

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUANTUM METRIC, INC., DECIBEL INSIGHT, LTD., AND
DECIBEL INSIGHT, INC.,
Petitioner,

v.

CONTENT SQUARE ISRAEL LTD. (f/k/a CLICKTALE LTD.),
Patent Owner.

IPR2022-00476
Patent 10,749,976 B2

Before KARL D. EASTHOM, STEVEN M. AMUNDSON, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

CYGAN, Administrative Patent Judge.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. BACKGROUND

A. Background and Summary

Quantum Metric, Inc., Decibel Insight, Ltd., and Decibel Insight, Inc. (“Petitioner”) filed a Petition for *inter partes* review (“IPR”) of claims 1–16 of U.S. Patent No. 10,749,976 (Ex. 1001, “the ’976 patent”). Paper 3 (“Pet.”). Patent Owner, Content Square Israel Ltd., f/k/a Clicktale Ltd., (“Patent Owner”), filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). An *inter partes* review may not be instituted on fewer than all claims challenged in the Petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

Having considered the Petition and the Preliminary Response, we conclude that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in challenging at least one of claims 1–16 of the ’976 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to § 314, we institute an *inter partes* review as to claims 1–16 of the ’976 patent on all grounds raised in the Petition.

B. Real Party in Interest

Petitioner identifies itself as real parties in interest to this IPR petition. Pet. 84. Patent Owner identifies Content Square Israel Limited and Content Square SAS as real parties in interest. Paper 5, 1.

C. Related Matters

The parties indicate that the '976 patent is involved in *Content Square SAS v. Quantum Metric, Inc.*, 1-20-cv-000832 (D. Del.), which is stayed pending *inter partes* review. Pet. 85; Paper 5, 2. The parties indicate that two additional patents (US 7,941,525 and US 9,508,081) are at issue in the above-listed proceeding, and that these patents have had all claims found unpatentable in final written decisions in *inter partes* review proceedings IPR2021-00464 and IPR2021-00363. Pet. 85; Paper 5, 3; Paper 13, 1.

D. The '976 Patent

The '976 patent (Ex. 1001) generally relates to tracking user activity during a visit to a web page. Ex. 1001, 5:31–42. The tracking system includes an interface receiving user activity information, which is information representative of activities performed by the user during the user's visit to the web site. *Id.* User activities may include “load, unload, scroll, mousemove, . . . click, resize, keydown, keypress, . . . submit, error, abort, etc.” *Id.* at 7:56–60. Each activity is associated with multiple properties, or attributes; for example, “mouse events are transmitted with x,y coordinates of the cursor and the state of the mouse buttons; keyboard events are transmitted with the key that was pressed.” *Id.* at 7:61–66. The tracking system's interface further receives web page information representative of web page content displayed to the user. *Id.* at 5:30–32. Web page information may include “URL [Uniform Resource Locator], referrer, browser type, platform type, screen resolution and depth.” *Id.* at 6:56–66.

The tracking system further includes a processor to generate user visit information in response to the user activity information and web page content information. *Id.* at 10:11–14. The processor further compensates

for a difference between a visual representation of the web page on a tracking display and a visual representation of the web page on another display. *Id.* at 10:15–18.

Due to potential disparities between the tracking display and the other display, absolute coordinates of the tracking display may not correspond to the same location on the other display. *Id.* at 10:61–63. Thus, the coordinates may be transferred in an invariant form; i.e., relative to other elements in the web page. *Id.* at 10:63–65.

E. Challenged Claims

Petitioner challenges claims 1–16 of the '976 patent. Claim 1, reproduced below (with bracketed identifying labels added), is an independent claim:

1. [1pre] A method for tracking an activity of a user visiting a web site, comprising:

[1a] receiving user activity information, wherein the user activity information represents activities performed by the user on a client computer when viewing a web page, wherein the user activity information is compressed, wherein the compressed user activity information is selectively sent by the client computer based on at least one transmission criterion;

[1b] receiving web page content information, wherein the web page content information represents web page content displayed to the user;

[1c] generating user visit information based on the user activity information and the web page content information; and

[1d] compensating for differences between a visual representation, on a tracking display, of the web page with a visual representation of the web page on another display.

Ex. 1001, 17:17–35.

F. Prior Art Relied Upon

Petitioner relies upon the prior-art references listed below. Pet. 1–2.

U.S. Patent Application Publication 2005/0177401 A1 (filed Apr. 15, 2005; published Aug. 11, 2005) (“Koeppel,” Ex. 1005);

U.S. Patent 6,877,007 B1 (filed Oct. 16, 2001; patented Apr. 5, 2005) (“Hentzel,” Ex. 1006);

U.S. Patent 7,484,182 B1 (filed June 30, 2005; patented Jan. 27, 2009) (“Smith,” Ex. 1007);

Based on the current record, we determine Petitioner has made a threshold showing that these references are prior-art patents or printed publications under 35 U.S.C. § 102. *See* Pet. 3–4; Ex. 1005, codes (22), (43); Ex. 1006, codes (22), (45); Ex. 1007, codes (22), (45).

