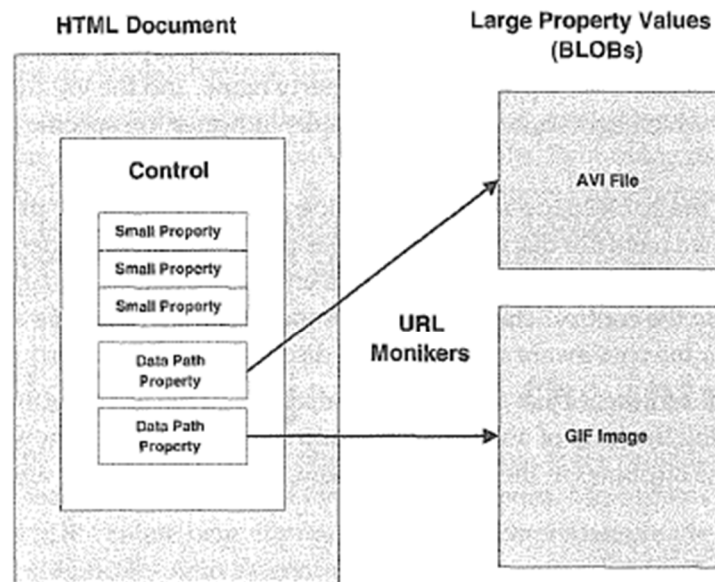


Figure 12.1 Data path properties and links.

Id. at Fig. 12.1.

216. I have identified above that Armstrong in combination with Harrington discloses this element since displaying animated marquees is a well-

known feature that interactive television system middleware, such as that provided by Microsoft based on Active X controls and that provided by Multimedia Home Programming based on Java software.

217. It is my opinion that 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” (which together constitute the **interactive television system**). Ex. 1007 at 1:65-66, 2:50-54.

218. Harrington identifies the problem of integrating television with rendering of web pages and provides a solution for retrieving and rendering web pages within the context of integrated television. Ex. 1007 at 1:65-2:13, 4:5-22. Armstrong also addresses the problem of rendering web pages and teaches a solution for how to asynchronously render the various resources in a web page. Ex. 1009 at 261-64. Thus, it is my opinion that a POSITA would have been motivated to combine the two references because they both involve solutions to the problem of rendering of web pages. As such, the combination of Harrington’s client device in an interactive television system with Armstrong’s asynchronous rendering software would have been an obvious combination of known limitations that would have yielded predictable results in rendering web pages within the context of integrated television. The result would have been 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.

2. 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”

219. Armstrong and Harrington disclose this 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 in combination with Harrington renders obvious this limitation based on at least the following exemplary citations: “The video programming and corresponding Internet pages can be viewed on personal computers equipped with a television card, but the open software-based approach enables anyone with a television set and JAVA enabled PC to experience the system of the invention.” Ex. 1007 at 2:50-54. “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. The local PC 16 is preferably connected to either a cable and/or broadcast television connection or to a local VCR or other video source. At each subscriber site, the local personal computer 16 preferably receives the
---	--

	cable transmission by cable connection on the back of the personal computer 16. The video/audio program can then be processed for display on the computer screen using any conventional PC card capable of displaying NTSC signals on a computer monitor, such as a WinTV card. In addition to the cable connection, however, in the present invention there is also an Internet 20 connection created concurrently with the cable connection.” <i>Id.</i> at 5:45-59. “The Internet 20 connection can be via high-speed line, RF, conventional modem or by way of two-way cable carrying the video programming. The local PC 16 has Internet access via any of the current ASCII software mechanisms.” <i>Id.</i> at 5:60-64.
--	--

220. I have identified above that Armstrong in combination with Harrington discloses this element by disclosing a receiver that can receive signals corresponding to directives that are indicative of an audio, video, and/or graphic presentation requiring a set of resources via a display configured with a CPU.

221. It is my opinion that Harrington discloses a **receiver configured to receive signals corresponding to directives** because it discloses use of, for example, “a personal computer equipped with a **television card**” (Ex. 1007 at 2:50-54; 5:45-59), which a POSITA would understand to refer to a card that is

capable of receiving broadcast television signals. Harrington further discloses that the personal computer has an “Internet connection” through, for example, a “conventional modem” (Ex. 1007 at 5:60-64), which in my opinion a POSITA would understand to refer to a receiver for Internet signals since conventional modems are well-known to have Internet functionality.

222. As discussed above, both Armstrong and Harrington disclose *directives* which are **indicative of an audio, video and/or graphic presentation requiring a set of resources**, and a POSITA would have been motivated to combine Armstrong and Harrington given their overlap. *See supra*, Sec. XII.D.2 (describing Armstrong and Harrington’s disclosure of Claim Limitation 1[A]).

