IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

IP INNOVATION L.L.C. AND TECHNOLOGY LICENSING CORPORATION,	)	CASE NO. 2:07cv503-LED
Plaintiffs,	)	JURY TRIAL DEMANDED
v.	)	
GOOGLE INC.,	)	
Defendant.	)	

PLAINTIFFS' P.R. 4-5(c) REPLY BRIEF REGARDING CLAIM CONSTRUCTION

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I. INTRODUCTION

The bulk of Google's claim construction response relies heavily on citations to expert declarations. However, the majority of the claim terms are either expressly defined or straight forward enough that expert testimony is unnecessary. Google's declarants gloss over the express definitions – choosing to re-write the patents in their own language – or they outright ignore and contradict them. This is improper in claim construction. As explained by Phillips and subsequent cases, extrinsic evidence is often unnecessary since claim construction begins, and can end, with a consideration of the claims, specification and prosecution history. Phillips v. AWH Corp., 415 F.3d 1305, 1317 (Fed. Cir. 2005); Finisar Corp. v. DirectTV Group, Inc., 523 F.3d 1323, 1328 (Fed. Cir. 2008) ("expert testimony cannot overcome more persuasive intrinsic evidence."); Playtex Products, Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (finding it improper to use expert testimony to contradict intrinsic evidence in claim construction). Accordingly, the Court should give little credit to the Croft and Badler declarations as unnecessary extrinsic evidence according to Phillips.

Google also relies on the testimony of the inventor of the '819 Patent, Hinrich Schuetze. Dr. Schuetze was actually hired by Google to perform "research" shortly after the litigation was filed. Within a couple of weeks of hiring him, Dr. Schuetze met with Google's litigation counsel to discuss the case. IPI did not learn that Dr. Schuetze was a Google employee until he was being deposed by Mr. Hintz, one of the attorneys he met with to discuss the case. Only two weeks prior to his deposition and six months after he had been working at Google (and meeting with litigation counsel), Google served a second supplemental 26(a)(1) disclosure that listed Dr. Schuetze as a third party located at the University of Stuttgart in Germany. Dr. Schuetze was, in fact, living in California and working at Google. Dr. Schuetze ended his employment with Google just six (6) days after giving testimony in this case. Dr. Schuetze is not a disinterested third party inventor.

II. GOOGLE'S REVISED CONSTRUCTIONS

Google's claim construction response includes revised constructions for three of the disputed claim elements in the '785 Patent. Differences between Google's original constructions (Ex. A to Docket No. 57) and its revised constructions are highlighted in the chart attached hereto as Exhibit A. IPI first learned of Google's intention to revise these three constructions on August 21, 2009 – the business day before IPI's opening claim construction brief was to be filed with the Court. (Ex. B, 8/21/2009 Anna Lee letter). Given Google's last minute change of heart, this will be IPI's first opportunity to address Google's new constructions.

III. DISPUTED CLAIM ELEMENTS FROM THE '819 PATENT

A. "thesaurus"

Google goes to great lengths to have this Court ignore the plain language of the '819 Patent. The inventor, in defining "thesaurus" in the '819 patent, expressly states that "[e]ven if the thesaurus is not explicitly computed, **the mapping performed by query expansion explicitly defines a thesaurus**." (Ex. C, '819 Patent, at Col. 1, Lines 54-56; emphasis added). Thus, the '819 Patent teaches that a "thesaurus" can be more than "a data structure that defines semantic relatedness between words." The plain language of the '819 Patent governs.

Google's argument that IPI's definition should be ignored because it is taken from "Description of Related Art" section of the specification is unfounded. Google's own definition comes from the exact same section. Moreover, IPI's definition does not read in a limitation, nor does it expand the definition of "thesaurus" beyond what is taught in the specification. IPI's definition simply gives the term "thesaurus" a definition that encompasses the scope of the teaching of that term in the specification. A claim term that has an ordinary meaning encompassing multiple relevant alternatives may be construed to encompass all such relevant alternatives. Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1379 (Fed. Cir. 2002). Accordingly, the Court should adopt IPI's proposed construction for "thesaurus."

B. "word vector"

Google is improperly trying to read in a limitation that a "word vector" must be a number. Neither the explicit definition contained in the specification nor the claims themselves require a word vector to be a number. To be sure, one embodiment of a "word vector" is a numerical value, but as this Court is well aware, limitations from the preferred embodiments cannot be read into the claims. Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306 (Fed. Cir. 2003).

