

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Apple,

v.

SENTIUS INTERNATIONAL, LLC,
Patent Owner.

IPR2020-01646
Patent 7,672,985 B2

Before DAVID C. McKONE, CHRISTOPHER L. OGDEN, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

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

I. INTRODUCTION

In response to a Petition (Paper 1, “Pet.”) by Petitioner Apple Inc. (“Apple”),¹ the Board instituted an *inter partes* review of claims 1–23, 25–29, 31, 32, and 35–46 of U.S. Patent No. 7,672,985 B2 (Ex. 1001, “the ’985 patent”). Paper 6. Patent Owner Sentius International, LLC (“Sentius”)² filed a Patent Owner Response (Paper 8, “PO Resp.”), Apple filed a Reply to the Patent Owner Response (Paper 10, “Pet. Reply”), and Sentius filed a Sur-reply (Paper 11, “PO Sur-reply”).

We held an oral hearing on February 3, 2022, and the transcript is entered on the record. Paper 17 (“Tr.”).

This is a Final Written Decision under 35 U.S.C. § 318(a) as to whether the claims challenged in the *inter partes* review are unpatentable. For the reasons below, we conclude that Apple has shown that all the challenged claims are unpatentable on the grounds of the Petition.

II. BACKGROUND

A. RELATED PROCEEDINGS

The parties identify the following as related matters: *Sentius Int’l, LLC v. Apple Inc.*, No. 4:20-cv-00477-YGR (N.D. Cal. filed Jan. 22, 2020), *transferred from* No. 1:19-cv-01444-MN (D. Del. filed July 31, 2019); and *Zoho Corp. v. Sentius Int’l, LLC*, No. 4:19-cv-00001-YGR (N.D. Cal. filed Jan. 1, 2019); *Sentius Int’l, LLC v. Microsoft Corp.*, No. 5:13-cv-00825-PSG (N.D. Cal. filed Feb. 22, 2013, terminated Feb. 5, 2015). Pet. 10–13, 68;

¹ Apple identifies itself as the real party in interest. Pet. 68.

² Sentius identifies itself as the real party in interest. Paper 3, 1.

Paper 3, 1; Ex. 1007 (claim construction order in *Sentius v. Microsoft*);
Ex. 1008 (claim construction order in *Zoho v. Sentius*).

B. THE '985 PATENT (EX. 1001)

The '985 patent relates to a system that automatically builds a term database that associates potential terms of interest within a set of documents with expert-provided content related to those terms. Ex. 1001, code (57); 1:16–17, 2:21–22, 2:31–32. The system also “syndicates content from that database to remote application installations.” *Id.* at 1:18–19.

The main example of such a term database, called the “RichLink Term Database,” “is a library that contains all terms and associated content that can be sorted and queried, using business criteria to organize into dictionaries or similar information,” and may include content types “such as text, image, sound, video, mixed media, [or] forms.” Ex. 1001, 4:13–18; *see also id.* at 12:67–13:2 (“The content comes from types such as text, images, movies, sounds, forms (including eCommerce transactions, surveys, or polls), or a mixture of the above.”). In this example, “there is a one-to-many relationship . . . between matching terms and content associated with matching terms.” *Id.* at 4:18–20.

The system identifies terms of interest by parsing the documents according to a set of rules. *See* Ex. 1001, 6:51–7:18, Fig. 7. Each term that the parser identifies “can be assigned manually or automatically to an expert based on the expert’s area of knowledge,” who “submits content for the terms assigned to them.” *Id.* at 11:21–24. These experts may, for example, be from a marketing team of a “content sponsor” who builds a dictionary of product information associated with the identified terms. *See id.* at 11:25–34.

An expert who is “assigned terms in this way will have an editing interface that enables them to submit content for their list of terms,” and this content may include “text, links, images, movies, sound files, response forms, or mixtures of some or all of these.” *Id.* at 11:37–39. Third parties may also sponsor content, and this content “can take almost any form, such as text, images, mixed media, banner ads, surveys, links, and email requests.” *See id.* at 13:65–67.

The system then annotates source documents by tagging the identified terms and creating links to the associated content. *See* Ex. 1001, 7:35–44, 8:35–9:17. Ultimately, when a user reads the document that has been annotated with this system, the user may click on the annotated term and bring up a window showing the content associated with that term. *See* Ex. 1001, 7:45–51; 12:6–15.

C. CHALLENGED CLAIMS AND GROUNDS

Independent claim 1, which exemplifies the other challenged claims, is as follows:

1. A computer implemented method for processing database content, the method comprising the steps of:
 - [1(a)] syndicating one or more data objects associated with a term database to one or more remote computers, wherein the one or more data objects contain data associated with one or more terms;
 - [1(b)] parsing one or more documents to identify at least one term based on at least one rule;
 - [1(c)] identifying content for the at least one term; and
 - [1(d)] associating the at least one term with the identified content;

[1(e)] wherein the one or more data objects associated with the term database provide a representation of at least a portion of the term database at the one or more remote computers and are used to link the identified content with the at least one term.

Ex. 1001, 14:8–22 (Apple’s reference letters added). Claims 11, 20, 21, and 36 are also independent, and the remaining challenged claims depend directly or indirectly from the independent claims. *See id.*, cols. 14–16.

Apple argues two grounds for *inter partes* review, as summarized in the following table:

Claim(s) Challenged	35 U.S.C. §	References(s)/Basis
1–23, 26–29, 31, 32, 35–46	103(a) ³	van Hoff, ⁴ Rodkin ⁵
25	103(a)	van Hoff, Rodkin, Ingram ⁶

Pet. 4.

D. DECLARATORY TESTIMONY

In its Petition, Apple relies on the declaration of Dr. Loren Terveen, who is a Professor at the University of Minnesota in the Department of Computer Science and Engineering. Ex. 1003 ¶ 6, App’x A (curriculum

³ 35 U.S.C. § 103(a) (2006), *amended by* Leahy–Smith America Invents Act, Pub. L. No. 112-29 § 103, sec. (n)(1), 125 Stat. 284, 287, 293 (2011) (effective Mar. 16, 2013). The ’985 patent issued on March 2, 2010, which is before the effective date of this amendment to section 103. *See* Ex. 1001, code (45).

⁴ Van Hoff, US 5,822,539, issued Oct. 13, 1998 (Ex. 1004).

⁵ Rodkin et al., US 6,092,074, issued July 18, 2000 (Ex. 1005).

⁶ Ingram et al., US 6,925,496 B1, filed June 16, 2000, issued Aug. 2, 2005 (Ex. 1006). Apple contends that Ingram is prior art because its filing date preceded the ’985 patent’s earliest priority date. *See* Pet. 63 (citing 35 U.S.C. § 102(e) (2006)). Sentius does not contest this. *See* PO Resp. 35–37, 61–62.

vitae). Supporting its Patent Owner Response, Sentius submits a declaration by Dr. Vijay Madiseti, who is a Professor in Electrical and Computer Engineering at the Georgia Institute of Technology. Ex. 2002 ¶ 8, Ex. A (curriculum vitae).

Apple contends that we should give Dr. Madiseti's testimony minimal weight because "the vast majority of his declaration is simply a verbatim copy of the attorney arguments in the [Patent Owner Response]," and because his "long and lucrative career testifying against Apple calls into question the independent nature of his opinions." Pet. Reply 22–23 (citing Ex. 1014, 40:22–42:7, 43:5–50:24, 64:3–20; Ex. 2002 Ex. A; Ex. 1015).

We disagree that these are persuasive reasons for us to diminish the weight we give Dr. Madiseti's testimony. In this decision, we consider his testimony and give it appropriate weight based solely on its merits.

III. GROUNDS OF THE PETITION

For the reasons below, we determine that Apple has shown, by a preponderance of the evidence, that claims 1–23, 26–29, 31, 32, and 35–46 of the '985 patent are unpatentable under the ground based on the combination of van Hoff and Rodkin, and that claim 25 is unpatentable under the ground based on the combination of van Hoff, Rodkin, and Ingram. Before analyzing these grounds in detail, we address two matters that will underlie our analysis: the level of ordinary skill in the art and the construction we will apply to the claim terms.

A. LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe the patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim is obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical “person of ordinary skill in the art,” from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Relying on Dr. Terveen’s testimony, Apple argues that a person of ordinary skill in the art would have had “at least a Bachelor’s degree in computer science and/or software engineering, or an equivalent degree with one year of experience in database management and creation. Additional education may substitute for lesser work experience and vice versa.” Pet. 3 (citing Ex. 1003 ¶¶ 23–25).

Sentius does not contest this, “but would add that a [person of ordinary skill in the art] would also have experience with web-based systems and design.” *See* PO Resp. 18–19 (citing Ex. 2002).

Apple’s and Sentius’s proposed articulations of the level of ordinary skill are slightly different than those proposed by their experts. On Apple’s behalf, Dr. Terveen, opines that an ordinarily skilled artisan would have had “multiple years of experience in the fields of software engineering or

computer engineering,” as well as “experience with data structures, user interface design, and database management and creation systems, or their equivalent.” Ex. 1003 ¶ 24. On behalf of Sentius, Dr. Madisetti states that he has “no substantial disagreement” with Dr. Terveen’s opinion on the level of ordinary skill, except that he would add “that such a person would have between 2–4 years of experience rather than leave it unspecified.” Ex. 2002 ¶ 44.

We find Apple’s articulation reasonable in light of the subject matter involved in the ’985 patent except for a couple of caveats. Both experts appear to agree that an ordinarily skilled artisan would have at least two years of experience, and we find their testimony persuasive. *See* Ex. 1003 ¶ 24; Ex. 2002 ¶ 44. We also agree with Sentius that an ordinarily skilled artisan would have had experience in web-based systems and design. While the ’985 patent “relates generally to database building and delivery of database content” (Ex. 1001, 1:14–15), it also discusses linking the database content to words and phrases in a web document (*see id.* at 2:7–59, 4:33–39, 5:54–58, 6:51–7:18, 8:22–29).

Thus, for our decision, we adopt a level of ordinary skill consistent with both parties’ proposals and the expert testimony: we find that a person of ordinary skill in the art would have had at least a Bachelor’s degree in computer science, software engineering, or an equivalent degree with 2–4 years of experience in database management and creation as well as web-based systems and design. *See* Pet. 3; PO Resp. 18–19.

B. CLAIM CONSTRUCTION

In an *inter partes* review, we construe a patent claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2021). This generally includes “construing the 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.” *Id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313, 1321. There are only two circumstances in which a construction departs from the ordinary and customary meaning: “1) when a patentee sets out a definition and acts as [their] 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). Any such special meaning of a term “must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.” *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

To construe the claim terms, “we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006). We also consider “[a]ny prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record” in this proceeding. 37 C.F.R. § 42.100(b) (2020).

We address the parties' claim construction arguments below.