Petitioner also relies on the Declaration of Jeremy Cooperstock, Ph.D. Ex. 1003 (“Cooperstock Decl.”). Patent Owner relies upon the Declaration of Christopher Schmandt. Ex. 2002 (“Schmandt Decl.”).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–16 of the ’976 patent on the following ground (Pet. 1–2):

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)
1–16	103(a)	Koeppel, Hentzel, Smith

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Because the application from which the ’976 patent issued claims the benefit of an application that was filed before this date, the pre-AIA versions of §§ 102 and 103 apply.

II. DISCUSSION

A. Legal Standards

1. § 103(a)

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter 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 person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations).² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze the asserted grounds based on obviousness with these principles in mind.

B. Level of Skill in the Art

Petitioner offers an assessment as to the level of skill in the art as of the time the '976 patent was filed. Pet. 2. Relying upon the Cooperstock Declaration, Petitioner asserts a person of ordinary skill in the art would have had a “Bachelor of Science (or equivalent degree) in Computer Science, Computer Engineering, or another academic discipline emphasizing the design/development of web-related technologies, in combination with at least one to two years of work experience with web-related technologies”

² Patent Owner does not identify any secondary considerations to be considered. Accordingly, we do not consider this aspect of the obviousness analysis at this stage of the proceeding.

and that “[s]uperior education could compensate for a deficiency in work experience, and vice-versa.” *Id.* (citing Ex. 1003 (Cooperstock Decl.) ¶¶ 16–17). At this juncture, Patent Owner has not provided an assessment of the level of ordinary skill in the art. To the extent necessary, and for purposes of this Decision, we accept the assessment offered by Petitioner as it is supported by the Cooperstock Declaration and is consistent with the ’976 patent and the asserted prior art.

C. Claim Construction

Petitioner submits that no constructions are necessary because the evidence and the art’s description of the claimed elements are similar to that of the ’976 patent’s specification. Pet. 2–3. In its Preliminary Response, Patent Owner asserts that “the ‘compensating’ limitation includes compensating for user activity.” *See* Prelim. Resp. 28.

The Petition was filed on January 29, 2021, after the effective date of the rule change that replaced the broadest reasonable interpretation standard. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2022)).

Accordingly, we apply the same standard that is used to construe a patent claim in a civil action under 35 U.S.C. § 282(b), and construe each claim in accordance with the ordinary and customary meaning of such claim, as understood by one of ordinary skill in the art in the context of the patent, and the prosecution history pertaining to the patent, as articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). “[W]e need only

construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

For purposes of institution, we need only determine whether the correct construction of the “compensating for differences between a visual representation, on a tracking display, of the web page with a visual representation of the web page on another display” limitation (limitation [1d]) includes compensating for user activity. For the reasons set forth below, we determine that it does not.

Patent Owner asserts that the claim focuses on user activity, citing limitations involving “user activity” in limitations [1a]–[1c], thus providing context for the “compensating” limitation [1d]. Prelim. Resp. 29–30. Patent Owner asserts that the Specification confirms such a reading, citing its description of the “visual representation [being stored] . . . for playback” in stage 909, and that stage 908 “can include compensating for differences between the visual representation of information at the client [or a playback] display.” *Id.* at 30 (citing Ex. 1001, 10:46–56).

However, we determine that the plain language of the claim limits the “compensating” as between “a visual representation . . . of the web page” on a tracking display and on another display. Ex. 1001, 17:32–35. Although Patent Owner points to a broader embodiment in the Specification, embodiment 9B, the claim language limits the compensating to representations of the web page. *See id.* at 10:46–56. A separate embodiment, embodiment 9A, closely matches the “compensating” claim language, which is associated with stage 940. *Id.* at 10:15–24. In that

embodiment, “[t]he compensating can be responsive to the relative locations of visual *elements of the web page*.” *Id.* at 10:18–20 (emphasis added).

Although both embodiments 9A and 9B are directed to tracking activities of a user, embodiment 9A more directly supports the claim language and does not require compensating for the user activities with respect to the web page.

Furthermore, some of the described user activities are not part of any visual representation; for example, keyboard activity. Ex. 1001, 7:65–66 (“keyboard events are transmitted with the key that was pressed”), 7:56 (“user activities (also referred to as events)”).

