

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC.,
Petitioner,

v.

PALO ALTO RESEARCH CENTER LLC,¹
Patent Owner.

IPR2021-01434
Patent 8,732,584 B2

Before DANIEL J. GALLIGAN, JOHN A. HUDALLA, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

HUDALLA, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Facebook, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 10, 13, and 17 (“the challenged claims”) of U.S. Patent No. 8,732,584 B2 (Ex. 1001, “the ’584 patent”).

¹ Palo Alto Research Center LLC is formerly Palo Alto Research Center Inc. See Paper 30.

Palo Alto Research Center LLC (“Patent Owner”) filed a Preliminary Response (Paper 9, “Prelim. Resp.”). Taking into account the arguments presented by Patent Owner in the preliminary record, we determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to its unpatentability challenges. Pursuant to 35 U.S.C. § 314, we instituted this proceeding on April 4, 2022, as to all challenged claims and all grounds of unpatentability. Paper 11 (“Dec. on Inst.”).

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 14, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 20, “Pet. Reply”). Patent Owner also filed a Sur-reply (Paper 22, “PO Sur-reply”). An oral hearing was held on January 5, 2023, and a transcript of the hearing is included in the record. Paper 32 (“Tr.”).

Petitioner filed declarations of Christopher M. Schmandt with its Petition (Ex. 1002) and its Reply (Ex. 1017). Patent Owner filed a Declaration of David Martin, Ph.D., with its Response. Ex. 1023. The parties also filed transcripts of the depositions of Mr. Schmandt (Ex. 2007) and Dr. Martin (Ex. 1023).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 10, 13, and 17 of the ’584 patent. For the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that claims 10, 13, and 17 of the ’584 patent are unpatentable.

I. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies itself as the real party-in-interest. Pet. 1. Patent Owner identifies itself, Xerox Corporation, and Xerox Holdings Corporation as real parties-in-interest. Paper 3, 2; Paper 5, 2; Paper 30, 1.

B. *Related Proceedings*

The parties identify the following proceedings related to the '584 patent (Pet. 1; Paper 3, 2–3; Paper 5, 2–3):

Palo Alto Research Center Inc. v. Facebook, Inc., No. 2-20-cv-10753-AB (C.D. Cal. filed Nov. 25, 2020);

IPR2021-01264;

IPR2021-01294;

IPR2021-01461;

IPR2021-01467;

IPR2021-01472; and

IPR2021-01536.

C. *The '584 patent*

The '584 patent is directed to generating an information stream summary using a display metric. Ex. 1001, 1:6–9. Figure 1 of the '584 patent is reproduced below.

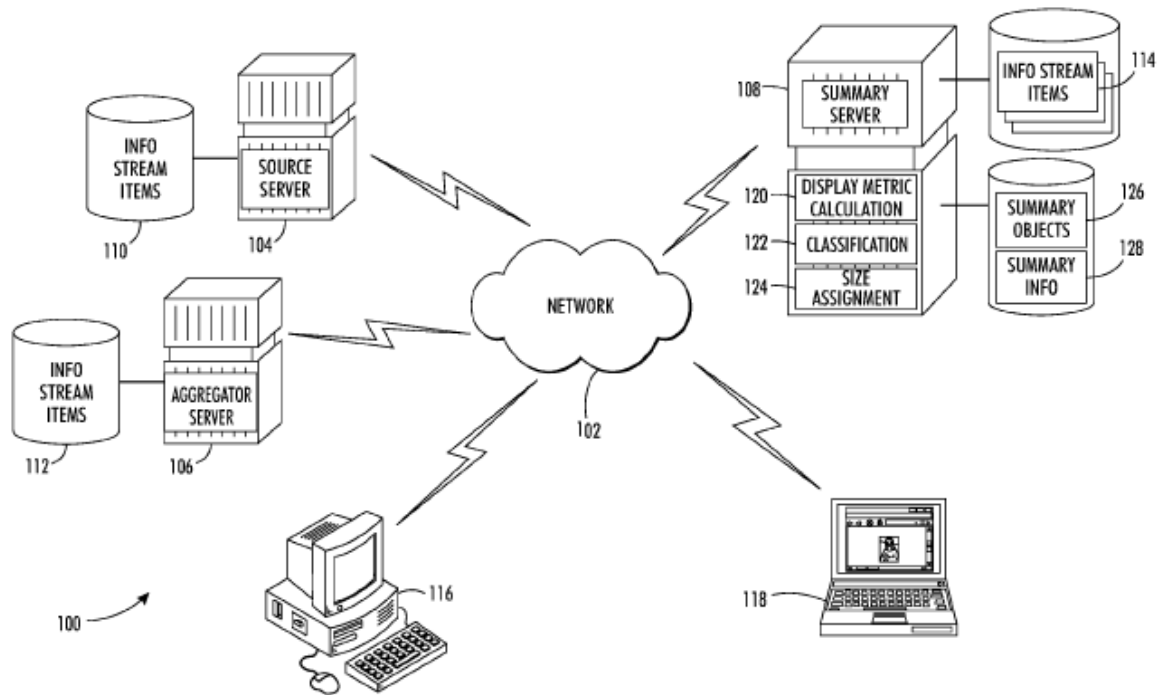


FIG. 1

Figure 1, above, depicts system 100 for generating an information stream summary using a display metric. *Id.* at 2:52–55. Users continually post articles and Web pages and send emails to network 102,² and these items are maintained as a distributed data corpus through source servers 104, feed aggregator servers 106, summary servers 108, and other data repositories that serve as information sources. *Id.* at 2:62–67. These sources respectively serve information stream items 110, 112, 114, and other information to users who access network 102 through user devices 116, 118, such as desktop personal computers 116, laptop personal computers 118, mobile telephones (not shown), and mobile Internet devices (not shown). *Id.* at 2:67–3:5.

² In the cited passage, the Specification mistakenly refers to “network 108,” but all other references to the network make clear the intended reference number is 102.

Summary server 108 includes display metric calculation module 120, classification module 122, and size assignment module 124. *Id.* at 3:32–34. Summary server 108 generates a summary of information stream items 110, 112, 114 using social attention data, and these summaries are used to populate a browser for review and manipulation by a user. *Id.* at 3:12–20, 3:30–32. In particular, display metric calculation module 120 calculates a display metric for each item 110, 112, 114. *Id.* at 3:35–38. The display metric is used to determine the interest that a particular information stream item 110, 112, 114 will have for a user relative to the other information stream items 110, 112, 114. *Id.* at 4:40–43. The display metric may be based on a social attention metric, which assesses the overall social attention given by users of the information stream to a particular information stream item 110, 112, 114 relative to other information stream items 110, 112, 114. *Id.* at 4:46–50. Classification module 122 classifies and groups individual information stream items 110, 112, 114 into summary objects 126 for display in the information stream summary. *Id.* at 3:38–41. Size assignment module 124 aggregates the display metrics for all information stream items 110, 112, 114 within an individual summary object 126 and determines the size that each summary object 126 will be displayed to the user on user devices 116, 118. *Id.* at 3:46–51.