3. Limitation 22[B]: “a processing unit coupled to said receiver, wherein said processing unit is configured to”

223. Armstrong in combination with Harrington discloses this limitation.

22[B]: “a processing unit coupled to said receiver , wherein said processing unit is configured to”	Armstrong in combination with Harrington renders obvious this limitation based on at least the following exemplary citation(s): “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.” Ex. 1006 at 5:45-48.
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224. I have identified above that Armstrong in combination with Harrington discloses this element by describing a processing unit that is coupled with a receiver.

225. Harrington discloses a processing unit as part of, or coupled to, the receiver. Ex. 1007 at 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.”).

4. The remainder of Claim 22

226. Armstrong discloses the remainder of claim 22. I have identified the parallel claim language between claim 1 and claim 22 below. I have bolded the minimal differences below.

Claim 1	Claim 22
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;	22[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;
1[C]. initiating said presentation, in response to determining the one or more directives do not include said prerequisite directive; and	22[D]. initiate said presentation, in response to determining the one or more directives do not include said prerequisite directive; and
1[D]. prohibiting initiation of said presentation until said subset of resources are acquired, in response to	22[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.	determining the one or more directives include said prerequisite directive.
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227. It is my opinion that 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. Specifically, 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]. *See, supra* Secs. XII.B - D.2-5. Further, it is my opinion that the differences between the claims is minimal (e.g., “determining” versus “determine”). The core semantic meaning remains essentially the same in context.

**XIV. GROUND 7: ARMSTRONG IN COMBINATION WITH KUNZE
RENDERS OBVIOUS CLAIM 11**

228. I have reviewed Armstrong and Kunze, and it is my opinion that Armstrong in combination with Kunze renders obvious claim 11.

A. Motivation to Combine

229. It would have been obvious to modify Armstrong’s web page rendering software based on the teachings of Kunze for better user experience between devices. A POSITA would find it obvious to utilize Kunze’s standardized <meta> tags for metadata to ensure interoperability and seamless integration for

web page rendering software that Armstrong relies upon across devices. Ex. 1010 at 1 (describing standardized <meta> tags). A POSITA would have also found it obvious that Kunze's teachings would have enabled increased interoperability between web browsers (i.e., Safari, Internet Explorer, Mozilla Firefox, etc.), thus allowing for more consistent visual user experiences, because Kunze's Dublin Core metatags enable better content filtering and handling. *Id.*

B. Reasonable Expectation of Success

230. A POSITA would have also had a reasonable expectation of success combining the teachings of Armstrong and Kunze. Specifically, a POSITA would have relied 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. Ex. 1010 at 1 (describing <meta> tags); Ex. 1009 at 260 (describing ActiveX controls on web pages). Thus, given the mainstream use of Dublin Core metadata tags in other technologies, a POSITA would have found it simple to apply Kunze's teachings in implementing Armstrong. *Id.*

C. 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."

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

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 based on at least the following exemplary citation(s): “The Dublin Core [DC1] is a small set of metadata elements for describing information resources. This document explains how these elements are expressed using the META and LINK tags of HTML [HTML4.0]. A sequence of metadata elements embedded in an HTML file is taken to be a description of that file. Examples illustrate conventions allowing interoperation with current software that indexes, displays, and manipulates metadata, such as [SWISH-E], [freeWAIS-sf2.0], [GLIMPSE], [HARVEST], [ISEARCH], etc., and the Perl [PERL] scripts in the appendix.” Ex. 1010 at 1.
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232. I have identified above that Armstrong in combination with Kunze discloses this element by describing a standardized META name/value pair that can universally be understood to be indicative that its corresponding value is a prerequisite resource.

233. Kunze discloses **defining a META name/value pair**. See Ex. 1010 at 1. It is my opinion that a POSITA would have recognized that because Armstrong’s framework depends on the internet that it would be obvious to utilize

the <meta> tags taught by Kunze for reasons such as interoperability and uniformity for external sources like search engines to better index the web page.

234. Kunze in combination with Armstrong discloses **wherein said name is indicative that said corresponding value is a prerequisite resource**. It is my opinion that a POSITA would utilize Kunze's Dublin Core <meta> tags in a myriad of ways, including storing requirements in order for content to display, thus making the value a *prerequisite resource*. 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*.

XV. GROUND 8: ARMSTRONG IN COMBINATION WITH DEL SESTO RENDERS OBVIOUS CLAIM 12

235. I have reviewed Armstrong and Del Sesto, and it is my opinion that Armstrong in combination with Del Sesto renders obvious claim 12.