Patent Owner further asserts that Petitioner’s declarant Dr. Cooperstock admitted in a related *inter partes* review proceeding that the “user visit information” was part of the compensation claimed in U.S. Patent 9,508,081. Prelim. Resp. 31 (citing Ex. 2006 ¶ 158). However, Patent Owner admits that Dr. Cooperstock does not make a similar admission for the language of the claims in the ’976 patent. *Id.* To the extent that such an admission bears upon the claims in the ’976 patent, Dr. Cooperstock also states that it is the web page, rather than the user activities, that are being compensated for. Ex. 2006 ¶¶ 158–167, 168–169 (“the items/elements of the web page resized In this manner, code generation 213 compensates for differences between a visual representation, on a tracking display . . . of the web page and between a visual representation of the web page on another display.”) Although Dr. Cooperstock provides further discussion addressing “[i]f Patent Owner argues that [1d] and [1e] require mapping user activities on the web page,” the cited section of the Cooperstock declaration (Exhibit 2006 ¶¶ 158–169) presumes that user activities are not being compensated for. *Id.* ¶ 170. Consequently, Dr. Cooperstock’s

declaration does not tend to show that the user activities are part of the “compensating” limitation in the ’976 patent claims.

In view of the foregoing, and for purposes of institution, we construe the “compensating” limitation as not compensating for user activities, but only for visual representations of the web page. Consequently, we do not agree with Patent Owner’s reasons supporting nonobviousness based upon such a construction. *See* Prelim. Resp. 28–56.

D. Asserted Obviousness of Claims over Koeppel, Hentzel, and Smith

Petitioner contends that claims 1–16 of the ’976 patent are unpatentable as obvious under 35 U.S.C. § 103(a), over the combined teachings of Koeppel, Hentzel, and Smith. Pet. 1.

Petitioner also relies upon the Cooperstock Declaration to support its positions. Ex. 1003. At this stage of the proceeding, we are persuaded by Petitioner’s explanations and supporting evidence. We begin our analysis with a brief overview of Koeppel, Hentzel, and Smith.

1. Overview of Koeppel

Koeppel relates to monitoring and collecting user responses to Web-based content. Ex. 1005 ¶ 3. Figure 1, as annotated by Petitioner, is reproduced below.

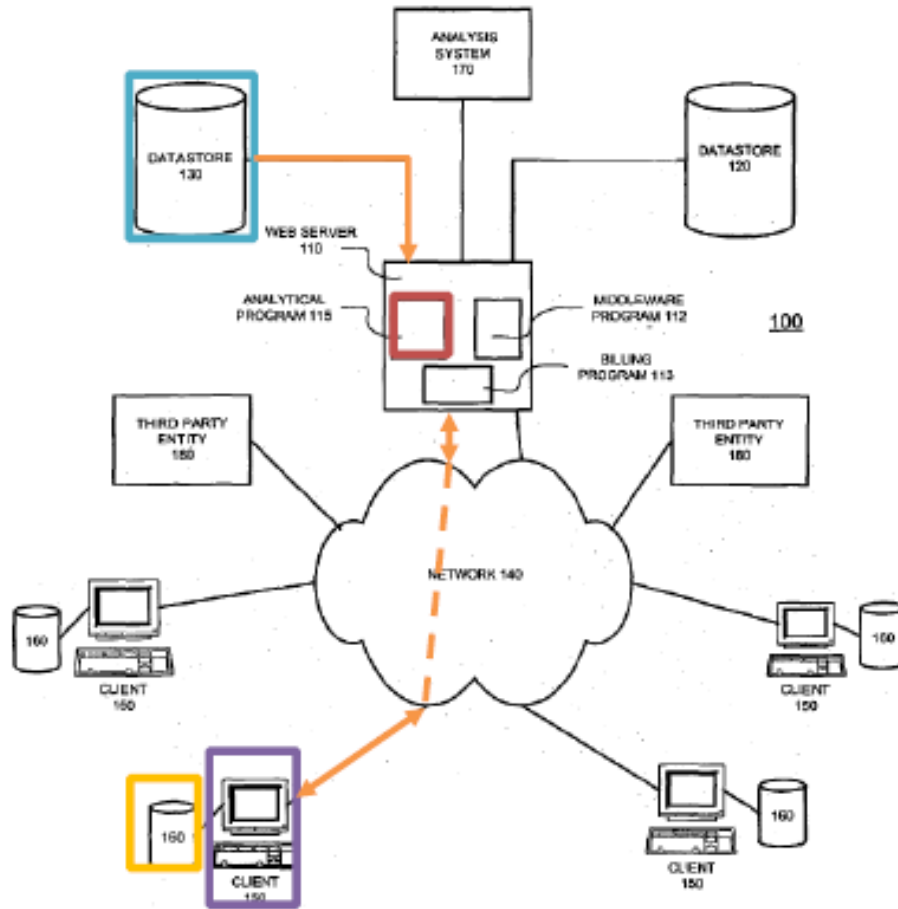


FIGURE 1

Figure 1 portrays elements of a Web-based network. *Id.* ¶ 26. A client-side data store 160 collects user activity such as “click-throughs,” screen scrolling, and mouse movements. *Id.* ¶¶ 21, 45. Activity data is sent, via client computer 150 and network 140, to Web server 110. *Id.* ¶¶ 21, 45–46.