1. *Uncontested Proposed Constructions*

Apple proposes constructions below for the following terms, as construed in two related litigations (*see supra* Section II.A; Exs. 1007, 1008):

Claim Term(s)	Apple's Proposed Construction
<i>syndicated / syndicating</i>	"making content available for automatic download over a network to one or more remote subscribed computers"
<i>database</i>	"a collection of data with a given structure for accepting, storing and providing, on demand, data for at least one user"
<i>linking the identified content with the at least one term / linking to the supplemental content</i>	"[create/creating] a pointer to data or information or the location of data or information that is external to the source material"
<i>term module for parsing / means for parsing</i>	A means-plus-function-limitation: function: "parsing one or more documents to identify at least one term based on at least one rule" corresponding structure: "a computer processor in conjunction with executable code for instructing the computer processor to parse one or more documents to identify at least one term based on at least one rule, and equivalents thereof"
<i>processing module for identifying / means for identifying</i>	A means-plus-function-limitation: function: "identifying content for the at least one term" corresponding structure: "a computer processor in conjunction with executable code for instructing the computer processor to identify content for the at least one term, and equivalents thereof"

<i>data objects associated with a term database / data objects associated with the term database / data objects associated with a database</i>	“computer readable data structures that include data from [a/the] [term] database”
<i>parsing one or more documents to identify at least one term based on at least one rule / parsing one or more source documents to identify at least one term based on one or more predetermined rules</i>	“breaking one or more documents into segments to identify at least one term based on [at least one rule] / [one or more predetermined rules]”
<i>lexicon object</i>	“computer-readable data structure that provides a local representation of the content of the term database”

Pet. 10–13 (alterations in original) (citing Ex. 1007; Ex. 1008, 31–33). Sentius does not contest these proposed constructions. *See* PO Resp. 20; *id.* at 25–26 (citing Ex. 2002 ¶¶ 95–97) (accepting the District Court’s constructions of *database* and the variations of *data objects associated with a term database*). We adopt these constructions for purposes of this decision.

Apple also proposes that we construe the term *template object* to mean “computer-readable data structure that identifies the rules that should be used in processing.” Pet. 13. And Apple proposes that we construe *means for associating* as a means-plus-function limitation with the function of “associating the at least one term with the identified content,” and the corresponding structure of “a computer processor in conjunction with executable code for instructing the computer processor to associate the at least one term with the identified content.” Pet. 14. Sentius does not include these terms among those it contends need to be construed. *See* PO Resp. 20.

Because the meanings of all the above terms are not in controversy, and do not affect the contested issues raised in this proceeding, we do not need to construe these terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe 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))).

2. “*content*,” “*identified/linked content*,” and “*identifying content for the at least one term*”

Sentius proposes that we construe the term *content* to mean “data, including data to be displayed.” PO Resp. 31 (citing Ex. 2002 ¶¶ 107–109). According to Sentius, the ’985 patent uniformly describes procuring content “for display” and then displaying content in a content window. *Id.* at 30–31 (citing Ex. 1001, 12:6–15, 12:57–65). Similarly, Sentius contends that we should construe the terms *identified content* (found in independent claims 1, 11, and 20) and *linked content* (found in independent claims 21 and 36) as “database content for display.” PO Resp. 29–30 (citing Ex. 2002 ¶¶ 105–106). And Sentius argues that we should construe the term *identifying content for the at least one term* (found in all independent claims) as requiring that the identified content be “for display.” *Id.* at 23 (citing Ex. 2002 ¶ 90); PO Sur-reply 1–2.

Sentius distinguishes between such content, which Sentius argues is “for display,” and metadata, which is not. Sentius argues that “[i]n the parlance of the ’985 patent, the display content curated in the system was also referred to as ‘supplemental information,’” which the patent treats and

discusses separately from metadata. *See* PO Resp. at 23–24 (citing Ex. 1001, 2:7–19, 11:55–67).

Apple replies that Sentius’s proposed construction is inconsistent with principles of claim differentiation because dependent claims 37, 41, and 45 explicitly require that the identified content “is displayed,” which is missing in their respective independent claims 1, 11, and 20. Pet. Reply 4–5. Apple also contends that the ’985 patent describes embodiments, including “links,” in which the identified content is not displayed. *Id.* at 5 (citing Ex. 1001, 11:35–38, 13:65–67).

Sentius acknowledges that the ’985 patent includes links among the possible “identified content,” but contends that these links are still “identified for display (and displayed),” so there is no inconsistency between the ’985 patent specification and its proposed construction. PO Resp. 25 (citing Ex. 2002 ¶ 94); *see also* PO Sur-reply 3 (citing Ex. 2002 ¶¶ 103–109). In its Sur-reply, Sentius also clarifies that it is distinguishing between identified content that is “*for display*” in independent claims 1, 11, and 20, and identified content that “*is displayed*” in dependent claims 37, 41, and 45. PO Sur-reply 2. Sentius also argues that Dr. Madisetti’s opinion on the claim-differentiation issue is un rebutted. *See* PO Sur-reply 11–12.

We disagree with Sentius that a person of ordinary skill in the art would have understood the terms *identified content*, *linked content*, or *identifying content for the at least one term* to require that the content is “for display.” First, Sentius does not specifically argue that the meaning of the term departs from its ordinary and customary meaning, and we find no clear evidence of such a departure in the ’985 patent or its prosecution history. *See generally* Exs. 1001, 1002; *see also* Pet. Reply 7–8 (arguing that neither

Sentius nor Dr. Madisetti had suggested that the '985 patent applicant disavowed claim scope or defined any terms) (citing Ex. 1014, 18:22–19:6, 22:16–23:15, 24:3–18 (Dr. Madisetti's cross-examination testimony)).⁷ For example, there is nothing in the plain language of independent claims 1, 11, or 20 that explicitly mentions that the content is intended “for display.” Nor do we find in the '985 patent or its prosecution history any commentary on the meaning of any of the above terms, let alone any definitional statements or disavowals of claim scope. Indeed, the '985 patent takes an expansive view of what the identified or linked content can be, suggesting that it “*can take almost any form*, such as text, images, mixed media, banner ads, surveys, links, and email requests.” Ex. 1001, 13:65–67 (emphasis added).

Next, although we understand the term *supplemental information* in the '985 patent to be an example of identified or linked content, we find no persuasive evidence that an ordinarily skilled artisan would have understood the '985 patent's descriptions of supplemental information to be definitional. In particular, Dr. Madisetti points to passages in the '985 patent referring to supplemental information, but fails to provide a basis for his opinion that these passages are definitional of the terms *identified content* or *linked*

⁷ For the first time in its Sur-reply, Sentius raises an alternative argument that the '985 patent applicants acted as their own lexicographers by including dependent claims 37, 41, and 45 to clarify that claims 1, 11, and 20 refer to “display content.” PO Sur-reply 13. This is an improper late argument not entitled to consideration. See 37 C.F.R. § 42.23(b). Nevertheless, we disagree with this argument because it turns the idea of claim differentiation on its head, and there is nothing in claims 37, 41, or 45 that would have clearly indicated to an ordinarily skilled artisan that the applicants were acting as their own lexicographers.

content, rather than (as we interpret the passages) merely descriptive of an embodiment. *See* Ex. 2002 ¶ 92 (citing Ex. 1001, 2:7–19, 11:55–67).

Finally, we consider Sentius’s argument that *identified content* or *linked content* only includes content “for display” to be inconsistent with the explicit requirement in claims 37, 41, and 45 that content “is displayed.” Ex. 1001, 16:42, 51, 61. This limitation in the dependent claims suggests that there are examples of identified content that are never displayed, and thus are not “for display.”⁸ *See Phillips*, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” (citing *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004))).

Thus, considering the evidence of record, we determine that the terms *content*, *identified content*, *linked content*, and *identifying content for the at least one term* have their ordinary and customary meanings, which do not require that the content necessarily be “for display” or include data “to be displayed.”

⁸ We note that the ’985 patent explicitly includes “sound files” as potential identified content. *See* Ex. 1001, 11:38; *see also* Tr. 20:14–24. At the hearing, Sentius’s counsel argued that a sound file would still be “displayed” in the sense that a window would appear in which a user could start and stop the sound file. *See* Tr. 43:6–46:14. Although a sound file might be associated with a displayable control window, we disagree that the underlying sound file, itself, would be “for display.” *See id.* Thus, a sound file would be an example of identified or linked content not “for display.”

3. “*term database*”

Similarly to the above terms, Sentius contends that we should construe *term database* to mean a database that “collects the content that will be displayed to a user.” PO Resp. 26. As evidence for this construction, Sentius cites passages in the ’985 patent disclosing that “supplemental information” for a given term is inserted into, or merged into, a central “term database.” *Id.* (citing Ex. 1001, 2:8–14, 3:39–40; Ex. 2002 ¶ 99). Sentius also points to passages in the ’985 patent describing a “RichLink Term Database module,” which is “a library that contains *all terms and associated content* that can be sorted and queried, using business criteria to organize *into dictionaries of similar information.*” PO Resp. 26–27 (quoting Ex. 1001, 4:14–17). According to Sentius, the ’985 patent “uniformly describes that the content stored in the term database is for display,” and includes mechanisms for controlling its display format or composition. *Id.* at 27–28 (citing Ex. 1001, 10:53–62, 12:7–15, 12:58–61; Ex. 2002 ¶¶ 101–102).

Apple disagrees that either “all the identified content must be stored in the database” or “all the identified content must be for display.” Pet. Reply 3. Apple first argues that dependent claims 38, 42, and 46 add to the independent claims a requirement that “the identified content is stored in the term database,” suggesting that the independent claims include no such requirement. *Id.* at 3 (citing Ex. 1001, claims 38, 42, 46). Apple makes a similar claim-differentiation argument as to dependent claims 37, 41, and 45, which require that “the identified content is displayed on a user interface.” *See id.*; *see supra* Section III.B.2.

Sentius contends that its argument about the phrase *term database* “do[es] not violate any claim differentiation principles because claims 1, 11, and 20 do not require that the identified content be specifically stored in a term database,” as opposed to, for example, “a data object associated with a term database (and therefore still database content).” PO Resp. 26 (citing Ex. 2002 ¶ 98); *see also* PO Sur-reply (arguing that the “identif[ied] content in claims 1, 11, and 20 is a specific subset of the total content of the term database” (alteration in original) (citing Ex. 2002 ¶¶ 105–106)); *see also* PO Sur-reply 11 (arguing that Dr. Madisetti’s opinion on the claim-differentiation issue is unrebutted).

We find Apple’s claim-differentiation arguments persuasive. We address claim differentiation as to claims 37, 41, and 45 above. *See supra* Section III.B.2. Apple has persuasively shown that the phrase *term database* does not convey a database that must necessarily include content “for display.” The ’985 patent disclosure supports this determination because it broadly discloses the types of permissible content that may be stored in the RichLink Term Database, without any indication that the content is necessarily “for display.”⁹ *See* Ex. 1001, 11:37–39, 13:65–67.

⁹ Sentius contends that “the presence in a term database of other content beyond display content does not mean that display content is not included,” and “even when the entered content is a link to be linked to a parsed term, there is nothing in the ’985 patent to suggest that it is not also displayed.” PO Resp. 28–29 (citing Ex. 2002 ¶¶ 103–104); *see also id.* at 58–59 (citing Ex. 1001, 12:61–13:7). We agree, and it does not appear to be disputed (*see* Tr. 16:16–24, 23:7–10), that a link to other content can itself be displayed. But we disagree that anything in the ’985 patent suggests that links or other content types associated with a term database must necessarily be “for display.”