A. Motivation to Combine

236. It would have been obvious to modify Armstrong based on the teachings of Del Sesto to deal with the problem of orphaned applications to improve user experience. *See, supra*, Sec. XII.A (summary of Armstrong); Ex. 1011 at Summary (disclosure of the problem of orphaned applications). Del Sesto address automatic retirement or deactivation of interactive applications, to which a POSITA would find obvious to use as an ActiveX control embedded in a web

page. *Id.* A POSITA would find it obvious to integrate Del Sesto's teachings because they can create a controller that determines when and how the ActiveX component taught by Armstrong should be deactivated. Ex. 1011 at 2:31-34 (describing how invention solves problem of orphaned applications); *see also* Sec. XII.A (summary of Armstrong). As such, combining Del Sesto and Armstrong's teachings would improve systems allowing for better user experience. *Id.*

B. Reasonable Expectation of Success

237. A POSITA would have also had a reasonable expectation of success combining the teachings of Armstrong and Del Sesto. A POSITA would have found it simple to apply 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. Ex. 1011 at 2:31-34 (describing how invention solves problem of orphaned applications); 2:45-50 (describing how invention facilitates in response to a transmission from the broadcaster); *see also* Sec. XII.A (summary of Armstrong). In combining them, a POSITA would reasonably expect better performance and application behavior, thus a better user experience. *Id.*

C. 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.”

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

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 based on at least the following exemplary citations: “Upon receipt of this information, the Broadcast Receiver initializes an internal time counter and begins keeping track of the passage of time relative to the reference time base.” Ex. 1011 at 24:6-9. “[T]he Broadcast Receiver 140 retires the interactive applications according to the store retirement instructions.” <i>Id.</i> at 24:20-23.
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239. I have identified above that Del Sesto in combination with Armstrong discloses this element by describing a broadcast receiver that tracks time based on a reference and manages presentation of application availability by allowing or retiring them according to expiration timing or retirement instructions.

240. First, Del Sesto discloses **wherein prohibiting is in further response to detecting a corresponding time for expiration has not yet expired**. It is my opinion that a POSITA would find it obvious that the retirement mechanism taught by Del Sesto could be utilized in an ActiveX object embedded in a webpage or

application as taught by Armstrong. A POSITA would find it obvious that the retirement mechanism is a logical integration into Armstrong's system because it would increase functionality by enabling an ActiveX control, such as an animated marquee, to be retired in response to changes in broadcast conditions or program states.

241. It is my opinion that Del Sesto also continues to permit the interactive element to run if the execution time window has not expired. A POSITA would have found it obvious to utilize this feature for ActiveX controls to maintain visibility and functionality. A POSITA would find it obvious to integrate Del Sesto's teaching to apply the prohibiting of an ActiveX control's retirement. Del Sesto teaches an internal time counter that keeps track of the passage of time relative to the reference time base. Ex. 1011 at 24:6-9. Del Sesto's internal time counter, which enables the retirement of interactive applications based on a defined execution time window, is a mechanism that detects when an application should expire. Del Sesto teaches that each interactive application may define a time period in which it is permitted to execute, such that upon expiry, the broadcast receiver will retire the application. A POSITA therefore 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.

242. Second, Del Sesto discloses **allowing the presenting of said presentation in response to detecting said time for expiration has expired**. 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 the stored retirement instructions. Ex. 1011 at 24:20-23. It is my opinion that a POSITA would recognize that these stored retirement instructions could include various conditional instructions to allow the presentation. As a result, a POSITA would find it obvious that Armstrong's ActiveX controls can be dictated by program relevance or timing. Thus, in combining Del Sesto's conditional expiration logic with Armstrong's ActiveX control display behavior, a POSITA would find it obvious to do so in context of live or scheduled broadcast events because the time-sensitive functionality would be present.

XVI. CONCLUSION

243. Based on the foregoing, it is my opinion that Claims 1–3, 11-12 and 22–23 of the '169 patent are rendered obvious by the prior art discussed above.

244. In signing this Declaration, I recognize that the Declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be called upon to testify in deposition or before the Patent Trial and Appeal Board. If

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Declaration of Immanuel Freedman, Ph.D.

called upon to testify, I would testify truthfully and competently to all matters stated in this Declaration.

245. I reserve the right to supplement my opinions in the future to respond to any arguments that Patent Owner raises and to take into account new information as it becomes available to me.

246. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true and that such statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: July 11, 2025

I. Freedman
Immanuel Freedman, Ph.D.