On Web server 110, analytical program 115 determines in-view characteristics of the content at client computers 150. *Id.* ¶ 49. Data store 130, connected to Web server 110, stores content and rules for rendering content. *Id.* ¶ 52. The content may include attributes associated with content renderings, such as document structure, size, and positioning. *Id.* Annotations by Petitioner highlight data store 160 and client computer 150,

connected through double arrow-ended lines through network 140 to analytical program 115, to which an arrow points from data store 130.

Pet. 7.

2. Overview of Hentzel

Hentzel relates to tracking a user's interaction with a computer resource to recreate and display the user's interactive session. Ex. 1006, 2:8–25. Through such efforts, a resource such a Web page can be improved to make it more user friendly, more easily navigable, and more effective in communicating its advertising to the user. *Id.* at 2:59–65. Figure 1, as annotated by Petitioner, is reproduced below.

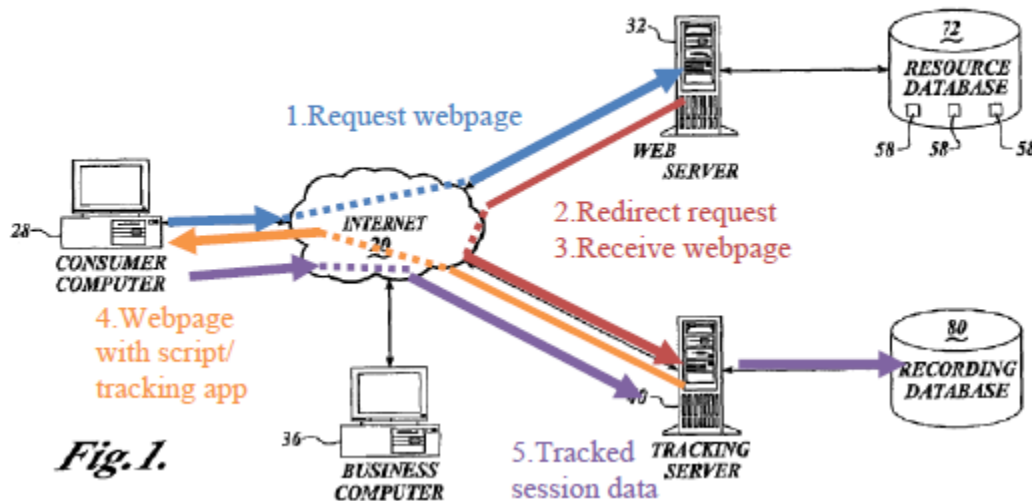


Figure 1 portrays a system for tracking a user's interaction with a resource such as a Web page. *Id.* at 3:27–30. A user at computer 28 requests a Web page 58 from Web server 32. *Id.* at 3:30–33. Web server 32 redirects the user to tracking server 40. *Id.* at 3:33–36. Tracking server 40 records the user's interaction with the Web page, including mouse movements, button clicks, and typing. *Id.* at 3:55–59. Subsequently, the recorded session may

be analyzed by a business using computer 36. *Id.* at 3:59–61. Petitioner’s annotations add the text of “1. Request webpage,” “2. Receive webpage,” “3. Redirect request,” “4. Webpage with script/app,” and “5. Tracked data,” with colored arrows connecting the components, the colors coded to the numeric annotations. Pet. 11.

3. *Overview of Smith*

Smith relates to graphical layout management techniques including resizing of graphical user interfaces. Ex. 1007, 3:24–32. According to Smith, when a graphical user interface is resized, determining the sizing and placement of panels within that window is “complicated for a sophisticated developer and may be beyond the skill level of some designers.” *Id.* at 2:23–27. In Smith’s technique, a designer provides at least two graphical layouts of different sizes. *Id.* at 3:33–42, 4:60–63. The graphical layouts, or “constraint images,” are then operated upon by computer programming to resize the user interface window. *Id.* at 7:41–48. Using dynamic interpolation or extrapolation, the programming may render a plurality of different sized interfaces. *Id.* at 3:26–32, 7:49–8:20. The interpolative and extrapolative formulas may include absolute and proportional values of the window, portions of the window, and proportions relative to other panes within the window. *Id.* at 8:21–32.