We also agree with Apple that the explicit requirement in claims 38, 42, and 46 that “the identified content is stored in the term database” suggests to a person of ordinary skill in the art that respective independent claims 1, 11, and 20 do not include that requirement.¹⁰ *See Phillips*, 415 F.3d at 1315. We also find persuasive Apple’s argument that the ’985 patent specification only suggests storing the identified content in the term database as an option, not a requirement. *See* Pet. Reply 4 (citing Ex. 1001, 4:17–18 (“Content types . . . *may* be stored in [the RichLink Term] database.” (emphasis added))). Thus, we agree that a person of ordinary skill in the art would not have understood, from the ’985 patent’s description of the Richlink Term Database, that storing the identified content is part of the meaning of the phrase *term database*.

For the above reasons, we determine that the phrase *term database* has its ordinary and customary meaning in light of the ’985 patent specification, and that this meaning does not require that the database necessarily include the identified content, or that its identified content necessarily be for display.

4. “*database content*”

Sentius argues that the preambles of the challenged claims are limiting because the preambles “define[] that content recited in [the] claimed method or system is ‘database content.’” PO Resp. 23. According to Sentius, each

¹⁰ Unlike the other independent claims, claim 11 recites “a term database for storing the identified content.” Ex. 1001, 14:57. Thus, although claim 11 does not require identified content to actually be stored, it explicitly requires that the term database is “for storing” such content. That the applicants found it necessary to add “for storing the identified content” is further evidence that an ordinarily skilled artisan would not have understood the phrase *term database*, alone, to require storing the identified content.

claim refers to “identifying content” for various terms, and this “identified content is database content.” *Id.* at 21. Sentius argues that in the ’985 patent specification and its preferred embodiment, content associated with terms is stored in databases, which are necessary for the claimed invention to function. *Id.* (citing Ex. 2002 ¶¶ 85–86). Thus, according to Sentius, we should treat the preambles including the term *database content* as limiting. *Id.* at 22–23.

As to the meaning of *database content*, Sentius argues that it “probably needs no construction,” but Sentius offers that its plain and ordinary meaning is “content that is accepted into, stored by, and provided from the database.” *Id.* at 21.

Apple does not specifically contest Sentius’s proposed construction of *database content*, but argues that the preambles are not limiting. *See* Pet. Reply 1–2. Apple contends that, “contrary to [Sentius’s] assertions, the bodies of the claims do not rely on the recited ‘database content’ for antecedent basis—that phrase does *not* appear once in the body of the independent claims.” *Id.* at 2. According to Apple, “[t]he bodies of each of the claimed methods and systems define a complete invention that can be performed or made without reference to the preamble. And in each instance, the preamble simply states a purpose: ‘processing database content.’” *Id.* (citing Ex. 1001, cols. 14–16).

We agree with Apple that none of the challenged claims rely on the term *database content* for antecedent basis. Although the claims refer to “content” and “identified content,” these terms are introduced in the bodies of the independent claims without any apparent reference to an antecedent. *See* Ex. 1001, 14:16–17, 14:55, 15:26, 15:41, 16:28. Because the bodies of

the independent claims define a complete method or structure without reference to their respective preambles, we determine that a person of ordinary skill in the art would have understood that the preambles merely express the purpose of the claimed invention, and are not limiting.

Nevertheless, as we discuss below, we find that van Hoff discloses the preambles of the challenged claims. *See infra* Section III.C.3(a). Thus, our decision would be the same if we were to agree with Sentius that the preambles of the challenged claims are limiting.

C. OBVIOUSNESS GROUND BASED ON VAN HOFF AND RODKIN
(CLAIMS 1–23, 26–29, 31, 32, 35–46)

We now consider Apple’s grounds of the Petition. First, Apple contends that claims 1–23, 26–29, 31, 32, and 35–46 are unpatentable under § 103(a) as obvious over van Hoff in view of Rodkin. Pet. 4, 14–62.

A claim is unpatentable under § 103(a) for obviousness 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). When a ground in a petition is based on a combination of references, we consider “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We base our obviousness inquiry on factual considerations 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) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

Considering these factors,¹¹ we determine that Apple has shown, by a preponderance of the evidence, that each of the claims challenged under the first ground would have been obvious over the combination of van Hoff and Rodkin. We begin our analysis with a brief overview of van Hoff and Rodkin, and then we address the parties’ contentions with respect to the challenged claims.

1. Overview of van Hoff

Van Hoff describes a distributed, automated document annotation system that adds hypertext cross-references to documents “in such a way that the merged document is displayable by existing Web browsers.” Ex. 1004, code (57). An overview of this system is depicted in Figure 2, reproduced below:

¹¹ Neither party has submitted evidence of objective indicia of obviousness or non-obviousness, so our analysis does not consider any such indicia.

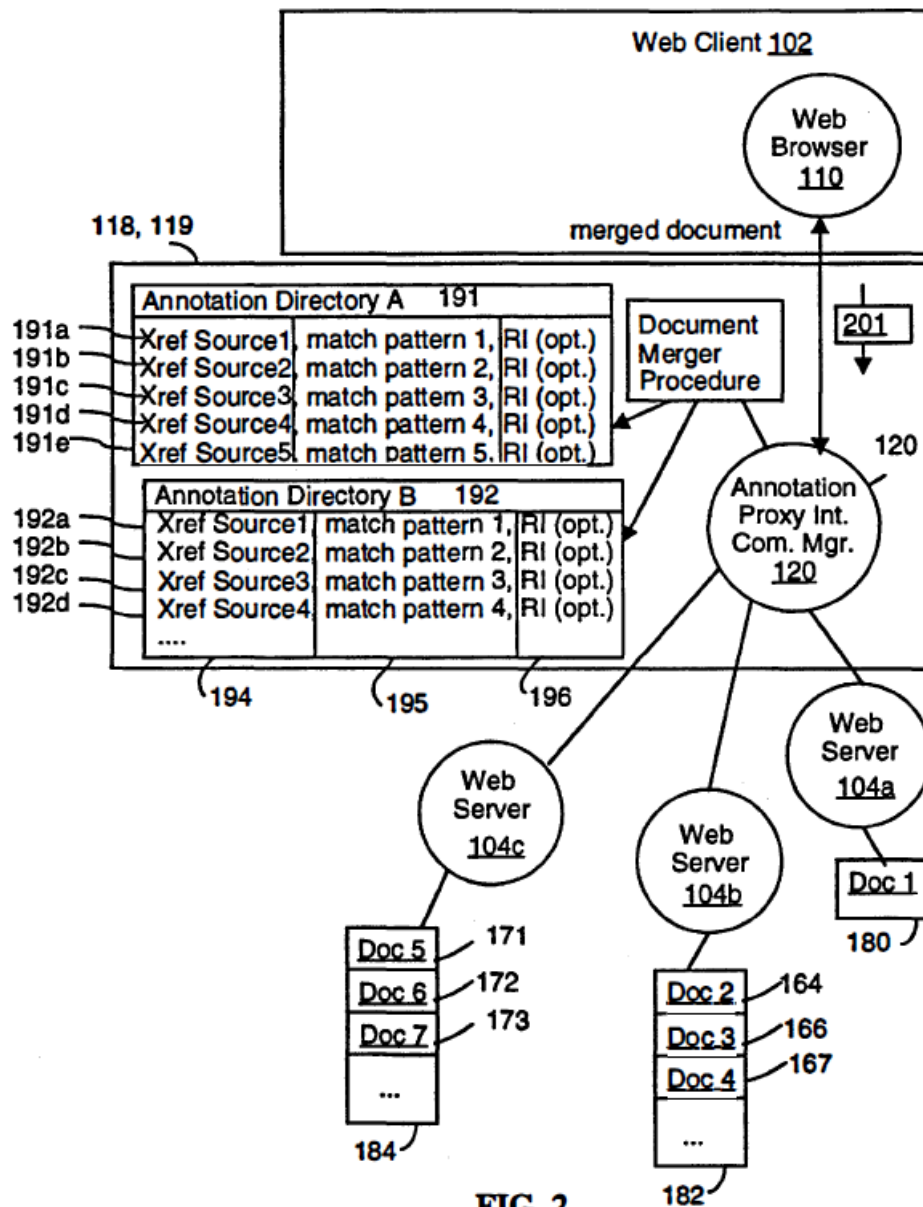


FIG. 2

Figure 2 is a block diagram showing the relationship between a web client (102), multiple web servers (104), and a plurality of annotation proxy servers (118, 119) between web client 102 and web servers 104. Ex. 1004, 3:49–52, 4:25–30, 4:57–62.

Web servers 104a–c store various documents to be annotated (164–167, 171–173). *See* Ex. 1004, 4:62–5:3. Each annotation proxy server 118 or 119 includes a plurality of paired entries 191a–e, 192a–d, which each

include cross-reference document source field 194 and match pattern field 195. *Id.* at 5:32–37. “Each cross-reference source field 194 identifies the unique location of a cross reference document, and each match pattern field 195 defines a character pattern.” *Id.* at 5:37–39. When a character pattern appears within a source document, “that indicates that an annotation linking the portion of the document associated with the matching pattern to the paired cross reference source should be added to the requested document.” *Id.* at 5:41–45.

Web client 102 includes web browser 110. *See* Ex. 1004, 4:9–14, Fig. 1. In operation, a user uses browser 110 to request a stored document (e.g., 166) from a web server (e.g., 104*b*), and also specifies an annotation proxy server (e.g., 118) and an annotation directory (e.g., 191). *Id.* at 5:56–61. In this example, web server 104*b* responds by providing document 166 to proxy server 118, which parses the document by comparing it with match patterns 195 found in annotation directory 191. *Id.* at 6:44–46, 7:2–5. Proxy server 118 then provides the merged document to client computer 102 for display in browser 110. *Id.* at 6:46–48.

Figure 1 is another view of van Hoff’s system, showing additional details of web client 102 and web server 104, as reproduced below:

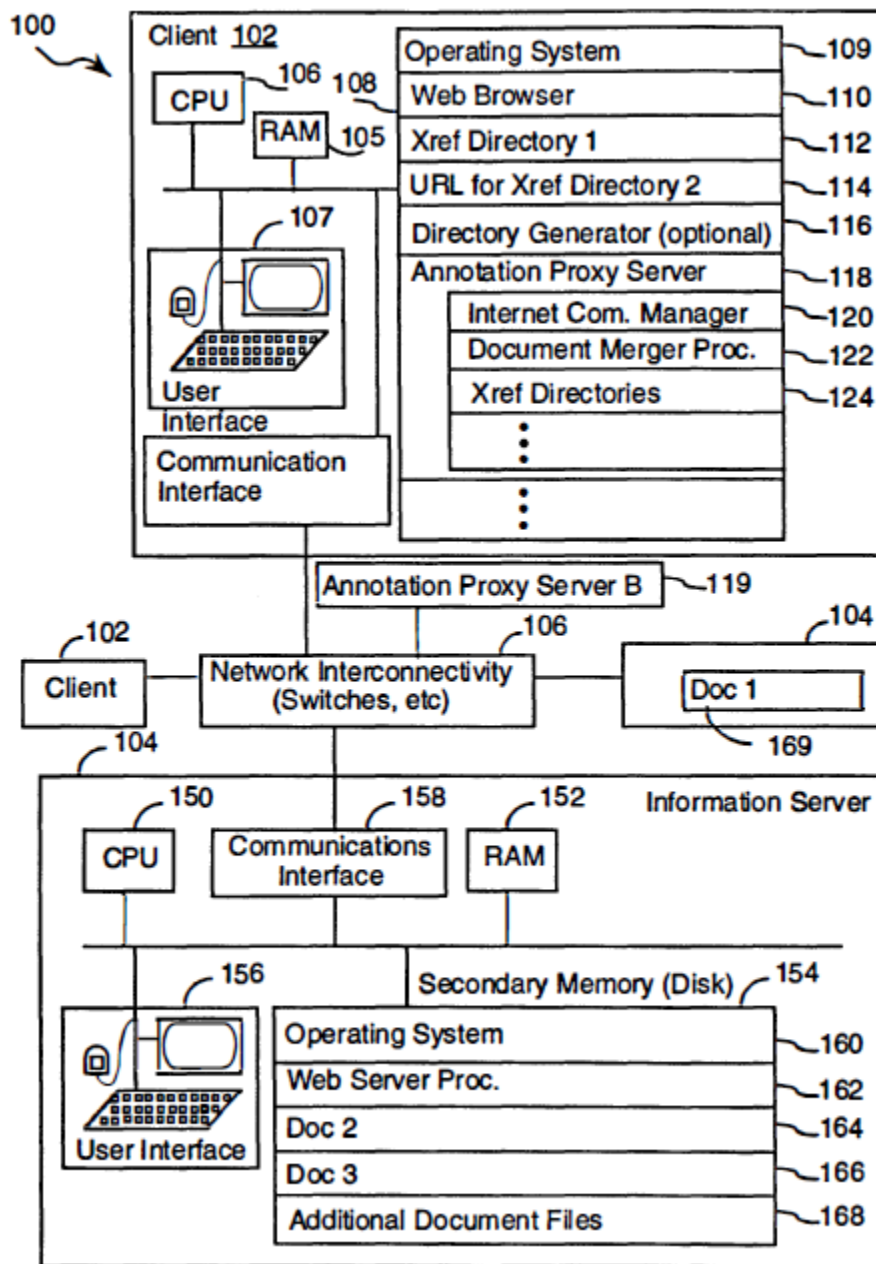


FIG. 1

Figure 1, above, depicts distributed computer system 100 having two client computers 102 and at least one remotely located information server computer 104. Ex. 1004, 3:66–4:1. In addition to web browser 110 and annotation proxy server 118 (as also shown in Figure 2), client computer 102 also includes two additional cross-reference directories: internal cross-

reference (“Xref”) directory 1 (112), and a URL pointing to cross-reference directory 2 (114) “located on a remotely located computer.” *Id.* at 4:9–18.

Remote cross-reference directories 114 can be prepared by “information service providers, educational institutions, publishers, good Samaritans, and the like.” Ex. 1004, 9:59–67. Local cross-reference directories 112 are prepared by the client and may be “user maintainable.” *Id.* at 10:1–8. In that case, the user may “instruct[] the directory generator 116 via the Web browser 110 to ‘add a reference to this particular document to my personal cross-reference directory’, or by editing the match pattern criteria if the user doesn’t like the default matching pattern provided in an existing annotation directory.” *Id.* at 10:11–16.

Cross-reference directories 112 can also be self-generating, and in that case, directory generator 116 analyzes documents statistically to identify and store links. Ex. 1004, 10:20–34. “The cross-reference dictionary 112, 191, 192 is built-up and improved over time as the number of documents read and contributing to the directory increases.” *Id.* at 10:34–36.

2. *Overview of Rodkin*

Rodkin describes “[a] system for automatically providing hypertext for character strings of a text file at a content server.” Ex. 1005, code (57). The system includes a central server that stores “a master annotation database which stores character strings which are associated with preferred destination addresses.” *Id.* at 11:55–57. The system also includes “a large network of content servers” which process online text articles to automatically associate hypertext with various character strings found in the article. *Id.* at 12:28–34, 13:33–35. When a content server annotates a

document file, it “scans the file to determine matching strings from the annotation database.” *Id.* at 14:66–15:1.

Under the control of this central server, the destination addresses in each content server are intermittently updated “to ensure that the destination addresses remain current.” Ex. 1005, 1:8–11, 13:35–39.

In one embodiment, the central server can “pre-assign a preferred destination address to a character string,” so that links associated with that string go to the web page of a fee-paying organization. Ex. 1005, 14:3–13.

3. *Claim 1*

(a) Claim 1 Preamble

The preamble of claim 1 recites “A computer implemented method for processing database content.” Ex. 1001, 14:8–9. Apple argues that, to the extent the preamble is limiting, van Hoff discloses such a method of using a database to annotate documents to add hypertext cross-references to content. Pet. 20 (citing Ex. 1004, code (57), 3:11–18; Ex. 1003 ¶¶ 36–37).

Sentius contends, for reasons outlined above, that the preamble is limiting and that van Hoff does not disclose “database content.” PO Resp. 20–23, 38; *see supra* Section III.B.4. For the reasons given above in the context of that discussion, we disagree with Sentius that the preamble is limiting.

Nevertheless, even if the preamble were limiting, Apple persuasively shows that van Hoff discloses the preamble, including “database content,” because it discloses a document annotation system that stores a directory of hypertext links to supplemental information as well as rules for merging with a document. *See* Pet. 20–21; Ex. 1004, code (57), 3:11–18. The ’985

patent, like van Hoff, uses the term “dictionary” to describe the contents of a database. *See, e.g.*, Ex. 1001, 4:13–17, Fig. 12. And as Apple notes in the Petition, van Hoff uses the terms “dictionary” and “directory” interchangeably. Pet. 16 (citing Ex. 1004, 4:19–21, 5:27–28, 10:34–36; Ex. 1003 ¶ 31).

Also, we determine below that van Hoff discloses a “term database” as recited in limitation 1(a), in the form of annotation directories 191 and 192 and cross-reference dictionaries 112 and 114. *See infra* Section III.C.3(b). Thus, even under Sentius’s proposed construction of *database content*, van Hoff discloses “content that is accepted into, stored by, and provided from the database.” PO Resp. 21.

(b) Limitation 1(a): “syndicating one or more data objects associated with a term database . . .”

Limitation 1(a) recites “syndicating one or more data objects associated with a term database to one or more remote computers, wherein the one or more data objects contain data associated with one or more terms.” Ex. 1001, 14:10–13.

First, Apple argues that the “one or more data objects associated with a term database” correspond to paired entries 191*a–e* and 192*a–d* within annotation directory 191 or 192 as shown in van Hoff’s Figure 2 (reproduced above). Pet. 21–23 (citing Ex. 1004, 5:32–37, 5:50–54, 7:12–17, Fig. 2; Ex. 1003 ¶¶ 38–40). Apple also argues that these data objects “contain data associated with one or more terms” because the “data” are Xref Sources 1–4 in cross-reference source field 194, and the “terms” are the “characters, words, phrases or the like found in a document” which are associated to each corresponding Xref Source listed in the directory based on

match patterns 195. Pet. 21, 23 (citing Ex. 1004, 5:37–40, 7:1–5, 7:17–23, Fig. 2).

Second, Apple argues that the recited “remote computers” each correspond to a “[c]omputer different from . . . both the client computer 102 and information server 104 that contains the proxy server 119.” Pet. 21 (citing Ex. 1004, 5:3–10, Fig. 1). According to Apple, van Hoff “teaches the proxy server is what contains annotation directories 191/192 and that proxy server 119 may be located remotely from both the client and information server computers (i.e., a remote computer),” and that the annotation directory “may originate from various entities external from the system.” Pet. 24 (citing Ex. 1004, 4:22–35, 5:3–10, 6:27–32, 9:59–64, Fig. 1).

Apple points to a subroutine in van Hoff’s system, called the “Install Cross-Reference Directory” procedure, that is responsible for retrieving and adding a directory to a set of dictionaries used by the annotation proxy server, and argues that a person of ordinary skill in the art would have understood that this subroutine “would result in transmission of an annotation directory located at a known URL to the proxy server.” Pet. 24–25 (citing Ex. 1004, 9:34–43, 9:59–64, 11:35–58; Ex. 1003 ¶¶ 45–49). According to Apple, this results in syndicating the data objects (paired entries 191*a–e* and 192*a–d*) to remote computers (e.g., remote proxy server 119). *See* Pet. 25.

Alternatively, to the extent that the Install Cross-Reference Directory subroutine is not “automatic” and the annotation directory is not sent to “subscribed computers,” as required by the uncontested interpretation of *syndicating* (*see supra* Section III.B.1), Apple argues that Rodkin teaches an automated “system for providing hypertext links for character strings in text

files utilizing a central server that intermittently updates remote content servers with character strings and/or destination addresses (i.e. URLs).” Pet. 25 (citing Ex. 1005, code (57), 1:6–14); *see also id.* at 25–26 (citing Ex. 1005, 4:7–10, 10:25–32, 11:18–30, 23:25–30, Fig. 4; Ex. 1003 ¶¶ 50–52).

According to Apple, a person of ordinary skill in the art would have incorporated Rodkin’s automated updates into van Hoff’s system to “accomplish *Rodkin*’s stated need of ‘ensur[ing] that the destination addresses remain current.’” Pet. 26–27 (alteration in original) (quoting Ex. 1005, 1:9–11) (citing Ex. 1005, 9:40–43; Ex. 1003 ¶¶ 53–55).

In response, Sentius first argues that “[v]an Hoff does not teach that the annotation directories are databases because it does not disclose expressly or inherently that the annotation directories *accept data on demand*, which is a requirement for a database per [the District Court’s] prior construction.” PO Resp. 39. According to Sentius, van Hoff’s “user maintainable directories” have to be recreated before the data they contain can be edited, and the resulting new dictionary has different contents. *See id.* (citing Ex. 2002 ¶ 131); *see also id.* at 43–44 (arguing that “a database is not synonymous with a dictionary because a dictionary does not necessarily accept data” (citing Ex. 2002 ¶¶ 140–144)); PO Sur-reply 15–16 (citing Ex. 2002 ¶¶ 131, 146).

Apple counters that its contentions regarding van Hoff’s “user maintainable directories” were in the context of claim 2, “which requires ‘a source’ to provide the content.” Pet. Reply 9 (citing Ex. 1003 ¶ 65). But even then, according to Apple, van Hoff expressly teaches that its user-maintainable directories 112 can allow the client to modify the dictionary,

either to “add a reference to a particular document” or to “edit the match pattern criteria.” *Id.* (emphasis omitted) (quoting Ex. 1004, 10:12–14).

We disagree with Sentius that a person of ordinary skill in the art would have understood that van Hoff’s “user maintainable” embodiment of cross-reference directory 112 would have to recreate the directory and thus would be unable to provide data to a user “on demand.” The only portion of van Hoff that Sentius and Dr. Madisetti point to for this is column 10, lines 6–16. *See* PO Resp. 39 (citing Ex. 1004, 10:6–16); Ex. 2002 ¶¶ 130–131, 146 (citing Ex. 1004, 10:6–16). But we find nothing in this passage implying what Sentius infers. Rather, we agree with Apple that in the “user maintainable” embodiment, dictionary generator 116 directly modifies dictionary 112 at the user’s instruction. *See* Pet. Reply 9; Ex. 1004, 10:10–11. Moreover, Sentius does not directly address the other embodiments of dictionary 112 and annotation directories 191 and 192, such as where dictionary 112 is provided by a third party, or where dictionary 112 is built up automatically over time by dictionary generator 116. *See* Pet. 21–25; Pet. Reply 8–9; Ex. 1003 ¶¶ 38–49, 65; Ex. 1004, 9:59–10:39. Considering the record as a whole, the evidence supports Apple’s arguments that van Hoff teaches a term database that provides data to a user on demand.