The '584 patent issued from an application filed on November 9, 2010. Ex. 1001, code (22). As discussed below, Petitioner applies the November 9, 2010, application filing date for qualifying the asserted references as prior art. *See* Pet. 4.

D. Illustrative Claim

Of the challenged claims of the '584 patent, claim 10 is independent. Claims 13 and 17 depend from claim 10. Claim 10 is illustrative of the challenged claims and recites:

10. A computer-implemented method for generating an information stream summary using a display metric, comprising:
 - receiving an information stream comprising a plurality of information stream items;
 - calculating a display metric for each of the plurality of information stream items as an indication of relevance of one such information stream item to a user by measuring social attention given to that information stream item from other users relative to at least one of the remaining information stream items, wherein the social attention is determined based on a relative degree of interest by the user in content of the information stream items by assigning a ranking to each of the information stream items based on a previous interest shown by the other users to information stream items similar to the content;
 - grouping the plurality of information stream items into one or more summary objects;
 - assigning a display size to each of the one or more summary objects based on an aggregate of the calculated display metric of each of the information stream items within that summary object, wherein the display size of that summary object is relative to the aggregated calculated display metric;
 - and
 - displaying the one or more summary objects based on the assigned size.

Ex. 1001, 10:47–11:5.

E. Prior Art

Petitioner relies on the following prior art:

Bharat, K. et al., *Personalized, Interactive News on the Web*, Multimedia Systems 6, 349–58 (1998) (Ex. 1003, “Bharat”);

Kamba, T. et al., *An Interactive Personalized Newspaper on the WWW*, Proc. SPIE 2667, Multimedia Computing and Networking 1996 (Mar. 25, 1996) (Ex. 1004, “Kamba”);

U.S. Patent No. 7,346,668 B2, filed Aug. 30, 2002, issued Mar. 18, 2008 (Ex. 1005, “Willis”); and

U.S. Patent No. 7,831,928 B1, filed July 19, 2007, issued Nov. 9, 2010 (Ex. 1006, “Rose”).

F. The Instituted Grounds

We instituted *inter partes* review of claims 10, 13, and 17 of the ’584 patent on the following grounds (Dec. on Inst. 32), which are all the grounds presented in the Petition (Pet. 3):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
10, 13, 17	103(a) ³	Bharat, Kamba, Willis
17	103(a)	Bharat, Kamba, Willis, Rose

II. ANALYSIS

A. Legal Standards

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the ’584 patent was filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102 and 103 apply.

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. *See 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) where in evidence, so-called secondary considerations.⁴ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

B. Level of Ordinary Skill in the Art

Citing testimony from Mr. Schmandt, Petitioner contends a person of ordinary skill in the art

would have possessed at least a bachelor’s degree in electrical engineering or computer science, and two years of work experience in developing client-server applications, including web sites and web applications, and would be familiar with common web technologies, such as HTML and HTTP, and programming languages such as Java and Perl.

Pet. 4 (citing Ex. 1002 ¶¶ 9–14). Patent Owner states that it has applied Petitioner’s proposed level of ordinary skill for purposes of this proceeding. PO Resp. 7 (citing Ex. 2005 ¶¶ 40–42).

⁴ The trial record does not include any evidence of secondary considerations of nonobviousness.

We adopt Petitioner’s definition of the level of ordinary skill in the art without the qualifier “at least,” which introduces ambiguity. We are satisfied that this definition comports with the level of skill necessary to understand and implement the teachings of the ’584 patent and the asserted prior art.

C. Claim Interpretation

In an *inter partes* review, we construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). Accordingly, our claim construction standard is the same as that of a district court. *See id.* Under the standard applied by district courts, claim terms are generally given their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

In the Petition, Petitioner states that it “does not believe express claim construction is necessary at this time.” Pet. 7. Patent Owner also does not put forth any terms for construction, and Patent Owner agreed at the oral hearing that all terms of the challenged patent should be accorded their plain and ordinary meaning. Tr. 22:6–14. Notwithstanding, Patent Owner makes

extensive arguments about how the recited “ranking” that is “assign[ed]” in claim 10 must be a comparative, rather than an objective, measure. PO Resp. 15–18; PO Sur-reply 19–22. Petitioner replies to these arguments from Patent Owner. Pet. Reply 15–19.

We need not decide the issue of whether a “ranking” must be comparative because, as discussed below, Petitioner persuasively shows that the asserted prior art teaches the assignment of a comparative ranking. *See infra* § II.D.4. Because of this, and having considered all of the other arguments in the trial record, we determine that no terms of the challenged claims require explicit construction. *See, e.g., Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness Ground Based on Bharat, Kamba, and Willis

Petitioner contends the subject matter of claims 10, 13, and 17 would have been obvious over the combination of Bharat, Kamba, and Willis. Pet. 11–54; Pet. Reply 1–25. Patent Owner disputes Petitioner’s contentions. PO Resp. 7–20; PO Sur-reply 2–25.

1. Bharat

Bharat is an article related to the “*Krakatoa Chronicle*, an interactive, personalized newspaper on the World Wide Web implemented as a Java applet.” Ex. 1003, 4. The Krakatoa Chronicle has a client-server architecture wherein “[a]rticles are collected and indexed at the server site,

and organized into newspapers for a community of registered users.” *Id.* at 5. Users download a web document containing an embedded applet to a client-browser, and the applet then displays the newspaper and handles input from the user. *Id.*

Figure 1 of Bharat is reproduced below.