4. *Analysis*

Upon review of Petitioner’s explanation and supporting evidence, and Patent Owner’s Preliminary Response, we are persuaded that Petitioner has demonstrated sufficiently, for purposes of institution, that the combined teachings of Koeppel, Hentzel, and Smith make obvious the challenged

claims. Petitioner provides claim mappings of each individual limitation of the challenged claims to the combined teachings. Pet. 33–79.

a) *Petitioner’s Contentions*

With respect to the preamble of claim [1pre], “[a] method for tracking an activity of a user visiting a web site,” Petitioner contends this claim language, if limiting, is met by teachings of the combination, including Koeppel’s teaching of client nodes requesting and receiving web pages from a Web server. Pet. 34 (citing Ex. 1005 ¶¶ 5–9, 21, 37, 40–41, 45, 54). Petitioner points to both Koeppel and Hentzel for the inclusion of client-side scripts or applets that monitor, collect, and store user activity information such as scrolling, mouse movements, and page resizing. *Id.* at 35 (citing Ex. 1005 ¶¶ 18–21, 38–41, 55, 81–87, 93, 98, 154–158; Ex. 1006, 3:33–58, 7:45–50, 10:67–11:8, 12:54–13:15; Ex. 1003 ¶ 140 (Cooperstock Decl.)). Petitioner further points to Koeppel’s collection of data relating to whether selected content is actually in-view, including “coordinate and size information related to the browser window, the Web-page rendered within the browser window and components rendered within the Web page.” *Id.* at 36 (citing Ex. 1005 ¶¶ 83–85, 152; Ex. 1003 ¶ 141).

Petitioner proposes a combination that implements Hentzel’s tracking server components either within Koeppel’s Web server 110 or a separate tracking server 40, and collected or stored data is analyzed by Web server 110 or used during playback, from which a business computer can request and playback the session. *Id.* at 24–25, 36–37 (citing Ex. 1005, Abstr., ¶¶ 48–49; Ex. 1006, Fig. 4, 7:42–45, 10:15–11:40, 13:30–13:45, 13:60–14:27; Ex. 1003 ¶¶ 115, 142).

With respect to limitation [1a], “receiving user activity information, wherein the user activity information represents activities performed by the user on a client computer when viewing a web page, wherein the user activity information is compressed, wherein the compressed user activity information is selectively sent by the client computer based on at least one transmission criterion,” Petitioner further points to teachings of Koeppel and Hentzel, including sending user activity information selectively, i.e., based upon data store 160 filling up, or the browser being closed, or the user navigating to another page. *Id.* at 39 (citing Ex. 1005 ¶¶ 38–41, 55, 81–84, 154–165; Ex. 1006, 8:48–10:7, 12:21–13:7, 10:65–11:35; Ex. 1003 ¶ 148). Petitioner further points to Koeppel’s client-side script, applet, or application, which collects event information. *Id.* (citing Ex. 1005, claims 14 and 20, ¶¶ 20, 38–41, 55, 82–87, 98, 154, 158). Petitioner asserts that each of Koeppel’s monitored or tracked activities, such as screen scrolling, browser resizing, or mouse movements, is associated with certain properties, such as the position of the components, the coordinate and size information of the Web page rendered in the browser window, the screen scrolling or mouse position data, and the time data associated therewith. *Id.* at 40 (citing Ex. 1005, claim 20, Figs. 4A–4J, ¶¶ 38–41, 55, 82–154, 157, 177–181, Table 3; Ex. 1003 ¶¶ 150–151).

Petitioner further asserts that Hentzel teaches compressing the data that, in the combination, is sent upon the occurrence of the triggering event to the tracking entity for storage in the storage device. *Id.* at 41 (citing *inter alia* Ex. 1006, 10:65–11:8).

With respect to limitation [1b], “receiving web page content information, wherein the web page content information represents web page

content displayed to the user,” Petitioner asserts that tracking server 40 would have received the most recent version of the requested web page from web server 110, and permanently stored that web page copy. *Id.* at 42–43 (citing Ex. 1005 ¶¶ 37–45; Ex. 1006, 9:47–48; Ex. 1003 ¶¶ 113–116, 158). Petitioner further asserts that playback viewer application 96 would have requested a copy of the web page from the recording database of tracking server 40. *Id.* at 43 (citing Ex. 1006, Figs. 1, 4, 10:1–41, 13:30–14:27; Ex. 1003 ¶ 159).

Petitioner alternately asserts that Web server 110 stores a copy of the web page in data store 120, and would have received a request from playback viewer application 96 for a copy of the web page, and provided the copy to playback viewer application 30. *Id.* at 43–44 (citing Ex. 1005 ¶¶ 51–56, 155–157; Ex. 1006, 9:47–48, 10:15–41, 13:30–14:27, Figs. 1, 4; Ex. 1003 ¶ 160).

Petitioner further asserts that, in either implementation, Koeppel teaches a client side script/applet/application that collects in-view features including the size and position of elements/components of the web page, in association with the event data. *Id.* at 44 (citing Ex. 1005, Abstr., ¶¶ 18–21, 38, 70–75, 83–84, 154–157, 173–178; Ex. 1003 ¶¶ 161–162). Petitioner asserts that collected information includes coordinate and size information related to the browser window, the web page rendered within the browser window, and components rendered within the web page. *Id.* (citing Ex. 1005 ¶¶ 83–84, 105–106; Ex. 1003 ¶¶ 161–162).

With respect to limitation [1c], “generating user visit information based on the user activity information and the web page content information,” Petitioner contends this claim language is met by Koeppel’s

and Hentzel's teachings as discussed for elements [1a] (user activity information) and [1b] (web page content information). *Id.* at 47.