Next, Sentius argues that van Hoff fails to teach a system that syndicates “data objects” because van Hoff’s annotation database is missing a “paired entity structure that is apart from the structure of the annotation directory itself,” and van Hoff only syndicates the entire directory, not distinct entities within the directories. *See* PO Resp. 39–40 (citing Ex. 2002 ¶ 132); *see also* PO Sur-reply 16 (citing Ex. 2002 ¶ 157). Moreover, according to Sentius, Rodkin fails to remedy this deficiency because it “does

not syndicate database content via data objects,” but simply synchronizes a master database with local copies of the database, and combining van Hoff with Rodkin would have been unmotivated and beyond the level of ordinary skill in the art. *See id.* at 40–42; *see also* PO Sur-reply 16–17.

Apple counters that Sentius misunderstands its argument, which is that annotation directories 191 and 192 are the recited “term database” and paired entities 191*a–e* and 192*a–d* are the associated “data objects.” *See* Pet. Reply 10 (citing Pet. 21). Apple also argues that it is relying on van Hoff, not Rodkin, for teaching limitation 1(a), except for the “automatic” aspect of the uncontested construction for the term *syndicating*, which Sentius did not address.¹² Pet. Reply 10–11; *supra* Section III.B.1.

We find Apple’s arguments persuasive. Limitation 1(a) merely recites “syndicating one or more data objects associated with a term database,” and does not limit the number of data objects within a given term database that can be syndicated. Thus, there is nothing in the claim to exclude a method that involves syndicating the entire term database, including every data object within it. This is also consistent with the parties’ uncontested construction of *data objects associated with a term database*, which is “computer readable data structures that include data from [a term] database.” Ex. 1008, 30.

We also find persuasive Apple’s argument combining van Hoff and Rodkin which relies on van Hoff for the syndication method (including

¹² Sentius does mention this issue in its Sur-reply, but reiterates its argument in the Response and makes no argument specifically addressing why an ordinarily skilled artisan would not have used van Hoff’s syndication method, as modified in the more limited way as Apple has clarified. *See* PO Sur-reply 16–17.

installing a remote term database using the Install Cross-Reference Directory subroutine) but relying on Rodkin for making van Hoff’s syndication method “automatic” on a periodic basis. *See* Pet. 25–27. Although there are differences between the systems of van Hoff and Rodkin, we are persuaded that the modification to van Hoff that Apple proposes would have been within the level of ordinary skill in the art. *See* Pet. 27 (citing Ex. 1003 ¶¶ 54–55) (“[T]he modification requires only simple programming techniques well within a [person of ordinary skill in the art]’s expertise.”)¹³ We also find persuasive Apple’s arguments that a person of ordinary skilled in the art would have been motivated to modify van Hoff in this way to ensure that links remain current. *See* Pet. 26–27.

For the above reasons, we find Apple’s arguments persuasive that a person of ordinary skill in the art would have had reason and the ability to combine van Hoff with Rodkin, and that the resulting combination teaches limitation 1(a).

(c) Limitation 1(b): “parsing one or more documents to identify at least one term based on at least one rule”

Limitation 1(b) recites “parsing one or more documents to identify at least one term based on at least one rule.” Ex. 1001, 14:14–15. Apple argues that van Hoff discloses this limitation by teaching that “after receiving the requested document from the information server, the ‘proxy server *parses the requested document* and compares the characters, words, phrases, and

¹³ We note that, at least in the “self-generating” embodiment of cross-reference directory 112, van Hoff already teaches how to update and improve a directory automatically over time. *See* Ex. 1004, 10:20–39.

the like with match patterns 195 in the selected annotation directory.” Pet. 27–28 (quoting Ex. 1004, 7:1–5) (citing Ex. 1004, 6:54–57, 7:1–5). Apple also argues that this parsing operates to identify terms based on a set of rules comprising match patterns 195. Pet. 28 (citing Ex. 1004, 5:37–40, 7:24–41, Figs. 2, 3; Ex. 1003 ¶¶ 57–60).

Sentius does not dispute that van Hoff teaches limitation 1(b). PO Resp. 42. We find Apple’s arguments persuasive, and find that van Hoff discloses limitation 1(b).

(d) Limitations 1(c): “identifying content for the at least one term”

Limitation 1(c) recites “identifying content for the at least one term.” Ex. 1001, 14:16. Apple argues that in van Hoff, this limitation corresponds to using the paired entries in annotation directory 191 or 192 to match particular terms found in a source document with corresponding URL links 194. Pet. 29–30 (citing Ex. 1004, 5:32–40, 7:34–41, Figs. 2, 3; Ex. 1003 ¶ 61).

Sentius argues that van Hoff “does not disclose this step because the URLs [that] van Hoff identifies are inserted as metadata (hyperlinks) into the document’s HTML code. They are not identified for display and Apple makes no argument that they are displayed” as dependent claim 37 further requires. PO Resp. 43 & n.3. Specifically, Sentius contends that “[i]n van Hoff, the proxy server acts as an intermediary between the browser requesting a webpage and the responding server,” and “[t]he proxy server inserts the . . . hyperlink into the webpage and sends it to the browser which renders the webpage. The text of the URL ‘URLX1’ is not displayed in the rendered webpage.” *Id.* at 43.

As we discuss above, we disagree with Sentius that the term *identifying content* and other “content” terms in the challenged claims are limited to content “for display.” *See supra* Section III.B.2. We find persuasive Apple’s argument that van Hoff discloses identifying content for the identified terms, which is reflected in the entries of annotation directories 191 and 192. Thus, Apple has persuasively shown that van Hoff discloses limitation 1(c).

(e) Limitation 1(d): “associating the at least one term with the identified content”

Limitation 1(d) recites “associating the at least one term with the identified content.” Ex. 1001, 14:17. Apple argues that van Hoff discloses this limitation because it teaches “associating a term within a document with the identified cross-link references (i.e., content) by having the proxy server insert a hyperlink annotation into the document in association with the term.” Pet. 30–31 (citing Ex. 1004, 7:29–32, 7:34–41, 7:66–8:3, Fig. 4; Ex. 1003 ¶ 62). Apple regards both the URL and the “cross-reference document” to which the URL links, equivalently, as the “identified content.” *See* Pet. 30 (“the identified cross-link references (i.e., content)”); *id.* at 31 (“a cross reference document (i.e., identified content)”; Pet. Reply 14.

In response, Sentius argues, for the reasons we discuss above in the context of limitation 1(c), that “the hypertext added by the van Hoff system prior to the browser rendering the requested document is not displayed in the browser-rendered webpage.” Thus, Sentius contends that the identified content is not “for display.” *Id.*

As we discuss above, we determine that the term *identified content* has its ordinary and customary meaning, and this meaning does not require

the content to be “for display.” *See supra* Sections III.B.2 and III.C.3(d). Based on this interpretation, we find Apple’s arguments persuasive that van Hoff discloses limitation 1(d) because the system inserts term-related hyperlink annotations into the document being processed.

(f) Limitation 1(e)

Limitation 1(e) recites “wherein the one or more data objects associated with the term database provide a representation of at least a portion of the term database at the one or more remote computers and are used to link the identified content with the at least one term.” Ex. 1001, 14:18–22.

Apple argues that van Hoff discloses this limitation because van Hoff’s “proxy server 119 (i.e., remote computer) contains an annotation directory (i.e., term database) which is further comprised of paired entries (i.e., data objects).” Pet. 31. According to Apple, a person of ordinary skill in the art “would have understood paired entries provide a representation of at least a portion of the annotation directory because *Van Hoff* teaches the annotation directory is comprised of the paired entries.” *Id.* (citing Ex. 1003 ¶ 63).

Apple also argues that in van Hoff, “one of the fields contained in the paired entries is field 194 which contains the location of a cross-reference document (i.e., URL),” and “[w]hen a term from a requested document is identified via match pattern field 195, the corresponding cross-reference source field 194 is added to the document as a hyperlink.” Pet. 31–32 (citing Ex. 1004, 5:32–40, 7:24–41; Ex. 1003 ¶ 63). Thus, according to Apple, a person of ordinary skill in the art “would have understood [that the] cross-

reference source field is used to link the identified content with a term.” Pet. 32 (citing Ex. 1003 ¶ 64).

In response, Sentius argues, for essentially the same reasons we address above, that Apple has not shown that van Hoff’s annotation directories are “databases,” or that identified content is or should be displayed. PO Resp. 45.

As discussed above, we disagree with Sentius on these points. *See supra* Sections III.B.2, III.C.3(b). We find that Apple has persuasively shown that van Hoff discloses limitation 1(e), and in particular that a person of ordinary skill in the art would have understood that van Hoff’s proxy server 119 corresponds to the recited “remote computer” and paired entries 191a–e and 192a–d correspond to the recited “data objects.”

(g) Conclusion for claim 1

For the above reasons, Apple has shown, by a preponderance of the evidence of record, that claim 1 of the ’985 patent would have been obvious over van Hoff as modified by Rodkin. We therefore conclude that claim 1 is unpatentable under 35 U.S.C. § 103(a).

4. *Independent Claims 11 and 20*

Independent claim 11 is similar to claim 1, except that it is directed to “[a] computer implemented system for processing database content.” Ex. 1001, 14:51–52. The claim includes the following: a module for carrying out “parsing” analogous to limitation 1(b); “a processing module for identifying content for the at least one term” analogous to limitation 1(c); a “term database for storing the identified content in association with the at least one term” analogous to limitation 1(d); and a “wherein” clause that

requires syndicating data objects to a remote computer for providing a remote representation of at least a portion of the term database, analogous to limitations 1(a) and 1(e). *Compare id.* at 14:53–65, *with id.* at 14:10–22. Apple’s arguments for claim 11 are essentially the same as its arguments for claim 1. *See* Pet. 42–45.

Likewise, Sentius’s arguments are essentially the same as its arguments for claim 1, except Sentius notes that the parties agree that the phrase *a processing module for identifying content for the at least one term*, is a means-plus-function limitation where the function is “identifying content for the at least one term” and the corresponding structure is “a computer processor in conjunction with executable code for instructing the computer processor to identify content for the at least one term, and equivalents thereof.” PO Resp. 55 (quoting Ex. 1007, 2); *see supra* Section III.B.1. Sentius contends that “[v]an Hoff does not show a processing module that is used to identify database content for display, and therefore does not meet claim [11].” PO Resp. 55.

As we discuss above, we do not agree with Sentius that the term *identify content*, whether in claim 1 or claim 11, requires that the content be “for display.” And we find Apple’s arguments for claim 11 persuasive for the reasons discussed above in the context of claim 1. *See supra* Section III.C.3.

Independent claim 20, like claim 11, is directed to [a] computer implemented system for processing database content.” Ex. 1001, 15:22–23. The claim comprises three means-plus-function limitations in which the function is essentially the method steps of limitations 1(b), 1(c), and 1(d), and a “wherein” clause that is substantially the same as the “wherein” clause of claim 11. *Compare id.* at 15:24–34, *with id.* at 14:14–17, *and id.* at 14:59–

65. Apple’s arguments for claim 20 are essentially the same as its arguments for claim 1. *See* Pet. 46–49.

Sentius contends that the recited “means for identifying content . . . is properly construed with substantially the same construction as was given for the term ‘processing module’ in claim 11.” PO Resp. 57. And, like for claim 11, Sentius contends that van Hoff does not disclose the “means for identifying content” because the van Hoff’s alleged “content” is not “for display.” *See* PO Resp. 56–57.