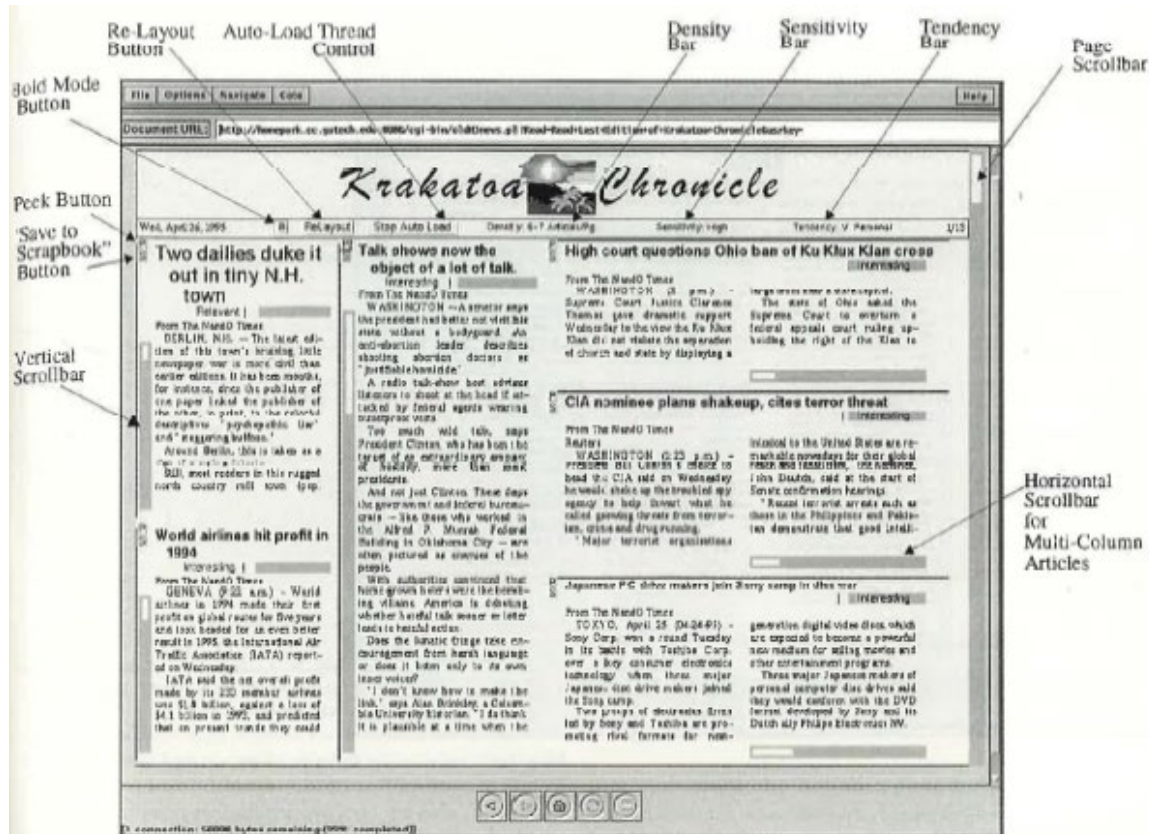


Figure 1, above, depicts a typical screen of the Krakatoa Chronicle newspaper viewed in a web browser. *Id.* at 5–6. The newspaper’s content and layout are based on the importance of each of the articles to the user (personal importance) and to the community (community importance). *Id.* Personal importance is the system’s estimate of the user’s interest in an article based on feedback given during the browsing of previous editions. *Id.* Users have individual interest profiles that track their interest in various topics. *Id.* Community importance is determined as the average of the

personal importance for each of the users in the community or for users “who have ‘significant’ opinions about the article (in the system’s estimation), determined using a pair of significance thresholds.” *Id.* at 9.

Articles are downloaded from news sources and then indexed to produce a set of document feature vectors. *Id.* at 8. Each document vector contains a list of keywords with corresponding weights, which are proportional to the merit of the keyword as being representative of that article. *Id.* at 9. Each user profile is a vector of keywords and weights (similar to document vectors) that itself is derived from document vectors by a process of weighted averaging. *Id.* Explicitly specified keywords are also a part of the user profile, and they may receive the maximum positive or negative weight as specified. *Id.*

“The process of creating a newspaper involves computing the goodness of the match” between the user profile and each of the articles, i.e., the computation of each article’s personal importance for the user. *Id.* at 9. Articles of high importance appear earlier in the newspaper, have titles with a larger font, and are allocated more space than articles of lesser importance. *Id.* at 5. The user may adjust a tendency bar slider to control the influence of personal and community importance ranging from “Very Personal” (where only personal importance is considered) to “Average” (where the scores are averaged) to “Fully General” (where only community importance is considered). *Id.*

Petitioner contends Bharat qualifies as prior art under 35 U.S.C. § 102(b). Pet. 10–11. In support of Bharat’s status as prior art, Petitioner includes testimony from Sylvia Hall-Ellis, Ph.D., a professor with experience in the field of library science. Ex. 1007 ¶¶ 6–8. Dr. Hall-Ellis

testifies that Bharat was “published in the journal *Multimedia Systems* [and] was publicly available on or shortly after October 21, 1998,” based on a record of the journal in an engineering library at the University of Wisconsin–Madison. *Id.* ¶¶ 39–46. Patent Owner does not contest the prior art status of Bharat.

As noted in our Decision on Institution (*see* Dec. on Inst. 14), the journal in which Bharat appears (*Multimedia Systems*) is dated September 1998, and it includes a 1998 copyright date. Ex. 1003, 1–2. Moreover, the copy of the journal referenced in Dr. Hall-Ellis’s declaration and asserted in this case includes a stamp from the University of Wisconsin that is dated October 21, 1998. *Id.* at 3. In our Decision on Institution, we considered these to be indicators of publication in 1998. Dec. on Inst. 14. We also credited Dr. Hall-Ellis’s testimony regarding public accessibility because it is consistent with other evidence of record. *Id.* The parties have put forth no further arguments regarding our preliminary findings, and we discern no reason to change them. Thus, we determine that Bharat qualifies as prior art under 35 U.S.C. § 102(b) because Bharat’s publication date in 1998, is more than one year before the earliest possible effective filing date of the challenged claims, which is November 9, 2010. Ex. 1001, code (22); Ex. 1003, 1–3; Ex. 1007 ¶¶ 39–46.

2. *Kamba*

Kamba (Ex. 1004) is an article about the Krakatoa Chronicle that is similar in content to Bharat. *See* Pet. 17 (“[T]he later-published Bharat discloses intervening improvements to techniques previously described in Kamba”); PO Resp. 4 (“Kamba describes an early iteration of the

Krakatoa Chronicle . . .”). Unlike Bharat, Kamba includes additional discussion about social issues involved in dynamically personalizing newspapers, such as the need to balance articles in which a user is interested with general interest articles. Ex. 1004, 9.

Petitioner contends Kamba qualifies as prior art under 35 U.S.C. § 102(b). Pet. 10–11. In support of Kamba’s status as prior art, Petitioner again relies on testimony from Dr. Hall-Ellis. Dr. Hall-Ellis testifies that Kamba was “published in the *Proceedings of SPIE -- the International Society for Optical Engineering*, volume 2667” and would have been publicly available on or shortly after June 19, 1996, based on a record of the volume in an engineering library at the University of Wisconsin–Madison. Ex. 1007 ¶¶ 47–52. Patent Owner does not contest the prior art status of Kamba.

As noted in our Decision on Institution (*see* Dec. on Inst. 15), the volume in which Kamba appears is dated “29–31 January 1996,” and it includes a 1996 copyright date. Ex. 1004, 1–3. Moreover, the copy of the journal referenced in Dr. Hall-Ellis’s declaration and asserted in this case includes a stamp from the University of Wisconsin that is dated July 8, 1996. *Id.* at 1. In our Decision on Institution, we considered these to be indicators of publication in 1996. Dec. on Inst. 15. We also credited Dr. Hall-Ellis’s testimony regarding public accessibility because it is consistent with other evidence of record. *Id.* The parties have put forth no further arguments regarding our preliminary findings, and we discern no reason to change them. Thus, we determine that Kamba qualifies as prior art under 35 U.S.C. § 102(b) because Kamba’s publication date in 1996, is more than one year before the earliest possible effective filing date of the challenged claims,

which is November 9, 2010. Ex. 1001, code (22); Ex. 1004, 1–3; Ex. 1007 ¶¶ 47–52.