Specifically, Petitioner asserts that Hentzel teaches that the playback viewer application 96 recreates the interactive session using a copy of the recorded web page and data representing the interactive session. *Id.* at 48–49 (citing Ex. 1006, 10:37–41, 13:46–50, 14:12–35; Ex. 1003 ¶ 174).

With respect to limitation [1d], “compensating for differences between a visual representation, on a tracking display, of the web page with a visual representation of the web page on another display,” Petitioner asserts that this requires transforming the visual representation of the web page on the tracking display, including resizing the page's elements. *Id.* at 51 (citing Ex. 1001, 10:15–24, 11:6–15, Figs. 11A–11F). As discussed in Section II(C), we agree that this limitation should be construed as compensating for differences in the web page representation, but not for differences in the user activity information.

With respect to resizing, Petitioner points to Smith's code generation component 213 that generates code for resizing page elements, in which different elements may be resized using either default or proportional resizing parameters. *Id.* at 52 (citing Ex. 1007, 6:16–43, 7:30–52; Ex. 1003 ¶ 184). Petitioner asserts that the combined references teach that element position and size information would be tracked and used by code generation component 213 to enable resizing the page and its elements for the particular window provided within the business computer's display. *Id.* (citing Ex. 1003 ¶¶ 119–132). Petitioner points to Smith's teachings of linear or non-linear functions used in interpolative or extrapolative formulas, and of piece-wise linear resizing, for resizing different elements of the web page.

Id. at 53 (citing Ex. 1007, Abstr., 4:4–15, 6:21–32, 9:4–10; Ex. 1003 ¶ 187). Petitioner asserts that the combined references teach dynamically providing user interface resizing that compensates for differences between the client and business computer displays. *Id.* (citing Ex. 1007, 3:23–55, 6:16–20, 7:26–53; Ex. 1006, 10:23–41, 13:60–14:1; Ex. 1003 ¶¶ 180–189)

Petitioner further provides reasons to modify the teachings of Koeppel based on the teachings of Hentzel and Smith. With respect to compression of data prior to transmission, allegedly taught by Hentzel, Petitioner states that it would have been obvious to implement in Koeppel, because Koeppel discusses that an enormous amount of user data is transmitted and such is controlled by the client-side script, and because compression would have enabled such control through a straightforward, known modification of Koeppel, and that such would have amounted to the use of a known technique to improve similar devices in the same way, and combining prior art elements according to known methods to yield the predictable result of compressing user activity data prior to transmission. *Id.* at 21–22 (citing Ex. 1003 ¶ 104; Ex. 1005 ¶¶ 154, 168; Ex. 1006, 12:21–43).

With respect to session playback or visualization for assessing the effectiveness of content, allegedly taught by Hentzel, Petitioner states that it would have been obvious to implement such in Koeppel to enable an in-depth analysis of user interactions, providing a robust system that provides additional, complementary insight regarding user behaviors. *Id.* at 22–24 (citing Ex. 1003 ¶¶ 107–111). Petitioner contends that both such modifications of Koeppel would have amounted to the use of a known technique to improve similar devices in the same way, and combining prior art elements according to known methods to yield predictable results. *Id.* at

24–25 (citing Ex. 1003 ¶¶ 112–113). Petitioner contends that such a modification of Koeppel’s system to implement Hentzel’s playback would have been straightforward and within the skill of a person of ordinary skill in the art, because both Koeppel and Hentzel contemplate recording and analyzing web session data, with their elements performing the same functions in the combination as in the individual references. *Id.* at 25–26 (citing Ex. 1003 ¶ 118).

With respect to modifying the combined teachings of Koeppel and Hentzel in view of the teachings of Smith, Petitioner contends that a person having ordinary skill in the art would have known that different viewing devices may have different viewing dimensions, and would have understood or found obvious that the difference in display dimensions would necessitate resizing of objects therein, and that Smith provides a specific manner of doing so. *Id.* at 27–28 (citing Ex. 1006, 5:10–6:5, 7:27–41, 13:60–14:1; Ex. 1005 ¶ 45; Ex. 1003 ¶ 121). Petitioner contends that such a modification would have amounted to the use of a known technique to improve similar devices in the same way, and combining prior art elements according to known methods to yield the predictable result of a page and its elements being resized for display within a smaller-sized window, which would have been straightforward because the system taught by Koeppel in view of Hentzel collects data similar to Smith’s resizing constraints. *Id.* at 27–33 (citing *inter alia* Ex. 1005 ¶¶ 83–85, 152; Ex. 1003 ¶¶ 122–133).