Thus, while the specification may be used to aid in the interpretation of the claims, it may not be used as a source for adding extraneous limitations. Even when a patent discloses only a single embodiment in the specification, the claims of the patent need not be construed as being limited to that embodiment. Gemstar-TV Guide Int'l, Inc. v. ITC, 383 F.3d 1352, 1366 (Fed. Cir. 2004). The examples described and illustrated in the specification are intended to be just that – examples, not claim limitations.

The inventor, Dr. Schuetze, testified in his deposition as follows regarding a word vector:

> I mean, the assumption here is that you have a high-dimensional space, and in this case the high dimensional space is a space in which each dimension corresponds to a word. And then in a high-dimensional space you have points. And then you have a vector pointing to that point, I mean, kind of the line connecting the origin with the point. And so that's the word vector.

(Ex. D, Schuetze Dep., at p. 68, lines22-25, and p. 69, lines 1-4). There is no mention that a word vector must be a number. The Court should adopt IPI's proposed construction for "word vector."

C. "lexical co-occurrence" & "co-occurrence of words"

Once again, IPI's proposed construction is taken directly from the specification of the '819 Patent. Google, on the other hand, improperly reads in the limitation that the words must be "within a specified range." The '819 patent plainly states that two words "lexically co-occur if they appear in text within some distance of each other." (Ex. C, '819 patent, at Col. 4, Lines 29-31). Google provides no support for deviating from this express definition as provided in the '819 Patent. Google's construction for "lexical co-occurrence" improperly reads in limitations from

other portions of claim 1. Specifically, the relevant portion of claim 1 states, "recording a number of times a co-occurring word co-occurs in a same document *within a predetermined range* of the retrieved word." (Ex. C, '819 patent, at Col. 24, Lines 45-47). Logically, words could co-occur within some distance outside of the predetermined range. The claim itself governs which co-occurring words are recorded, i.e., those within a predetermined range. Accordingly, the Court adopt IPI's proposed construction for "lexical co-occurrence" and "co-occurrence of words."

D. "corpus of documents"

Google states that its proposed construction "comports with how an ordinarily skilled artisan would understand this limitation in light of the intrinsic evidence." To the contrary, the inventor of the patent, Dr. Schuetze, testified that "corpus of documents" is not limited to a particular source or subject matter, despite Google's selective citation of his testimony:

> Q (by Mr. Hall): With respect to a corpus, a corpus of documents can be defined by whoever sets up the particular system; is that correct?
>
> A: That's correct.
>
> Q: But for example, in a Google search system, Google would determine what the corpus of documents is; is that correct?
>
> A: Whoever applies the plan would determine what the corpus is, correct.
>
> Q: So in your '819 Patent, a corpus of documents would not have to be limited to a particular subject; is that correct?
>
> A: That's correct.

(Ex. D, Schuetze Dep., at p. 187, lines 3-15). The Court should construe "corpus of documents" as "a collection of documents which are available to an information retrieval system."

E. "range"

Here, Google has gone beyond attempting to import a limitation from a preferred embodiment; it is attempting to import a limitation for "contiguous" that appears nowhere in the '819 Patent. There is no reason to limit range beyond its plain and ordinary meaning, i.e., the

distance of text around a retrieved word. In addition to not teaching anywhere that the range must be contiguous, the '819 Patent actually teaches that there are instances where it is beneficial for the "range" to not be contiguous. Google's argument to contrary, the '819 patent teaches the concept of eliminating so-called "stop words," which are simply common word such as "the" or "an" which are often skipped because of their high frequency and low qualitative value to the document information retrieval process. See Ex. C, '819 Patent, at Col. 15, lines 50-53 ("For example, the B-subset contains the 20,000 most frequent words, excluding stop words."), and Col. 20, lines 57-60 ("Many words in the Tipster topic descriptions are not relevant for the query in question, but they should not be placed on a stop list either because they could be relevant for other queries.").

Google bases its argument on the fact that the claim element states "for ***every*** co-occurring word within a predetermined range." However, the word every relates to the co-occurring words and not the predetermined range. Nowhere in the patent does it state that the range must be a "contiguous" or unbroken string of words. Accordingly, the Court should construe "range" as "the distance of text around a retrieved word."

F. "context vector"

Again, Google provides no compelling argument why this Court should stray from the express definition set forth in the '819 Patent. A context vector is used to "retrieve relevant documents for a query" by using the ***sum*** of the thesaurus vectors. (Ex. C, '819 patent, at Col. 18, Lines 14-25). IPI's proposed construction – taken from the express language of the '819 Patent – is consistent with this definition. (See Ex. C, '819 patent, at Col. 5, Lines 5-7; Col. 17, Lines 16-20).