Again, we do not agree with Sentius that the term *identifying content*, or similar terms in claim 1 or 11, requires that the content be “for display.” Thus, we find Apple’s arguments for claim 20 persuasive for the reasons discussed above in the context of claim 1. *See supra* Section III.C.3.

For the above reasons, we determine that Apple has shown, by a preponderance of the evidence, that claims 11 and 20 would have been obvious over van Hoff in view of Rodkin.

5. *Independent Claims 21 and 36 and Dependent Claims 37, 41, and 45*

Independent claim 21 is a method claim substantially the same as claim 1, except that it adds the following “wherein” limitation: “wherein the linked content is displayed on a user interface based upon a user interaction with at least a portion of the one or more source documents.” Ex. 1001, 15:50–52; *compare id.* at 15:35–49, *with id.* at 14:8–22. Similarly, independent claim 36 is a system claim substantially the same as claim 11, except that it also adds the same “wherein” limitation reproduced above. *See id.* at 16:38–40; *compare id.* at 16:23–37, *with id.* at 14:51–65. A similar “wherein” limitation also appears in claim 37 (which depends from claim 1),

claim 41 (which depends from claim 11), and claim 45 (which depends from claim 20). *See id.* at 16:50–52, 16:60–62.

Apple’s arguments for claims 21 and 36 are essentially the same as its arguments for claims 1 and 11, respectively, except as to the added “wherein” clause. *See* Pet. 49–53, 58–59. For that clause, and for claims 37, 41, and 45, Apple argues that a person of ordinary skill in the art “would have understood [that] the historical purpose of inserting hyperlinks into a document was to provide the reader with a link to another source of information pertaining to the topic of said hyperlink,” and that when interacting with a hyperlink, “the user would be requesting to be directed to the data the hyperlink pointed to, to view said data.” Pet. 51–52 (claim 21), 59 (claims 36 and 37), 61 (claim 41), 62 (claim 45). Thus, according to Apple, “interacting with a hyperlink would necessarily cause the displaying of the associated data for viewing.” Pet. 52 (citing Ex. 1003 ¶ 88).

Apple acknowledges that van Hoff does not expressly disclose that the linked content is displayed on a user interface based on interacting with a portion of the source document, but Apple argues that Rodkin teaches this. Pet. 52. According to Apple, Rodkin teaches that “when a user clicks on or otherwise selects the hypertext link in the on-line article, the user’s browser communicates with a third-party server which then delivers the relevant designated webpage to the user’s browser in the form of a designated Web page.” Pet. 52–53 (citing Ex. 1005, 1:27–30, 13:3–12, 15:56–60, 16:22–24; Ex. 1003 ¶¶ 88–90). Thus, Apple contends that a person of ordinary skill in the art “would have been motivated to apply the technique of *Rodkin* for delivering the relevant destination webpage to the browser of *Van Hoff* for display upon the user clicking the hypertext link to yield the predictable

result of displaying on a user's interface the linked content.” Pet. 53. And, according to Apple, “[t]his application would have yielded the predictable result of displaying the related content in the user's browser when the user clicks the hyperlink.” *Id.* (citing Ex. 1003 ¶ 90).

Sentius argues that, according to Apple's argument, “it is the resource pointed to by the URL that is displayed in response to the user input, not the text of the URL itself.” PO Resp. 58–59. Sentius contends that this is different than in the '985 patent, where, “even if the display content is the text of a link, that link text is displayed in the content window.” *Id.* at 59 (citing Ex. 1001, 12:61–13:7 (disclosing that when viewing a document, “[l]inks are present within both panes of [a content window], and the user may navigate the links as with a mini-browser”)).

We agree with Sentius that the '985 patent discloses that navigable links, themselves, are displayable in a content window. *See* Tr. 16:16–24, 23:7–10 (counsel for Apple agreeing that links are displayed when they appear in an HTML document). But we disagree with Sentius's interpretation that Apple only maps “the resource pointed to by the URL” to the content displayed based on a user interaction. As Apple clarified in its Reply, Apple's argument is that the URL hyperlink and what the hyperlink points to are, equivalently, the identified or “linked content.” *See* Pet. 30–31; Pet. Reply 14 (“[T]he ‘content’ as claimed in Claim 1 is broad enough to include both the URL stored in Van Hoff's annotation directory . . . *and* the document linked via the hypertext link annotation”). We find that argument persuasive and consistent with how claims 21 and 36 refer to the content as “linked content,” while the '985 patent also regards “links” to

content as, itself, a category of identified or linked “content.” *See* Ex. 1001, 11:37–39, 13:65–67, 15:50–52, 16:38–40.

For the above reasons, we determine that Apple has shown, by a preponderance of the evidence, that claims 21, 36, 37, 41, and 45 would have been obvious over van Hoff in view of Rodkin.

6. *Claims 2, 3, 12, and 13*

Claim 2 depends from claim 1 and recites “wherein the content is provided by a source.” Ex. 1001, 14:23–24. Claim 12 depends from claim 11 and adds essentially the same limitation. *See id.* at 14:66–67. Apple argues that van Hoff teaches several embodiments in which the content (i.e., the cross-linked references) are provided by a source, such as a directory generator, “various entities,” or a “user maintainable directory.” Pet. 32–33, 45 (citing Ex. 1004, 7:39–42, 9:59–67, 10:6–16, 10:20–36; Ex. 1003 ¶ 65).

Claim 3 depends from claim 2 and recites “wherein the source comprises at least one expert who provides the content for the at least one term through an interface.” Ex. 1001, 14:25–27. Claim 13 depends from claim 12 and adds essentially the same limitation as claim 3. *Id.* at 15:1–3. Apple argues that van Hoff teaches, in particular, that the source of the content may include “information service providers, educational institutions, or workgroups associated with the client” Pet. 33, 45 (citing Ex. 1004, 9:59–60; Ex. 1003 ¶ 66). According to Apple, a person of ordinary skill in the art “would have understood the at least one entity provides this content via an interface, e.g., browser.” *Id.* (citing Ex. 1003 ¶ 66).

In its response for these claims, Sentius argues that van Hoff only discloses storing URL links in its directories and not “display content” or “content to display”; that van Hoff’s directories are not “databases” because

they must be regenerated before they can be edited; and that a person of ordinary skill in the art would not have been motivated to add Rodkin's synchronization scheme to van Hoff's system. PO Resp. 45–47 (citing Ex. 2002 ¶¶ 65–66, 146–149).

We address Sentius's arguments above, and we disagree. *See supra* Sections III.B.2, III.C.3(b). We also find Apple's arguments persuasive because van Hoff clearly discloses that cross-reference directories may be provided by a variety of sources. *See, e.g.*, Ex. 1003, 9:59–67. Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 2, 3, 12, and 13 would have been obvious over van Hoff in view of Rodkin.

7. *Claims 4, 14, and 23*

Claim 4 depends from claim 1 and recites a further step of “providing a sponsorship opportunity to at least one entity to sponsor the at least one term, wherein a content window is associated with the at least one term.” Ex. 1001, 14:28–31. Claim 14 depends from claim 11 and further recites a substantially similar limitation. *See id.* at 14:4–7. Claim 23 depends from claim 21 and further recites “wherein the supplemental content is displayed in a content window.” *Id.* at 15:54–55.

Apple acknowledges that van Hoff “does not explicitly disclose providing a sponsorship opportunity,” but argues that Rodkin provides this teaching by disclosing “assigning destination addresses a preferred status upon payment of a fee.” Pet. 34–35 (citing Ex. 1005, 1:34–36, 13:3–12, 13:65–14:2, 14:10–20, 17:51–55, 23:42–46; Ex. 1003 ¶¶ 67–70). According to Apple, a person of ordinary skill in the art “would understand the sponsorship opportunities of *Rodkin* could easily be offered with *Van Hoff*'s

system,” and “would have been motivated to allow sponsorship opportunities . . . to provide greater customization and advance the commercial purposes of the Web.” Pet. 35–36 (citing Ex. 1005, 1:56–66, 2:46–50; Ex. 1003 ¶ 70).

In response, Sentius “does not dispute that Rodkin allows the sponsorship of a term,” but argues that “Rodkin does not disclose a content window that is associated with the at least one term” because “[i]n the ’985 patent, a content window is a system generated window,” unlike in van Hoff and Rodkin, where according to Apple, content appears in a display browser. PO Resp. 48 (citing Ex. 2002 ¶¶ 150–152). Sentius also argues that the term *content window* in claim 4 is narrower than the term *user interface* that appears in claims 21, 36, 37, 41, and 46. *Id.* (citing Ex. 1001, claims 23–25).

Apple counters that the ’985 patent expressly discloses that content appearing in a “RichLink Content Window may be returned in multiple formats” including HTML or transformed XML, and can be sent to “the browser or to an application, an embedded pop-up window, or using technologies such as Flash to build a display environment.” Pet. Reply 12–13 (quoting Ex. 1001, 12:16–20). Thus, Apple argues that a person of ordinary skill in the art would have understood that a browser window meets the ’985 patent’s description of a “content window.” *See id.* at 13 (citing Ex. 1003 ¶¶ 68–69; Ex. 1005, 1:18–22, 13:3–12). As to Sentius’s claim-differentiation argument distinguishing *content window* from *user interface*, Apple argues that Sentius has not explained why a common browser would not fall within the scope of either term. *See id.* at 12.

In its Sur-reply, Sentius contends that the ’985 patent’s description of the RichLink Content Window “only highlights that the content window is

something created by the system (in a format that the browser can render onto a screen) and is not the browser window.” PO Sur-reply 18 (citing Ex. 2002 ¶ 152).

Based on the evidence of record, we disagree that the recited “content window” cannot be a browser window. As Apple persuasively argues, the ’985 patent contemplates that the returned content could be displayed in either a “browser” or a custom, system-created window as Sentius contemplates (e.g., “an application, an embedded pop-up window,” or a display environment based on technologies such as Flash). Ex. 1001, 12:16–20. We do agree with Sentius that the term *content window* is narrower than the term *user interface*. See Ex. 1001, 15:54–55 (narrowing claim 21’s requirement of displaying linked content in a “user interface” by specifying that “the supplemental information is displayed in a content window”). But we find persuasive Apple’s argument that a browser window would fall within the scope of either term. See Pet. Reply 12. In other words, a browser would still be a “content window” even though the browser is part of a broader “user interface” that also includes other applications.

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 4, 14, and 23 would have been obvious over van Hoff in view of Rodkin.

8. *Claims 5, 15, 39, and 43*

Claim 5 depends from claim 1 and recites “wherein the content comprises one or more definitions, related products, related services, sponsorship information, translation, and reference works.” Ex. 1001, 14:32–34. Claim 15 depends from claim 11 and recites essentially the same limitation. See *id.* at 15:8–10. Claim 39 depends from claim 2 and recites

“wherein the source [of the identified content] comprises one or more of a dictionary, customer created data, advertising content and reference work.” *Id.* at 16:46–48. Claim 43 depends from claim 12 and further recites essentially the same limitation as claim 39. *See id.* at 16:55–57.