With respect to claims 2–16, Petitioner points to specific teachings from Koeppel, Hentzel, and Smith, and articulates a rationale to combine teachings therein supported by a factual underpinning where appropriate, as meeting the additional limitations set forth in those claims. Pet. 58–79.

b) *Patent Owner's Preliminary Response*

We first address Patent Owner's argument that the references have not been shown to teach the "compensating" limitation because they do not teach or suggest compensating for user activity. Prelim. Resp. 3–4, 28–56. Because we determine that the claims, properly construed, do not require compensating for user activity, we do not agree with Patent Owner that the asserted combination is deficient for that reason. *See supra* § II(C).

Patent Owner further argues that no proper motivation has been shown to combine the references, and that such a combination would be inoperable. Prelim. Resp. 1–3. With respect to the combination of Koeppel and Hentzel, Patent Owner argues that it is not enough that, as Petitioner asserts, the references "complement" each other. *Id.* at 7. Patent Owner argues that, when reviewed in their entirety, a person having ordinary skill in the art would not have looked to combine the automation-focused Koeppel with the time-consuming manual replay of Hentzel. *Id.* at 8, 12–15, 19. Patent Owner points to Koeppel's desire to improve "[c]onventional implementations of target content provision for Web sites . . . **associated with the disadvantage of time consumption.**" *Id.* at 9 (alteration in original) (quoting Ex. 1005 ¶ 16; citing Ex. 2002 ¶ 112). Patent Owner admits that Koeppel does disclose generation of CER ("Content Effectiveness Record") reports for third parties; i.e., manually reviewed reports, but asserts that those reports do not change the automated nature of Koeppel. *Id.* at 13–14 (citing Ex. 1005 ¶ 178; Ex. 2002 ¶ 123). Patent Owner argues that Petitioner has not explained why a person of ordinary skill, understanding the advantages of automatic operation, would have modified Koeppel with

additional manual functions such as taught in Hentzel. *Id.* at 9–10, 19 (citing Ex. 2002 ¶ 113).

Patent Owner further asserts that Koeppel’s “in-view” analysis does not address any difference in display sizes between two devices, and therefore does not suggest or support any combination with Hentzel. *Id.* at 15, 18–19. Patent Owner also asserts that Hentzel does not address different display sizes between a user’s computer and a client’s business computer, instead seeking to accurately match the dimensions of the browser window as viewed on the user’s computer. *Id.* at 16–18 (citing Ex. 1006, 10:23–30, 13:62–14:1; Ex. 2002 ¶¶ 130–133). Patent Owner dismisses Petitioner’s assertion that the relative sizes of the user’s computer and the business computer may prevent display of a browser window in its exact dimensions as “pure conjecture.” *Id.* at 18 (citing Ex. 2002 ¶ 134).

We do not agree. The Federal Circuit has recognized that “[a] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (alteration in original). Further, “simplicity of the prior art is rarely a characteristic that weighs against obviousness of a more complicated device with added function.” *In re Dance*, 160 F.3d 1449, 1344 (Fed. Cir. 1998). Thus, Patent Owner’s argument that adding Hentzel’s playback and visualization functionality adds features that would consume additional time and user intervention is considered, but does not obviate Petitioner’s provided reason to combine based on an advantage; namely, providing a more in-depth analysis, through visualization of user interactions with web page content, of how content can be optimized. Pet. 24. Nor does

it obviate Petitioner's other reason to combine, in that implementing Hentzel's playback functionality in Koeppel "would have amounted to the use of a known technique to improve similar devices in the same way, and combining prior art elements according to known methods to yield predictable results—providing a visualization and statistical analysis of a user's web page interactions." *Id.* at 25.

Further, the record supports Petitioner's reasons to combine, as furthering Koeppel's goal of determining the "success of the content presented on the Web page displayed to users," by monitoring "[d]etailed user responses associated with" the content to adjust the content for targeted advertising. Ex. 1005 ¶¶ 21–22, 39. Additionally, Koeppel's embodiment of a content effectiveness record that suggests content changes, but does not automatically implement them, undercuts Patent Owner's argument that Koeppel seeks to avoid any further analysis and that a person of ordinary skill viewing Koeppel would be uninterested in improvements that are not strictly related to automated content replacement.

In view of the foregoing, we determine, for purposes of institution, that Petitioner has shown advantages of data compression for efficient transmission and for additional, complementary insight regarding user behaviors, such that a person having ordinary skill in the art would have combined the teachings of Koeppel and Hentzel.