3. *Willis*

Willis is a U.S. patent directed to dynamic, customized displays for presenting personalized content, such as articles. Ex. 1005, 1:19–21, code (57). In particular, *Willis* discloses “a system [that] incrementally learns the user’s preferences regarding previously-shown items and categories, and uses that information to decide what content should be shown to the user in the future.” *Id.* at 2:42–45. *Willis* describes categorizing the page view by grouping together articles of similar type or content. *Id.* at 13:29–31. In such cases, a combined priority weighting may be used to determine the grouped articles’ collective prominence on the page. *Id.* at 13:33–38. *Willis* also describes various ways of displaying only a portion of an article, such as with a summary, headline, title, and/or link. *See id.* at 11:11–16, 11:37–43, 12:57–13:3, 13:21–24.

Petitioner contends *Willis* qualifies as prior art under, *inter alia*, 35 U.S.C. § 102(e) based on its filing date. Pet. 11. Patent Owner does not contest the prior art status of *Willis*. We have no evidence of an invention date other than the filing date of the application that led to the challenged claims. Thus, we determine that *Willis* qualifies as prior art under 35 U.S.C. § 102(e) because *Willis*’s filing date of August 30, 2002, is before the earliest possible effective filing date of the challenged claims, which is November 9, 2010. Ex. 1001, code (22); Ex. 1005, code (22). *Willis* also qualifies as prior art under 35 U.S.C. § 102(b) because its issue date of March 18, 2008, is more than one year before the earliest possible effective

filing date of the challenged claims, which is November 9, 2010. Ex. 1001, code (22); Ex. 1005, code (45).

4. *Claim 10*

a. *Preamble*

Claim 10 recites “[a] computer-implemented method for generating an information stream summary using a display metric.” Ex. 1001, 10:47–48. Although Petitioner argues that the preamble of claim 10 is not limiting, Petitioner contends “Bharat and Kamba disclose a computer-implemented method for generating a personalized newspaper that includes news articles retrieved from external sites (**‘information stream summary’**).” Pet. 11 (citing Ex. 1003, 4, 8). Petitioner further contends the Krakatoa system of Bharat and Kamba uses a “weight” (i.e., the recited “display metric”) assigned to each news article “to determine the size and location of the area in which the article will appear on the personalized newspaper.” *Id.* at 12 (citing Ex. 1003, 5; Ex. 1004, 13). Patent Owner does not put forth any arguments related to the preamble of claim 10.

As discussed in greater detail below, we are persuaded that Bharat’s and Kamba’s Krakatoa system generates a newspaper from retrieved news articles (i.e., an “information stream summary”) based on article weights (i.e., “display metric[s]”). *See, e.g.*, Ex. 1003, 4–5, 8; Ex. 1004, 13. Because Petitioner has shown persuasively that Bharat and Kamba teach the preamble, we need not determine whether the preamble is limiting. *See Realtime Data*, 912 F.3d at 1375.

b. “Receiving” Step and Reasons for the Combination

Claim 10 further recites “receiving an information stream comprising a plurality of information stream items.” Ex. 1001, 10:51–52. Petitioner cites Bharat’s and Kamba’s teachings of the Krakatoa server receiving news articles from one or more external news sites. Pet. 13–15 (citing Ex. 1003, 5, 8, Fig. 6; Ex. 1004, 15). For the recited “plurality of information stream items,” Petitioner contends that Bharat’s periodic retrieval of articles teaches this aspect. *Id.* at 15–16 (citing, *inter alia*, Ex. 1002 ¶ 64). Petitioner contends “[a]n ordinarily skilled artisan would have been motivated to consult both Bharat and Kamba to understand the features, functionality and implementation of a common system – the Krakatoa personalized newspaper system.” *Id.* at 16–17 (citing Ex. 1002 ¶ 65). Petitioner also contends an ordinarily skilled artisan would have consulted both references because “the later-published Bharat discloses intervening improvements to techniques previously described in Kamba, including an improved method of calculating the ‘community score.’” *Id.* at 17 (citing Ex. 1002 ¶ 66). Petitioner also suggests that Kamba has a more complete discussion of “the human and social factors the developers considered in designing the Krakatoa system.” *Id.* Petitioner additionally contends an ordinarily skilled artisan would have perceived no difficulty in combining Bharat and Kamba because they describe the same underlying system, Krakatoa. *Id.* at 18 (citing Ex. 1002 ¶ 67).

Patent Owner does not dispute Petitioner’s analysis of the “receiving” step. Petitioner has shown persuasively that Bharat’s and Kamba’s Krakatoa server receives articles (i.e., “a plurality of information stream items”) from one or more external news sites. *See, e.g.*, Ex. 1003, 5, 8, Fig. 6; Ex. 1004,

15. Petitioner also has shown persuasively that an ordinarily skilled artisan would have combined the teachings of Bharat and Kamba with an expectation of success because they both concern the same system, Krakatoa, yet have different and complementary sets of details about the system. *See, e.g.*, Ex. 1002 ¶¶ 65–67.

c. “Calculating” Step

Claim 10 further recites

calculating a display metric for each of the plurality of information stream items as an indication of relevance of one such information stream item to a user by measuring social attention given to that information stream item from other users relative to at least one of the remaining information stream items, wherein the social attention is determined based on a relative degree of interest by the user in content of the information stream items by assigning a ranking to each of the information stream items based on a previous interest shown by the other users to information stream items similar to the content.

Ex. 1001, 10:52–62.

For “calculating a display metric,” Petitioner cites Bharat’s and Kamba’s teachings of the Krakatoa system calculating a weight for each news article. *See* Pet. 18–23. Specifically, Petitioner contends that the Krakatoa system indexes each article to produce a “document feature vector,” which “contains a list of keywords [that] were found to be highly representative of the document within the document set, and corresponding weights.” *Id.* a 19 (quoting Ex. 1003, 9) (citing Ex. 1003, 8–9; Ex. 1004, 10). Petitioner also contends that the Krakatoa system calculates a “personal score” for each article, which “represents the personal importance of the article to a particular user,” based on the document feature vector and a user

profile. *Id.* at 19–20 (citing Ex. 1003, 9–10; Ex. 1004, 11). According to Petitioner, the personal score “is represented as a numerical value from -1000 to +1000.” *Id.* at 20 (quoting Ex. 1003, 9). Petitioner further contends that the Krakatoa system calculates a “community score” for each article based on an averaging of personal scores. *Id.* (citing Ex. 1003, 9; Ex. 1004, 11). Petitioner additionally contends that the Krakatoa system calculates a weight (i.e., the recited “display metric”) for each article based on the personal and community scores and a “tendency factor,” which is a user-specified factor regarding “how much influence the personal score and the community score will have in calculating the weight for an article.” *See id.* at 20–22 (citing, *inter alia*, Ex. 1003, 5, 10; Ex. 1004, 13). According to Petitioner, the weight is the recited “indication of relevance” because the Krakatoa system determines where to place an article on a web page “based on the system’s assessment of the importance (i.e. ‘relevance’) of the article to the user.” *Id.* at 22–23 (citing Ex. 1002 ¶ 76; Ex. 1003, 5; Ex. 1004, 13) (emphasis omitted).