Apple contends that van Hoff discloses these limitations because the documents linked via the hypertext link annotations “contain supplemental information related to the topic of the received document by way of the linked term.” Pet. 36 (quoting Ex. 1004, 7:66–8:3). According to Apple, a person of ordinary skill in the art “would have understood a document containing supplemental information related to a topic is considered a reference work” or, alternatively, the content could be the sponsorship information taught by Rodkin, as in claim 4. *Id.* (citing Ex. 1004, 7:66–8:3; Ex. 1003 ¶ 71); *id.* at 45 (claim 15), 59 (claim 39), 62 (claim 43).

In response, Sentius argues that “the URLs identified by van Hoff (or Rodkin) are not these content types.” PO Resp. 49 (citing Ex. 2002 ¶¶ 153–154).

Apple counters that “the ‘content’ as claimed in Claim 1 is broad enough to include both the URL stored in Van Hoff’s annotation directory (as Petitioner identified in its mapping for Claim 1) *and* the document linked via the hypertext link annotation (as Petitioner identified in its mapping for Claim 5).” Pet. Reply 14.

In its Sur-reply, Sentius argues that Apple’s argument depends on van Hoff storing URL links in its directories, but “the categories of content claimed in claim 5 do not include links.” PO Sur-reply 19–20; *see also id.* at 21–22 (specifically arguing for claim 39). Sentius also argues, on claim-differentiation principles, that the specific content categories recited in

claims 5, 15, 39, and 43 must be narrower than the “identified content” in claim 1. *See id.* at 20.

We agree with Sentius that the content categories in claims 5, 15, 39, and 43 are narrower than the “content” recited in the independent claims. But Apple persuasively argues that a person of ordinary skill in the art, upon reading the ’985 patent, would have understood that *either* a link or the target of the link can be considered the identified or linked content. *See* Pet. Reply 14. For example, a link to a reference work, and the reference work itself, would equivalently have been considered the “identified content” within the scope of claim 5.

Thus, on the full trial record including Apple’s arguments in its Reply and Sentius’s arguments in the Sur-reply, we determine that Apple has shown, by a preponderance of the evidence, that claims 5, 15, 39, and 43 would have been obvious over van Hoff in view of Rodkin.

9. *Claims 6 and 16*

Claim 6 depends from claim 1 and recites “wherein the one or more remote computers access data associated with the term database for linking to the supplemental content,^[14] without a connection to the term database.” Ex. 1001, 14:35–38. Claim 16 depends from claim 11 and adds essentially the same limitation. *See id.* at 15:11–14.

¹⁴ Although there does not appear to be an antecedent basis for “the supplemental content,” Apple reasonably interprets this as referring to the “content” recited in claim 1. *See* Pet. 37. We similarly interpret the appearance of “the supplemental content” in claims 22, 23, and 29. *See* Ex. 1001, 15:53, 55, 16:4.

Apple contends that, according to van Hoff, “the annotation directory (i.e., term database) may originate from various entities external from the system,” and the proxy server (the remote computer) may install such a directory, located at a known URL, by invoking an “install Cross-Reference Directory subprocedure.” Pet. 37 (citing Ex. 1004, 9:34–43). According to Apple, van Hoff meets the limitation of claim 6 because “the proxy server utilizes the dictionary stored locally within the proxy server containing a cross-reference source field (i.e., data associated with the term database for linking to the supplemental content),” and uses this locally stored data to “provid[e] links to related content for terms found in a requested document.” Pet. 37 (citing Ex. 1003 ¶¶ 73–75), 45–46 (claim 16).

In response, Sentius argues that in the ’985 patent, “system internal references are used to link and identify the display content contained in the term database or a data object for the given term,” and Dr. Terveen’s explanation of how he believes van Hoff meets the limitation of claim 6 is not consistent with this. *See* PO Resp. 50 (citing Ex. 1001, 9:19–29). Sentius also argues that “Dr. Terveen conflates a database with a data object,” and in the ’985 patent, unlike in van Hoff, “syndicated data objects . . . are a read data structure for high speed access to metadata needed to identify the display content, and may also include the display content itself so that it need not be retrieved from the term database.” *Id.* at 50–51. Sentius also alleges that claim 6 requires “that the linking engine would have to be connected to a system database if it could not access the database content for identification and display in a data object,” which van Hoff does not disclose. *Id.* at 51 (citing Ex. 2002 ¶¶ 155–158).

In its Reply, Apple argues that Sentius does not clearly explain why its criticism of Dr. Terveen's testimony impacts Apple's arguments in the Petition. *See* Pet. Reply 16. And Apple argues that none of the requirements that Sentius derives from the '985 patent disclosure are recited in claim 6. *See id.*

We agree with Apple that Sentius's arguments ascribe requirements to claims 6 and 16 that are neither explicitly found within the claim language nor required by the '985 patent disclosure. We find Apple's arguments persuasive that van Hoff's remote computer accesses a local version of an annotation directory and therefore accesses links to supplemental content without being connected to the term database. That van Hoff does not accomplish this disconnected access the same way as embodiments of the '985 patent has no bearing on our application of the plain language of claim 6 to van Hoff's disclosure, and Sentius has not pointed to any evidence suggesting that the language in claim 6 has anything other than its ordinary and customary meaning.

In its Sur-reply, Sentius also argues that van Hoff's annotation directories are not "databases," and "Apple therefore cannot argue Van Hoff can function without access to the 'database' (*i.e.*, the annotation directories in which the URLs are contained)." *See* PO Sur-reply 21. As we discuss above, we disagree that van Hoff's directories are not "databases" as that term appears in the claims. *See supra* Section III.C.3(b).

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 6 and 16 would have been obvious over van Hoff in view of Rodkin.

10. *Claims 7, 8, 10, 17, and 18*

Claim 7 depends from claim 1 and recites “wherein the one or more data objects comprise a template object for identifying at least one rule for processing the source page.” Ex. 1001, 14:39–41. Claim 17 depends from claim 11 and further recites essentially the same limitation as claim 7. *See id.* at 15:14–16. Apple contends that van Hoff discloses this limitation because a requesting user can define rules for parsing and linking a file. Pet. 37–39 (citing Ex. 1004, 6:65–7:1, 9:36–51, 8:9–26; Ex. 1003 ¶¶ 77–78), 46 (claim 17).

Claim 8 depends from claim 1 and recites “wherein the one or more data objects comprise a lexicon object for identifying at least one term for tagging in a source page.” Ex. 1001, 14:42–44. Claim 18 depends from claim 11 and further recites essentially the same limitation as claim 8. *See id.* at 15:17–19. Apple contends that van Hoff discloses this limitation because “the proxy server contains a cross-reference directory that may be downloaded from an external URL (i.e., a local representation of the content of the term database).” Pet. 39 (citing Ex. 1004, 5:32–45). According to Apple, a person of ordinary skill in the art would have understood this cross-reference directory to be a “lexicon object” because it “contain[s] match pattern field 195 defining a character pattern, which if found in a requested document, results in associated cross-reference source field 194 being added to said document.” *Id.* at 39 (citing Ex. 1003 ¶¶ 79–80), 46 (claim 18).

Claim 10 depends from claim 1, reciting “[a] computer program of instructions configured to be readable by at least one programmed computer processor to execute a computer process for performing the method as recited in claim 1.” Ex. 1001, 14:47–50. Apple argues that the combination

of van Hoff and Rodkin teaches every limitation of claim 10 for the same reasons the combination teaches every limitation of claim 1, and because the method takes place on a computer as part of a computer program. Pet. 41–42 (citing Ex. 1004, 3:11–18, 4:22–26, 5:3–10; Ex. 1003 ¶¶ 82–83).

Sentius states that it does not dispute that van Hoff teaches the added limitations of the above claims, but relies on its arguments addressed above for claim 1. PO Resp. 51–53. However, as we discuss above, we disagree with those arguments. *See supra* Section III.C.3.

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 7, 8, 10, 17, and 18 would have been obvious over van Hoff in view of Rodkin.

11. Claims 9 and 19

Claim 9 depends from claim 1 and recites “wherein the one or more data objects are synchronized with at least the term database.” Ex. 1001, 14:45–46. Claim 19 depends from claim 11 and recites essentially the same limitation. *See id.* at 15:20–21.

Apple relies on Rodkin, arguing that Rodkin teaches that “the central server periodically updates each content server with particular character strings and destination addresses.” Pet. 40 (citing Ex. 1005, 11:20–30, 12:28–31). And in particular, “during the central server’s maintenance mode, annotation database 535 and destination and expiration database 540 will receive and store character strings and updated destination addresses.” *Id.* (citing Ex. 1005, 14:21–25, 17:56–18:2; Ex. 1003 ¶ 81). According to Apple, a person of ordinary skill in the art would have modified van Hoff to incorporate Rodkin’s “maintenance mode” to “accomplish Rodkin’s need for ‘updat[ing] the content servers with any new character strings or new or

updated destination addresses.” Pet. 40–41 (alteration in original) (quoting Ex. 1005, 11:31–33) (citing Ex. 1003 ¶¶ 53–55). Apple contends that an ordinarily skilled artisan would have understood that this modification would enhance van Hoff’s reliability and accuracy, and “would reduce the potential of hyperlinking a term within a requested document with an outdated or invalid webpage.” Pet. 41 (citing Ex. 1003 ¶¶ 53–55). Finally, Apple argues that “the modification requires only simple programming techniques well within a [person of ordinary skill in the art]’s expertise.” *Id.* (citing Ex. 1003 ¶¶ 53–55).

Like in response to Apple’s arguments for limitation 1(a), Sentius argues that “van Hoff’s annotation directories do not inherently include database content, as the term ‘data object’ requires.” PO Resp. 52. Sentius also argues that “Rodkin[’]s database-to-database synchronization scheme syndicates entire databases thereby eliminating the advantage of syndicating using smaller targeted objects that only need to include a relevant portion of the database such as an English dictionary.” *Id.* at 52–53 (citing Ex. 2002 ¶ 161); PO Sur-reply 21.

Apple counters that Sentius “is conflating the term ‘synchronizing’ recited in Claim 9 with the term ‘syndicating’ as recited in Claim 1.” Pet. Reply 16–17. Apple argues that for claim 9’s “synchronization” requirement, it “mapped Rodkin’s teachings regarding the central server 450 periodically updating remote content servers with particular character strings and destination addresses via a maintenance mode.” *Id.* at 17 (citing Pet. 40–41; Ex. 1003 ¶¶ 50–55, 81). Thus, according to Apple’s arguments for claim 9, the system synchronizes particular data objects to ensure that the contents of the databases are the same in both locations. *Id.* (citing Ex. 1003 ¶ 81).

We agree with Apple, on claim-differentiation principles, that the term *synchronizing* in claim 9 is not simply a repetition of the “syndicating” requirement in limitation 1(a). *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings.”). Apple’s reliance on Rodkin for claim 9 is somewhat different from its reliance on Rodkin for limitation 1(a), and we find Apple’s arguments persuasive that modifying van Hoff by implementing a “maintenance mode” similar to that of Rodkin would have been within the ordinary skill in the art at the time of the claimed invention.¹⁵ *See* Ex. 1003 ¶ 81. We also find Apple’s arguments persuasive that there would have been a motivation for this modification, to ensure that the character strings and destination addresses in related annotation directories are kept synchronized and up to date. *See* Pet. 40–41; Pet. Reply 17.