With respect to the additions of the teachings of Smith, Patent Owner argues that because Hentzel teaches replay using the same browser dimensions as the viewed web page, and Koeppel seeks to avoid playback, a person of ordinary skill in the art would not have looked to Smith for resizing, regardless of whether different screen sizes were known in the prior

art. Prelim. Resp. 10 (citing Ex. 2002 ¶ 114; Ex. 1006, 10:23–30), 19–20. Patent Owner further argues that Smith is concerned with developer-established constraint images, not with any two particular display devices. *Id.* at 11, 22, 24–27 (citing Ex. 2002 ¶¶ 115, 162–163). Patent Owner further argues that Smith is concerned with defining constraint images before the webpage would be displayed. *Id.* at 11 (citing Ex. 1007, 7:41–45). Patent Owner argues that a person having ordinary skill in the art would not think to discard such teachings of Smith to make alterations contrary to its fundamental nature, causing Smith to be inoperable for the purpose sought by Petitioner. *Id.* at 12, 23 (citing Ex. 2002 ¶ 117; *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016)), 22–26 (citing Ex. 2002 ¶¶ 154–156, 161–166). Patent Owner further asserts that Smith is concerned with code to run an application, and not with a client/server implementation such as a browser/web server implementation. *Id.* at 22–23, 25 (citing Ex. 1007, 5:28–40, 7:41–62; Ex. 2002 ¶¶ 151–153, 160).

We do not agree. As discussed in both Koeppel and Hentzel, computerized displays were known to exist in many different sizes at the critical time. Pet. 27–28 (citing Ex. 1006, 5:10–6:5, 7:27–41, 13:60–14:1; Ex. 1005 ¶ 45; Ex. 1003 ¶ 121). Dr. Cooperstock and Mr. Schmandt both confirm the prevalence of differently sized displays at the critical time. Ex. 1003 ¶ 121; Ex. 2002 ¶ 22. Dr. Cooperstock states that such differently sized displays could cause difficulties with Hentzel’s objective of providing a browser window (e.g., user interface) on the local display that has the “same dimensions” as on a remote display, when the local display is smaller than the remote display. Ex. 1003 ¶¶ 120–123 (emphasis omitted).

Dr. Cooperstock states that a person having ordinary skill in the art would have found it obvious to resize to a smaller window displayed on the local display. *Id.* ¶ 122. We find this consistent with Hentzel’s goal of “recreating ‘the events [on the remote display] as accurately as possible so that the browser will be unable to differentiate between a replayed mouseclick and an actual user click.’” *Id.* ¶ 83; Ex. 1006, 10:37–41.

Patent Owner considers Petitioner’s reasoning to be speculative because no reference explicitly sets forth such a situation or states that resizing would be desirable. Prelim. Resp. at 18 (citing Ex. 2002 ¶ 134). However, a reason to combine references in an obviousness inquiry is not limited to disclosures in the cited references, but can be based on “articulated reasoning with some rational underpinning,” and may “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). We find that the evidence of record supports Petitioner’s reasoning that a person of ordinary skill in the art, faced with replicating displayed windows on displays of different sizes, would recognize the advantages of window resizing such as taught by Smith.

With respect to Patent Owner’s assertion that Smith’s developer-created constraints would be inoperable when combined with the combined system of Koeppel and Hentzel, we do not agree because Petitioner’s combination does not require incorporation of the developer-based constraints. As formed by Petitioner, “[i]n the resulting combination, code generation 213 uses the web page’s layout information (including element sizes and positions)—as already collected by Koeppel—in resizing/modifying the web page for a different-sized browser window displayed in

the business computer 36.” Pet. 29. Although Smith uses constraints set by a developer at an initial stage, Petitioner’s combination uses Smith’s code generation but not Smith’s constraints, instead using Koeppel’s web page layout information. *Id.* Unlike the situation in *Trivascular*, there is no indication in the record that Smith’s code generation-based resizing would change the basic objective of Koeppel, which is determining in-view features for purposes of billing for advertising. *See Trivascular*, 812 F.3d at 1067–68 (finding it nonobvious to substitute noninflatable, nonpenetrating protuberances for inflatable, penetrating barbs where the “basic objective” of the barbs is to penetrate tissue).

Therefore, Petitioner has shown, for purposes of institution, and by a reasonable likelihood, that an ordinarily skilled artisan would have found it obvious to combine the constraint-based resizing teachings of Smith into the combined system of Koeppel and Hentzel.

5. Conclusion

Accordingly, based on the current record and for purposes of institution, we are persuaded that Petitioner has shown a reasonable likelihood that it would prevail on its assertions that claims 1–16 would have been obvious over the combination of Koeppel, Hentzel, and Smith.

III. CONCLUSION

Taking into account the Preliminary Response, we conclude that the information presented in the Petition demonstrates that there is a reasonable likelihood that Petitioner would prevail in challenging at least one of claims 1–16 of the ’976 patent as unpatentable. Given this determination, we institute trial on all challenged claims and all grounds raised in the Petition. *See SAS Inst.*, 138 S. Ct. at 1359–60; Patent Trial and Appeal Board

Consolidated Trial Practice Guide 64 (Nov. 2019), *available at* <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf> (“The Board will not institute on fewer than all claims or all challenges in a petition.”). At this stage of the proceeding, we have not made a final determination with respect to the patentability of any challenged claim.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4, an *inter partes* review is hereby instituted based on all claims and the sole ground raised in the Petition, which follows:

Claims 1–16 under 35 U.S.C. § 103(a) over Koeppel, Hentzel, and Smith;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

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