When presented with these two definitions at his deposition, Dr. Schuetze testified that both are correct and that "maybe the patent gives two definitions." (See Ex. D, Schuetze Dep., at pp. 125-128). IPI's proposed construction is in keeping with these definitions; Google's is not.

Finally, Google once again advances its theory that a "word vector" and a "thesaurus vector" must mean the same thing. A "thesaurus vector" is a type or use of a word vector but the reverse is

not necessarily true, i.e., all word vectors need not be thesaurus vectors. IPI fails to see how this argument compels deviating from the express definition set forth in the '819 Patent. Moreover, "thesaurus vector" is not a claim term in the '819 Patent, and is not a claim term that Google has asked this Court to construe. Accordingly, the Court should construe "context vector" as "a value corresponding to a combination of the sums of thesaurus vectors of words used."

G. "correlation coefficient"

Claim differentiation "presumes there is a difference in scope among the claims of the patent." Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed Cir. 1987). "[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." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). Thus, there is a presumption that claim 25, which actually uses the term correlation coefficient, is broader than claims 26 and 35, which add the claim limitation that the correlation coefficient is calculated using the cosine function. Google has not overcome this presumption. In fact, Google's own paid expert, Dr. Croft, states that he is "aware of other similarity measures that could have been used in 1994." (Croft decl., at para. 125). The '819 Patent does not state that the only way to perform a similarity analysis is by using the cosine function. Even when a patent discloses only a single embodiment in the specification, the claims of the patent need not be construed as being limited to that embodiment. Gemstar-TV Guide Int'l, Inc. v. ITC, 383 F.3d 1352, 1366 (Fed. Cir. 2004). Thus, Google's proposed construction is improper for three reasons: (1) it improperly reads in limitations from the preferred embodiment, (2) it fails to overcome the doctrine of claim differentiation, and (3) Google's own expert declares that there were other similarity measures that could have been used in 1994.

Finally, Dr. Schuetze testified that he did experiments prior to filing his patent using different similarity measures, including cosine, square root, and logarithm, and decided that it did

not matter which one was used. (See Ex. D, Schuetze dep., at pp. 86-87). The Court should adopt IPI's proposed construction for "correlation coefficient."

IV. DISPUTED CLAIM ELEMENTS FROM THE '785 PATENT

A. "viewpoint coordinate data"

Google argues that IPI's construction for "viewpoint coordinate data" is overly broad at pages 24-25 of its brief. To the contrary, it is Google's proposed construction that is too narrow. Google admits at p. 24 that it believes the claims should be limited to a preferred embodiment of an "x, y, and z" coordinate system despite the fact that such a limitation is not called for by the claims. As explained at page 19 of IPI's opening brief, the specification makes reference to viewpoint coordinate data without it being limited to Cartesian coordinates. Accordingly, limiting the claimed invention to a single embodiment as Google urges would be improper. Symantec Corp. v. Computer Assocs. Int'l., Inc., 522 F.3d 1279, 1290 (Fed. Cir. 2009) (reversing a claim construction that relied on expert testimony to find that "computer system" as used in the specification meant a single computer and not multiple, interconnected computers.) Accordingly, the Court should adopt IPI's proposed construction for "viewpoint coordinate data."

B. "user input means for providing signals"

The "user input means for providing signals" element is discussed at pages 25-26 of Google's response brief. Google improperly attempts to limit the function of the "user input means for providing signals" to either "viewpoint motion" or "point of interest motion." (Google Br. at 25). This is surprising given Google's original proposed construction for the function of "user input means" was "for providing signals" and was not restricted to a type of motion. (Ex. A to Docket No. 57, at p. 4). There are other types of signals as Google's own description of the technology of the '785 patent admits; such as using a mouse to identify a point of interest. (Google Br. at 23). Identifying a point of interest is not viewpoint motion or point of interest motion.