For “measuring social attention,” Petitioner contends that, in Bharat, the weight of a news article “is calculated based on the ‘community score’ for the news article, which in turn represents a measurement of the user interaction by other users relating to the article.” Pet. 23 (citing Ex. 1003, 9). Petitioner identifies two different types of “user actions” in the Krakatoa system of Bharat and Kamba that correspond to the recited “social attention”: (1) other users interacting with an article, such as by maximizing the article view or saving the article to a scrapbook (*id.* at 24–25 (citing Ex. 1003, 5–6, 11; Ex. 1004, 10–13)); and (2) other users providing feedback “by manipulating a graphical ‘Score Bar,’ to specify the relevance

of the article to the user” (*id.* at 25 (citing Ex. 1003, 5–6; Ex. 1004, 11)). Petitioner notes that the community score is based on individual users’ personal scores for an article and that user interaction events and explicit feedback impact personal scores for an article. *Id.* at 26–28 (citing Ex. 1003, 9; Ex. 1004, 11, 13, 15). Moreover, Petitioner contends the measured social attention is relative to other articles “because user interaction events and explicit feedback can change the computed weight, and in turn, change the ranking or ordering of the article relative to other articles.” *Id.* at 28 (citing Ex. 1003, 5, 10); *see also id.* at 29 (citing Ex. 1002 ¶ 83) (contending that it would have been obvious that article weights in Bharat and Kamba are a relative measurement).

For determining social attention “based on a relative degree of interest by the user in content of the information stream items,” Petitioner contends “the community score and weight (which incorporate the social attention) provide a ranking based on the Krakatoa system’s assessment [of] the importance of the article to the user as compared to other articles.” Pet. 33 (citing Ex. 1003, 5, 9; Ex. 1004, 13). For determining social attention “by assigning a ranking to each of the information stream items,” Petitioner cites the Krakatoa system’s assignment of a weight to each article based on the personal and community scores. *Id.* at 29 (citing Ex. 1003, 10; Ex. 1004, 13). Petitioner further contends that the ranking is “based on a previous interest shown by the other users to information stream items similar to the content” because other users’ interest in an article increases their own personal scores for the article, which, in turn, increases the community score and weight for the article. *Id.* at 30–33 (citing Ex. 1002 ¶ 88; Ex. 1003, 10; Ex. 1004, 13). For “information stream items similar to the content,”

Petitioner cites an example of how a user's interest in articles related to a particular keyword is used to increase personal scores, and, in turn, community scores and weights, for articles related to the keyword. *Id.* at 31–33 (citing Ex. 1002 ¶ 88; Ex. 1004, 13).

Having considered the full trial record, we are persuaded by Petitioner's analysis that Bharat and Kamba teach the "calculating" step of claim 10. We first discuss Petitioner's persuasive showing before explaining why Patent Owner's arguments do not undermine Petitioner's showing. Specifically, we are persuaded by Petitioner's evidence that Bharat's and Kamba's Krakatoa system calculates a weight for each news article, which teaches "calculating a display metric." *See* Pet. 18–22. As noted by Petitioner, the weight is calculated based on (1) a document vector of article keywords and keyword weights (*see, e.g.*, Ex. 1003, 8–9; Ex. 1004, 10); (2) a user's personal score for the article based on the user's profile (*see, e.g.*, Ex. 1003, 9–10; Ex. 1004, 11); (3) a community score based on personal scores for all users in a community (*see, e.g.*, Ex. 1003, 9; Ex. 1004, 11); and (4) a formula involving the personal score, the community score, and a tendency factor (*see, e.g.*, Ex. 1003, 5, 10; Ex. 1004, 13). We also are persuaded by Petitioner's analysis that the calculated weight in Bharat and Kamba provides an "indication of relevance" because more important articles—as determined by weight—appear earlier in the page with bigger headline fonts and more allocated space. *See, e.g.*, Ex. 1002 ¶ 76; Ex. 1003, 5; Ex. 1004, 13.

Furthermore, we are persuaded that the Krakatoa system of Bharat and Kamba "measur[es] social attention . . . from other users" when it computes a community score for an article. *See, e.g.*, Ex. 1003, 9–10;

Ex. 1004, 11, 13, 16. Petitioner also persuasively shows that “social attention” in Bharat and Kamba includes user actions such as a user scrolling, peeking at, and saving articles and manipulating a “Score Bar” to indicate the importance of an article. *See, e.g.*, Ex. 1003, 5–6, 11; Ex. 1004, 10–13. We additionally are persuaded that social attention is measured relative to other articles because user actions can change article weights and thus alter the newspaper ordering and treatment of articles relative to one another. *See, e.g.*, Ex. 1002 ¶ 83; Ex. 1003, 5, 10.

Petitioner also has shown persuasively that, in Bharat and Kamba, user actions related to “social attention” result in assigning a weight (i.e., “a ranking”) to articles. *See* Pet. 29–31. We agree with Petitioner that the “weight provides a **ranking** because . . . it ranks the relevance of the news article against other news articles, as evidenced by the way in which it is later used to display the articles in the newspaper in a particular order commensurate with their weights.” *Id.* at 29–30 (citing Ex. 1003, 13; Ex. 1004, 10). In particular, Kamba teaches that the most important articles—as determined by article weight—are placed in the top-left of the online newspaper, whereas the least important are placed in the bottom-right. *See, e.g.*, Ex. 1004, 13. Bharat likewise teaches “sorting the article set based on the weights of articles.” Ex. 1003, 10.

For similar reasons, we are persuaded by Petitioner’s contentions for the recited “social attention” being “determined based on a relative degree of interest by the user.” As stated above, Petitioner’s mapping of “social attention” includes user actions in the Krakatoa system such as a user scrolling, peeking at, and saving articles and manipulating a “Score Bar.” *See, e.g.*, Ex. 1003, 5–6, 11; Ex. 1004, 10–13. Petitioner explains that

“when a user shows interest in the content of an article, the user’s profile is updated such that future articles with similar content will receive a higher score and thus be ranked higher than other articles.” Pet. 31–32 (citing Ex. 1002 ¶ 87; Ex. 1003, 5, 9; Ex. 1004, 11–13). Petitioner also explains that “the community score and weight (which incorporate the social attention) provide a ranking based on the Krakatoa system’s assessment the importance of the article to the user as compared to other articles. *Id.* at 33 (citing Ex. 1003, 5, 9; Ex. 1004, 13).