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 9 and 19 would have been obvious over van Hoff in view of Rodkin.

12. *Claims 22, 26–29, 31, 32, and 35*

Claims 22, 26–29, 31, 32, and 35 each depend from claim 21. *See* Ex. 1001, 15:53–16:22. Because Sentius does not specifically contest

¹⁵ As we note above (*supra* note 13), van Hoff already discloses that directories 112 can be updated and improved automatically over time. *See* Ex. 1004, 10:20–39. This automatic updating also occurs on a link-by-link basis. *See id.*

Apple’s contentions regarding the added limitations for these dependent claims, we address them together.

Claim 22 recites “wherein the supplemental content is transmitted from a remote computer.” Ex. 1001, 15:53–54. Relying on its arguments for the “wherein clause” of claim 21, Apple argues that Rodkin teaches that “a third-party server (i.e., remote computer) delivers the relevant webpage (i.e., supplemental content) in response to a user clicking on a hypertext link.” Pet. 53. We find this argument persuasive.

Claim 26 recites “wherein the user interaction comprises a user selecting the at least one term with a mouse cursor.” Ex. 1001, 15:60–62. Claim 27 is nearly identical except that it uses the word *clicking* rather than *selecting*. *See id.* at 15:63–65. Relying on its arguments for claim 21, Apple argues that “it would have been obvious to modify Van Hoff to allow a user to select the at least one term with a mouse cursor as taught by Rodkin,” and that Rodkin specifically teaches that “a user may click or otherwise select a hyperlink by clicking on said link with a mouse or pointing device.” Pet. 54 (citing Ex. 1005, 13:3–12, 1:27–30; Ex. 1003 ¶ 91). We find this argument persuasive.

Claim 28 recites “wherein the at least one term is visibly enhanced to notify the user of available supplemental content.” Ex. 1001, 16:1–3. Relying on its arguments for claim 21, Apple argues that Rodkin teaches visibly enhancing a term in a document to indicate that it is a navigable link. *See* Pet. 54–55 (citing Ex. 1003 ¶¶ 92–93). We find this argument persuasive.

Claim 29 recites “wherein the supplemental content comprises at least one advertisement.” Ex. 1001, 16:4–6. Relying on its arguments for claim 4,

Apple argues that the van Hoff–Rodkin combination teaches providing a sponsorship opportunity, and that van Hoff specifically mentions advertising and sales. Pet. 55–56 (citing Ex. 1004, 1:59–66). Thus, according to Apple, a person of ordinary skill in the art “would have found it obvious to provide supplemental content comprising at least one advertisement.” Pet. 56 (citing Ex. 1003 ¶ 94). We find this argument persuasive.

Claim 31 recites “wherein one or more of the predetermined rules are based on manner of linguistic usage of a term.” Ex. 1001, 16:9–11. Apple argues that van Hoff teaches that its “proxy server can include a neural language processor for parsing the source document.” Pet. 56 (citing Ex. 1004, 7:52–56). According to Apple, this works by “determining the grammatical usage of a term in a document” and “including only terms used as nouns in the annotation.” *Id.* (quoting Ex. 1004, 8:31–38). Thus, Apple contends that a person of ordinary skill in the art would have recognized that van Hoff discloses the added limitation of claim 31. *Id.* (citing Ex. 1003 ¶ 95). We find this argument persuasive.

Claim 32 recites “wherein one or more of the predetermined rules are based on presence or lack thereof of an entry in a database.” Ex. 1001, 16:12–14. Relying on its arguments for limitation 1(b), Apple argues that in the course of parsing a document, van Hoff’s proxy server “compares the characters, words, phrases, and the like with match patterns 195 in the selected annotation directory” and, if there is a match, “that indicates that an annotation linking the portion of the document associated with the matching pattern to the paired cross reference source should be added to the requesting document.” Pet. 57 (emphasis omitted) (quoting Ex. 1004, 7:1–5; and then quoting *id.* at 5:37–45). Thus, Apple argues that an ordinarily skilled artisan

would have understood that “a term within a requested document could only be identified if the corresponding match pattern field 195 (i.e., a rule) was stored as an entry within the annotation directory (i.e., present in the database).” *Id.* (citing Ex. 1003 ¶¶ 96–97). We find this argument persuasive.

Claim 35 recites “wherein one or more of the predetermined rules are based on one or more financial incentives.” Ex. 1001, 16:20–22. Relying on its argument for claim 4, Apple argues that Rodkin teaches that “a company may pay to have their webpage linked via a hypertext link associated with a character string in an online article and the browser communicates with a third-party server to retrieve the destination webpage when a user clicks on the hypertext link.” Pet. 58 (citing Ex. 1005, 13:3–12, 17:51–55). Thus, according to Apple, the van Hoff–Rodkin combination discloses the added limitation of claim 35. *Id.* We find this argument persuasive.

Apart from its arguments for claim 21, Sentius does not challenge Apple’s arguments for the above claims. We determine that Apple has shown, by a preponderance of the evidence, that claims 22, 26–29, 31, 32, and 35 would have been obvious over van Hoff in view of Rodkin.

13. *Claims 38, 42, and 46*

Claim 38 depends from claim 1 and further recites “wherein the identified content is stored in the term database.” Ex. 1001, 16:44–45. Essentially the same limitation appears in claim 42, which depends from claim 11, and in claim 46, which depends from claim 20. *See id.* at 16:53–54, 63–64.

For these claims, Apple relies on its arguments for limitation 1(a) and the corresponding limitation in claim 11. Pet. 59 (claim 38), 61 (claim 42), 62 (claim 46).

In response, Sentius reiterates its previous arguments directed to the independent claims, including that Apple has not shown that van Hoff or Rodkin “maintains database content that is identified and displayed.” PO Resp. 53–54, 56 (citing Ex. 2002 ¶¶ 165, 168–171).

We note that, as Apple clarified in the context of claim 5, Apple’s position (which we find persuasive) is that “the ‘content’ as claimed in Claim 1 is broad enough to include both the URL stored in Van Hoff’s annotation directory (as Petitioner identified in its mapping for Claim 1) *and* the document linked via the hypertext link annotation (as Petitioner identified in its mapping for Claim 5).” Pet. Reply 14; *see supra* Section III.C.8. We find this persuasive, and agree that, as claims 1 and 11 are applied to van Hoff, the “identified content” (in the form of a link) would be stored in van Hoff’s annotation directory (the term database).

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 38, 42, and 46 would have been obvious over van Hoff in view of Rodkin.

14. Claims 40 and 44

Claim 40 depends from claim 1 and further recites “wherein the content comprises one or more of a text, image, sound, video and mixed media.” Ex. 1001, 16:48–49. Claim 44 depends from claim 11, and includes essentially the same limitation. *See id.* at 16:58–59.

Relying on its arguments for claim 5, Apple argues that van Hoff teaches that hypertext link annotations are “supplemental information related to the topic of the received document,” and a person of ordinary skill in the art would have understood that it “by its very nature must contain one of text, image, sound, video, or mixed media.” Pet. 60 (citing Ex. 1005, 7:66–

8:3; Ex. 1003 ¶ 98). Alternatively, Apple argues that Rodkin teaches hyperlinking to a corresponding webpage containing at least text and images, and a person of ordinary skill in the art would have been motivated to adopt Rodkin’s known technique of linking to textual information to improve van Hoff’s supplemental information. Pet. 60–61 (citing Ex. 1005, 16:9–14; Ex. 1003 ¶ 100); *see also* Pet. 62 (claim 44).

In response, Sentius reiterates its previous arguments directed to the independent claims, including that Apple has not shown that van Hoff or Rodkin “maintains database content that is identified and displayed.” PO Resp. 54, 56 (citing Ex. 2002 ¶¶ 167–171). As discussed above in Sections III.B.2 and III.C.3(d), we find Sentius’s arguments unavailing.

Thus, we determine that Apple has shown, by a preponderance of the evidence, that claims 40 and 44 would have been obvious over van Hoff in view of Rodkin.

15. Conclusion as to Ground 1

For the above reasons, we find that Apple has shown, by a preponderance of the evidence, that claims 1–23, 26–29, 31, 32, and 35–46 are unpatentable as obvious over the combination of van Hoff and Rodkin.

D. OBVIOUSNESS GROUND BASED ON VAN HOFF, RODKIN, AND INGRAM (CLAIM 25)

Apple contends that dependent claim 25 is unpatentable as obvious over the combination of Hoff, Rodkin, and Ingram. Pet. 4, 62–66. For the reasons below, we find Apple’s arguments persuasive.

Claim 25 depends from claim 23 and further recites “wherein the content window is embedded in the source document.” Ex. 1001, 15:58–59.

Apple relies on Ingram as teaching this limitation. *See* Pet. 62–66. Ingram describes an “enhanced hyperlink” that shows a toolbar allowing the user to “[o]pen the Hyperlinked Page in a new browser window at a predetermined and/or smaller size than the original window,” which “enables users to view the page referenced by the hyperlink while keeping the original web page visible in the background for instant re-visiting.” Ex. 1006, code (57), 4:57–64.

According to Apple, a person of ordinary skill in the art would have been motivated to use Ingram’s enhanced hyperlink in van Hoff’s system because the modification “would improve the functionality of the hyperlinks . . . and accomplish *Ingram*’s stated need for providing a user with the benefit of not losing their train of thought or getting lost in the pages available via hyperlinks.” Pet. 66 (citing Ex. 1006, 1:53–63, 2:46–51, 4:61–64).

In its Response, Sentius argues, as with the other claims, that “Apple does not demonstrate that any content maintained by van Hoff’s (or Rodkin’s) system is identified and displayed in any form. Nor does Apple argue for a modification of van Hoff (or Rodkin’s) system to display such internally maintained content to the user.” PO Resp. 62 (citing Ex. 2002 ¶¶ 183–186).

We address these issues above. *See, e.g., supra* Sections III.B.2, III.C.3(b). Based on the evidence of record, we find Apple’s arguments persuasive in showing that an ordinarily skilled artisan would have been motivated to further modify van Hoff’s and Rodkin’s combined teachings to display the supplemental content in a content window that is separate from the source document. We also agree that this modification would have been

within the ordinary skill in the art. Thus, we find that Apple has shown, by a preponderance of the evidence, that claim 25 is unpatentable as obvious over van Hoff in view of Rodkin and Ingram.

IV. CONCLUSION¹⁶

For the reasons above, Apple has shown by a preponderance of the evidence that claims 1–23, 26–29, 31, 32, and 35–46 of the '985 patent are unpatentable under § 103(a) as obvious over van Hoff and Rodkin, and that claim 25 is unpatentable under § 103(a) as obvious over van Hoff, Rodkin, and Ingram.

V. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–23, 25–29, 31, 32, and 35–46 of the '985 patent are unpatentable;

FURTHER ORDERED that 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.

¹⁶ Should Sentius wish to pursue amendment of claims in a reissue or reexamination proceeding after this decision, we draw Sentius'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 Sentius chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Sentius 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:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–23, 26– 29, 31, 32, 35–46	103(a)	van Hoff, Rodkin	1–23, 26–29, 31, 32, 35–46	
25	103(a)	van Hoff, Rodkin, Ingram	25	
Overall Outcome			1–23, 25–29, 31, 32, 35–46	

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