As to the corresponding structure, Google has now conceded that signals can be received from "one or more user input devices." This is a significant concession from Google's initial proposed construction which required more than one user input device. However, Google's proposed construction is still wrong since it improperly narrows this claim element by incorporating the concept that the signals must be separate, a limitation that was not part of Google's original proposed construction. The plain and ordinary meaning of the claim language does not mandate that the signals be separate. As Dr. Mackinlay testified, one signal set (or signals) could request both viewpoint motion and point of interest motion. (Ex. E, Mackinlay Rough Dep. at 52, 109, 111). The user input means, such as a mouse or keyboard, can provide all the signals necessary for the use of the system – selections of points of interest, motion request signals, etc. These can be individual signals or sets of signals. Further, the very language of the claim explains that the system receives a motion requesting signal set from the user input means requesting both "a first viewpoint motion **and** a first point of interest motion." (Ex. F, '785 patent: 26:57-60). Accordingly, the Court should adopt IPI's proposed construction for the function and structure of the "user input means."

C. "user can request viewpoint motion and point of interest motion independently"

"User can request viewpoint motion and point of interest motion independently," should not even be construed since it is merely part of the preamble for claim 52 and not a claim limitation. It is describing an aspect of the "user input means" and not a claim element. Assuming the Court decides that this phrase should be construed, Google seems to be arguing that "independently" in claim 52 means the user can request viewpoint and point of interest motion separately and simultaneously. Google's original construction did not require the user request to occur simultaneously, only separately. Google has not offered any explanation for this significant change and it contradicts the plain meaning of the claim language which only requires that the user can request viewpoint motion and point of interest motion ***independently***. IPI is at a loss for how a

claim element whose plain meaning requires that a request for motion independently must also occur simultaneously – or at the same time. A simultaneous request is not required by claim 52 of the '785 patent. All that is required is that the request for viewpoint motion and point of interest motion occur independently. Accordingly, IPI's proposed construction should be adopted.

D. "motion requesting signal set"

Neither Google's original nor its revised proposed construction for the "motion requesting signal set" element are correct. The "motion requesting signal set" must encompass all the different types of motion that are possible by the inventions of the '785 patent. Google agrees that '785 patent includes viewpoint motion toward, away from and lateral to a point of interest. (Google Br. at 22). However, Google seeks to limit the motion requesting signal set to a group of commands that include both viewpoint and point of interest motion. Accordingly, the Court should adopt IPI's proposed construction for "motion requesting signal set."

E. "viewpoint motion"

Google relies heavily on the Badler declaration in an effort to ignore and contradict the explicit definition given to "viewpoint motion" in the specification of the '785 patent. None of Google's arguments can overcome the express definition given in the patent: "'viewpoint motion' or 'viewpoint displacement' occurs when a sequence of images is presented that are perceptible as views of a three-dimensional workspace from a moving or displaced viewpoint." (Ex. F, 785 patent, col. 7, lines 41-44). Accordingly, Google's reliance on extrinsic evidence to should be rejected in favor of the inventors' definitions in the patent. Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002).

F. "point of interest motion"

"Point of interest motion is addressed at pages 28-29 of Google's response brief. Google's argument that IPI's use of "displaced" is confusing is contradicted by the specification and the express definition given by the inventors to the other type of motion claimed in the '785 patent –

viewpoint motion. In defining viewpoint motion, the inventors' stated that "viewpoint motion" is perceptible as views of a three-dimensional workspace from a moving or ***displaced*** viewpoint. (Ex. F, 785 patent at 7:41-44; emphasis added). IPI's proposed construction for "point of interest motion" closely tracks the language of "viewpoint motion" substituting "point of interest" for "viewpoint." Therefore, it is IPI's proposed construction, not Google's, that is most consistent with the inventors' description of their invention. Accordingly, IPI's proposed construction should be adopted.

G. "radial motion"

Google again chooses to ignore the specific definition in the '785 patent for "radial motion" in favor of a definition of their own concoction. As with its other constructions, Google relies on the extrinsic Badler declaration rather than the claims and specification of the patent. Just because Google does not like the definition of "radial motion" chosen by the inventors, does not mean Google can utilize extrinsic evidence in an effort to re-write the definition. Where the patentees have acted as their own lexicographers in defining a claim term, that definition controls. Since the inventors did so with regards to "radial motion" that definition should be adopted.

H. "ray"

Yet again, Google ignores a specific definition in the specification and seeks to incorporate additional imitations through the extrinsic Badler declaration. Google's re-writing of the specification and the inventors' definitions should again be rejected. The Court should adopt the definition for "ray" utilized by the inventors and as urged by IPI in the '785 patent.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing **PLAINTIFFS' P.R.4-5(c) REPLY BRIEF REGARDING CLAIM CONSTRUCTION** was filed with the Clerk of the Court on September 21, 2009, using the CM/ECF system, which will send notification of such filing to the following at their email address on file with the Court.

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