Patent Owner argues that Petitioner fails to offer sufficient proof that Bharat and Kamba teach the “relative degree of interest” limitation. PO Resp. 8–9; PO Sur-reply 2–6. According to Patent Owner, Petitioner’s analysis of this limitation “consists of a single parenthetical that is not accompanied by any analysis or reasoning.” PO Sur-reply 2 (citing Pet. 33); *see also* PO Resp. 8–9 (same argument). Patent Owner also argues that Petitioner improperly relies on the same portions of Bharat and Kamba for teaching both the “indication of relevance” and “relative degree of interest” limitations. PO Resp. 9–14; PO Sur-reply 6. Patent Owner cites a number of cases for the proposition that the “indication of relevance” and “relative degree of interest” limitations should be presumed to be distinct elements with different meanings. PO Resp. 9–14 (citing, e.g., *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010)); PO Sur-reply 11 (citing, e.g., *Bd. of Regents of the Univ. of Texas Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008)). As such, Patent Owner argues that Petitioner cannot rely on the same portions of Bharat and Kamba (i.e., “double mapping”) for teaching these distinct elements. PO Resp. 10–11; PO Sur-reply 16.

We do not agree with Patent Owner's arguments. First, we do not agree with Patent Owner that the "indication of relevance" and "relative degree of interest" recitations should be treated as entirely separate concepts because they are actually related recitations within the same "calculating" step. As noted by Petitioner, "[b]oth of these terms are directly linked in the claim language to the measured 'social attention.'" Pet. Reply 6 (emphasis omitted). Petitioner illustrates how "social attention" ties these two recitations in the following highlighted version of the "calculating" step of claim 10:

calculating a display metric for each of the plurality of information stream items as **an indication of relevance** of one such information stream item to a user by measuring social attention given to that information stream item from other users relative to at least one of the remaining information stream items, wherein the social attention is determined based on **a relative degree of interest** by the user in content of the information stream items by assigning a ranking to each of the information stream items based on a previous interest shown by the other users to information stream items similar to the content.

Id. (emphasis by Petitioner) (quoting Ex. 1001, 10:52–62). Thus, the language of claim indicates that a "display metric" is calculated "as an indication of relevance . . . by measuring social attention," and "social attention is determined based on a relative degree of interest." *Id.*

We also note that the written description of the '584 patent supports similar treatment of the terms "indication of relevance" and "relative degree of interest." Specifically, one passage states that "[t]he relative degree of interest metric calculates the display metric." Ex. 1001, 5:31–32. And, as noted by Petitioner (Pet. Reply 7), claim 10 recites that the "display metric" is calculated as "an indication of relevance." In addition, other passages in

written description support similar interpretations of “relevance” and “interest.” *See, e.g.*, Ex. 1001, 2:46–50 (“Providing a summary of the information stream and highlighting the most interesting or relevant information greatly minimizes the time required by a user to locate and review the same information.”), 5:17–20 (“[T]he relative degree of interest metric is a probabilistic determination of what information stream items . . . an individual user may find interesting.”). Thus, the Specification of the ’584 patent undermines Patent Owner’s suggestion that the “indication of relevance” and “relative degree of interest” must be considered distinct and unrelated.⁵ For this reason, we find that Patent Owner’s cited cases regarding separately recited claim terms are not apt.

Second, we do not agree with Patent Owner that Petitioner’s analysis is limited to a single parenthetical or that it is otherwise insufficient. Patent Owner focuses on a parenthetical on page 33 of the Petition. *See* PO Resp. 8; PO Sur-reply 2. But Petitioner’s analysis of the “relative degree of interest” at page 33 is linked to its extensive analysis of “social attention” on the preceding pages. *See* Pet. Reply 2–5 (citing, *inter alia*, Pet. 23–33). As such, the analysis on these preceding pages supports the mapping of “relative degree of interest” on page 33. This makes sense given how the

⁵ Petitioner put forth reply testimony from Mr. Schmandt on this issue. *See* Ex. 1017 ¶ 13. Patent Owner argues that Mr. Schmandt’s reply testimony is improper reply evidence and is inconsistent with his cross-examination testimony. PO Sur-reply 9–10 (citing Ex. 2007, 34:21–35:2). We need not address Mr. Schmandt’s testimony because we find the Specification of the ’584 patent to be conclusive regarding the relatedness of “indication of relevance” and “relative degree of interest.”

plain language of claim 10 expressly links various recitations in the “calculating” step to measured “social attention,” as discussed above.

Third, we agree with Petitioner (*see* Pet. Reply 10–14) that Petitioner’s analysis for “indication of relevance” is somewhat different than its analysis for “relative degree of interest.” Specifically, Petitioner contends that the calculated article weight in the Krakatoa system provides an “indication of relevance” because it is used to determine article placement in the electronic newspaper. Pet. 22–23 (citing Ex. 1003, 5; Ex. 1004, 13). In contrast, Petitioner contends that an article’s community score and weight provide a ranking based on an assessment of the “relative degree of interest” of an article to the user in comparison to other articles. *Id.* at 33 (citing Ex. 1003, 5, 9; Ex. 1004, 13). As such, Petitioner’s analysis highlights the differing purposes of the personal score (“the personal interest in the article anticipated by the system”), community score (“the average of the personal scores of all the users that belong to the same community as the current user”), and calculated weight (“the ratio of the personal score to the community score”) in the Krakatoa system of Bharat and Kamba. Ex. 1004, 11, 13. These different aspects highlighted by Petitioner undermine Patent Owner’s suggestion that Petitioner merely parrots the same citations for different limitations. We also disagree with Patent Owner (PO Sur-reply 14–15) that Petitioner improperly shifts its analysis in its Reply, because all of Petitioner’s analysis for these limitations is rooted in the Petition, as Petitioner notes. *See* Pet. Reply 10–14.

Patent Owner also disputes that Bharat and Kamba teach “assigning a ranking” because the weight of an article in the Krakatoa system is an objective measure rather than a comparative measure. PO Resp. 15–18; PO

Sur-reply 19–22. We do not agree with Patent Owner’s argument. At the outset, we note that neither party puts forth a particular construction of the term “ranking” despite the parties’ allusions to intrinsic and extrinsic evidence regarding that term (*see* PO Resp. 16–17; Pet. Reply 15–24; PO Sur-reply 19–24); rather, both parties agree that the plain and ordinary meaning of this term applies. *See* Pet. 7; Tr. 22:6–14. Notwithstanding, even if we were to agree with Patent Owner that the plain and ordinary meaning of a “ranking” must be a comparative measure, we find that Bharat and Kamba teach a comparative ranking. As noted in the Petition, the Krakatoa system’s “weight provides a **ranking** because . . . it ranks the relevance of the news article against other news articles, as evidenced by the way in which it is later used to display the articles in the newspaper in a particular order commensurate with their weights.” Pet. 29–30 (citing Ex. 1003, 10; Ex. 1004, 13). Petitioner explains that the community score for an article is used to calculate the weight (*id.* at 30 (citing Ex. 1002 ¶¶ 74–75, 86; Ex. 1003, 9–10; Ex. 1004, 13); Pet. Reply 18), which accounts for the fact that the ranking is assigned “based on a previous interest shown by the other users to information stream items similar to the content.” And the Krakatoa system of Bharat and Kamba sorts articles and positions articles for display based on weight, which evidences the comparative usage of a calculated weight. *See, e.g.*, Ex. 1003, 10; Ex. 1004, 13.

We also do not agree with Patent Owner’s arguments that the “randomized Krakatoa layout algorithm” (*see* PO Sur-reply 20; Tr. 23:10–25:17, 57:18–59:18) disproves Petitioner’s cited teachings from Bharat and Kamba for “assigning a ranking.” Patent Owner is referring to Bharat’s teaching that, “to lay out articles within a given page, we employ a

randomized algorithm to recursively partition the page real-estate using vertical and horizontal splits.” Ex. 1003, 10. Yet Bharat expressly states that “[t]he ratio in which the split partitions the space is based on,” *inter alia*, “the cumulative weights of the articles on either side of the split.” *Id.* And Kamba states that the Krakatoa system places articles with higher weights in more prominent positions within an electronic newspaper. *See* Ex. 1004, 13 (“The location of articles in each page (top-left is the most important and bottom-right is the least), and within the newspaper (important articles appear early) for any given user is decided by each article’s ‘final score.’ The final score is the weight . . .”). These teachings support Petitioner’s position that the Krakatoa system uses assigned article weights as a basis for ranking and comparing articles as part of its layout process. The fact that Krakatoa may also use other criteria and/or may include an aspect of randomization in its layout algorithm does not undermine Petitioner’s persuasive showing.

For these reasons, Petitioner has shown persuasively that the combination of Bharat and Kamba teaches the “calculating” step of claim 10.

d. “Grouping” Step and Further Reasons for the Combination

Claim 10 further recites “grouping the plurality of information stream items into one or more summary objects.” Ex. 1001, 10:63–64. For the recited “grouping,” Petitioner notes that Bharat teaches classifying articles into sections. Pet. 35 (citing Ex. 1003, 8). Petitioner further cites Willis’s teaching of “group[ing] together articles of similar type or content, and in essence ‘categoriz[ing]’ the page view.” *Id.* at 36–37 (quoting Ex. 1005,

13:29–31) (emphasis omitted). For the recited “summary objects,” Petitioner cites Willis’s teachings of showing articles “only partially or in summary form,” such as by only showing a headline with a hyperlink to the full article. *Id.* at 41 (quoting Ex. 1005, 13:21–24) (citing *id.* at 11:11–16, 11:37–43, 12:57–13:3) (emphasis omitted). Petitioner contends an ordinarily skilled artisan would have found it obvious “to adapt the Krakatoa system described in Bharat and Kamba, based on the teachings of Willis, to not only provide category-based groupings of news articles . . . , but to enable the groupings to present a partial or summary version of the news articles.” *Id.* at 42 (citing Ex. 1002 ¶ 103). Petitioner asserts that an ordinarily skilled artisan would have been motivated to make this combination in order to provide a more efficient display for the user and to avoid copyright law problems associated with copying a whole article without permission. *Id.* at 42–43 (Ex. 1002 ¶¶ 103–105). Petitioner also contends an ordinarily skilled artisan would have had “more than a reasonable expectation of success” in making the combination because adapting the Krakatoa system to incorporate the teachings of Willis “would have required only routine and conventional computer programming techniques.” *Id.* at 43 (citing Ex. 1002 ¶ 106).

Further addressing its rationale for the combination, Petitioner contends an ordinarily skilled artisan would have modified Bharat’s and Kamba’s Krakatoa system to group news articles by category in order to provide a more effective presentation of news articles. Pet. 38 (citing Ex. 1002 ¶ 99). As motivation, Petitioner cites Bharat’s suggestion of classifying articles into sections. *Id.* at 38–39 (citing Ex. 1003, 8). Petitioner contends this would have been particularly beneficial given that

the Krakatoa system retrieves news articles from multiple sources. *Id.* at 40 (citing Ex. 1002 ¶ 99; Ex. 1003, 8; Ex. 1004, 15). Petitioner additionally contends an ordinarily skilled artisan would have incorporated the teachings of Willis “to enable the Krakatoa newspaper to group articles into categories, allowing it to more closely mimic the appearance and organization of a traditional print newspaper.” *Id.* at 39–40 (citing Ex. 1002 ¶ 100).

Patent Owner does not dispute Petitioner’s analysis of the “grouping” step. We are persuaded that Bharat teaches classifying articles into sections. *See, e.g.*, Ex. 1003, 8. We are further persuaded that Willis teaches displaying only summaries and/or headlines of articles. *See, e.g.*, Ex. 1005, 11:11–16, 11:37–43, 12:57–13:3, 13:21–24. Petitioner also has shown persuasively that an ordinarily skilled artisan would have had a reason to implement Willis’s grouping of articles in the Krakatoa system described in Bharat and Kamba: to provide a more effective presentation of news articles that mimics the appearance and organization of a traditional print newspaper. *See, e.g.*, Ex. 1002 ¶¶ 99–100. We additionally are persuaded that an ordinarily skilled artisan would have implemented Willis’s summarized/abridged articles in the system of Bharat and Kamba to provide a more efficient display for the user and to avoid copyright issues.⁶ *See, e.g., id.* ¶¶ 103–105. We also are persuaded by Mr. Schmandt’s unrebutted testimony that an ordinarily skilled artisan would have expected success in

⁶ We find Petitioner’s showing regarding “summary objects” persuasive regardless of whether “summary objects” in Petitioner’s proposed combination includes groups of whole articles or groups of summarized articles/headlines. *See* Pet. 40–41.

implementing Willis’s teachings in the Krakatoa system of Bharat and Kamba because it would have required only routine and conventional computer programming techniques. *See, e.g., id.* ¶ 106.

e. “Assigning” Step and Further Reasons for the Combination

Claim 10 further recites “assigning a display size to each of the one or more summary objects based on an aggregate of the calculated display metric of each of the information stream items within that summary object, wherein the display size of that summary object is relative to the aggregated calculated display metric.” Ex. 1001, 10:65–11:3. Petitioner cites Bharat’s teaching that, in the Krakatoa system,

[t]he newspaper’s content and layout are based on the importance of each of the articles to the user and to the community Articles of high importance will appear earlier in the newspaper, have titles with larger font, and be allocated more space than articles of lesser importance.

Pet. 44 (emphasis and alteration by Petitioner) (quoting Ex. 1003, 5).

Petitioner contends the display size is assigned “relative to the . . . calculated display metric” because “the display area is repeatedly subdivided for the weighted articles such that higher weighted articles are assigned more space than lower weighted articles.” *Id.* at 44–45 (citing Ex. 1002 ¶ 109; Ex. 1003, 5). Petitioner also notes Bharat’s and Kamba’s teachings of “a user-controlled ‘sensitivity factor’ that can further determine[] how an article’s weight affects the display space to which [it] is assigned.” *Id.* at 45–46 (citing Ex. 1003, 5–6; Ex. 1004, 13).

Petitioner additionally contends that it would have been obvious to extend Bharat’s and Kamba’s teachings about assigning article display size

to the recited “summary objects” in light of Willis. *Id.* at 46–47. According to Petitioner, “Willis discloses that when articles of similar type or content are grouped together, ‘a combined priority weighting may be used to determine their (collective) prominence on page 800.’” *Id.* at 47 (quoting Ex. 1005, 13:36–38) (citing Ex. 1005, 13:29–36). Petitioner contends that implementing Willis’s teachings in the Krakatoa system of Bharat and Kamba

would have predictably resulted in the Krakatoa system presenting a “**summary object**” (grouped articles) in which the display size assigned to the summary object was “**based on an aggregate of the calculated display metric of each of the information stream items within that summary object**”—i.e., the aggregate of the weights of each article in a group.

Id. (citing Ex. 1002 ¶ 113). Petitioner further contends that an ordinarily skilled artisan would have considered using a “combined weighting” to display groups of articles to be “the natural extension and byproduct of adapting Willis’s functionality of grouping related articles to Krakatoa’s use of article weights in assigning display size.” *Id.* at 48 (citing Ex. 1002 ¶ 114).

Patent Owner does not dispute Petitioner’s analysis of the “grouping” step. We are persuaded by Petitioner’s showing that (1) Bharat teaches assigning display area to articles based on their calculated weight (*see, e.g.*, Ex. 1003, 5); (2) Willis teaches assigning a combined weighting to groups of articles (i.e., a “summary object”) (*see, e.g.*, Ex. 1005, 13:29–38); and (3) an ordinarily skilled artisan would have combined Willis with Bharat and Kamba such that grouped articles in the Krakatoa system are assigned a display size based on an aggregated weight for articles in the group (*see, e.g.*, Ex. 1002 ¶ 113). We also are persuaded by Petitioner’s reasoning that

“using a combined weighting would have helped ensure that a collection of related articles received appropriate prominence in the newspaper presentation.” Ex. 1002 ¶ 114.

f. “Displaying” Step

Claim 10 further recites “displaying the one or more summary objects based on the assigned size.” Ex. 1001, 11:4–5. For the recited “assigned size,” Petitioner relies on the same analysis discussed above with respect to the “assigning” step. *See* Pet. 49. Petitioner also cites Bharat’s teaching of displaying a newspaper to a user such that it may be viewed in a web browser. *Id.* (citing Ex. 1003, 5–7). Patent Owner does not dispute Petitioner’s analysis of the “displaying” step. We are persuaded that Bharat and Kamba—as modified by Willis—teach displaying a newspaper, including groups of articles (i.e., summary objects), based on weights assigned to the groups. *See, e.g.*, Ex. 1003, 5–7.

g. Conclusion for Claim 10

Based on the entire trial record, Petitioner has shown persuasively that the combination of Bharat, Kamba, and Willis teaches all limitations of claim 10. Petitioner also has put forth persuasive reasons for combining these references and has established that an ordinarily skilled artisan would have had a reasonable expectation of success in making the combination. Thus, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 10 would have been obvious over the combination of Bharat, Kamba, and Willis.

5. *Claim 13*

Claim 13 depends from claim 10 and further recites “extracting summary information from each of the information stream items; and displaying the summary information with the respective information stream item.” Ex. 1001, 11:18–22. For “extracting summary information,” Petitioner cites Bharat’s teaching of “a Perl script [that] separates the title, credits, and content portion of each of the articles, and formats the content into justified Times-Roman using the UNIX utility, *troff*.” Pet. 50 (emphasis added by Petitioner) (quoting Ex. 1003, 9). For “displaying the summary information,” Petitioner cites Bharat’s teaching of displaying a title with an article in the Krakatoa system. *Id.* (citing Ex. 1003, 5). Patent Owner relies on the same arguments that it makes with respect to claim 10.

We are persuaded that Bharat teaches extracting the title from articles and displaying the title with the article in the Krakatoa system. *See, e.g.*, Ex. 1003, 5, 9. Thus, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 13 would have been obvious over the combination of Bharat, Kamba, and Willis.

6. *Claim 17*

Claim 17 depends from claim 10 and further recites that “the social attention comprises visible actions of the other users upon the information stream items.” Ex. 1001, 12:14–16. For “visible actions,” Petitioner cites “[t]he user actions of scrolling, ‘peeking,’ saving, and using the score bar in Bharat and Kamba.” *See* Pet. 51–53 (citing Ex. 1003, 5, 11; Ex. 1004, 11–13). Petitioner explains that these actions “qualify as ‘**visible actions**’ because they all represent express actions based on conscious user

behavior.” *Id.* at 52–53 (citing Ex. 1002 ¶ 124). Regarding “visible actions of the other users,” Petitioner cites an article’s community score and notes that it “represents the average of the personal scores of other users for an article.” *Id.* at 53. Petitioner explains that “actions that those other users took with respect to an article can affect the personal scores for the article, which can in turn impact the article’s community score and computed weight.” *Id.* (citing Ex. 1002 ¶ 125). Patent Owner relies on the same arguments that it makes with respect to claim 10.

We are persuaded that scrolling, peeking, saving, and using the score bar in Bharat and Kamba are visible actions. *See, e.g.*, Ex. 1003, 5, 11; Ex. 1004, 11–13. Petitioner also has shown persuasively that these visible actions relate to other users because they impact an article’s community score and weight. *See, e.g.*, Ex. 1002 ¶ 125. Thus, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 17 would have been obvious over the combination of Bharat, Kamba, and Willis.

E. Obviousness Ground Based on Bharat, Kamba, Willis, and Rose

Petitioner contends the subject matter of claim 17 would have been obvious over the combination of Bharat, Kamba, Willis, and Rose. Pet. 55–59. Because the Bharat–Kamba–Willis obviousness ground is dispositive as to all challenged claims, we do not reach Petitioner’s challenge based on Bharat, Kamba, Willis, and Rose. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-

precedential) (recognizing that “[t]he Board has the discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. CONCLUSION⁷

Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 10, 13, and 17 would have been obvious over the combination of Bharat, Kamba, and Willis.

IV. ORDER

Accordingly, it is

ORDERED that claims 10, 13, and 17 of the ’584 patent are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

⁷ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
10, 13, 17	103(a)	Bharat, Kamba, Willis	10, 13, 17	
17	103(a)	Bharat, Kamba, Willis, Rose ⁸		
Overall Outcome			10, 13, 17	

⁸ We do not reach this ground because we have determined this claim to be unpatentable under the other ground. *See supra* § II.E.

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