

# EXHIBIT 1



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SNR DENTON US LLP P.O. BOX 061080 CHICAGO, IL 60606-1080			BANANKHAH, MAJID A	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Transmittal of Communication to Third Party Requester <i>Inter Partes</i> Reexamination</b>	<b>Control No.</b>	<b>Patent Under Reexamination</b>	
	<b>Examiner</b>	<b>Art Unit</b>	
	95/001,569	6981040	
	MAJID A. BANANKHAH	3992	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --**

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

**All correspondence** relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

<b>Right of Appeal Notice (37 CFR 1.953)</b>	Control No.	Patent Under Reexamination
	95/001,569	6981040
	Examiner	Art Unit
	MAJID A. BANANKHAH	3992

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --**

Responsive to the communication(s) filed by:  
 Patent Owner on 21 May, 2012  
 Third Party(ies) on 20 June, 2012

Patent owner and/or third party requester(s) may file a notice of appeal with respect to any adverse decision with payment of the fee set forth in 37 CFR 41.20(b)(1) within **one-month or thirty-days (whichever is longer)**. See MPEP 2671. In addition, a party may file a notice of **cross** appeal and pay the 37 CFR 41.20(b)(1) fee **within fourteen days of service** of an opposing party's timely filed notice of appeal. See MPEP 2672.

**All correspondence** relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

If no party timely files a notice of appeal, prosecution on the merits of this reexamination proceeding will be concluded, and the Director of the USPTO will proceed to issue and publish a certificate under 37 CFR 1.997 in accordance with this Office action.

The proposed amendment filed \_\_\_\_\_  will be entered  will not be entered\*

\*Reasons for non-entry are given in the body of this notice.

- 1a.  Claims 1,11,21,22,32 and 34 are subject to reexamination.
- 1b.  Claims 2-10,12-20,23-31,33 and 35-62 are not subject to reexamination.
- 2.  Claims \_\_\_\_\_ have been cancelled.
- 3.  Claims \_\_\_\_\_ are confirmed. [Unamended patent claims].
- 4.  Claims \_\_\_\_\_ are patentable. [Amended or new claims].
- 5.  Claims 1,11,21,22,32 and 34 are rejected.
- 6.  Claims \_\_\_\_\_ are objected to.
- 7.  The drawings filed on \_\_\_\_\_  are acceptable.  are not acceptable.
- 8.  The drawing correction request filed on \_\_\_\_\_ is  approved.  disapproved.
- 9.  Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d) or (f). The certified copy has:  
 been received.  not been received.  been filed in Application/Control No. \_\_\_\_\_.
- 10.  Other \_\_\_\_\_

**Attachments**

- 1.  Notice of References Cited by Examiner, PTO-892
- 2.  Information Disclosure Citation, PTO/SB/08
- 3.  \_\_\_\_\_

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**DETAILED INTER PARTES RIGHT OF APPEAL NOTICE****I. INTRUODUCTION**

This Office Action concerns the *inter partes* reexamination of US 6,981,040 to Konig (hereafter Konig) and is responsive to Patent Owner's (PO) amendment and response (05/21/2012), and Third Party Requester's (TPR) comments (06/20/2012) to the Action Closing Prosecution (ACP) mailed on 19 April 2012. Declaration of Charles Nicholas, filed May 21, 2012 discussed by the Patentee in his arguments is acknowledged and will be responded after response to the Patent Owner's arguments. Comments presented by the Third Party Requester have been acknowledged.

**II. AMENDMENT AND STATUS OF CLAIMS****A. Amendment After the ACP**

No amendment has been filed after the ACP of 19 April 2012 in this Right of Appeal Notice (RAN).

**B. Status of Claims and Summary of the Grounds of Rejections Proposed****a. Status of Claims**

Claims 1, 11, 21, 22, 32 and 34 are the current pending claims in this reexamination proceeding.

**b. Summary of the Grounds of Rejections in This RAN**

The following is a summary of Grounds of rejections that were originally proposed by the Request of 03/07/2011 that was adopted, not adopted or withdrawn in this RAN.

**1. Mladenic**

Issue #1	<i>Mladenic</i> (EXHIBIT CC-A)
Claims 1, 11, 32, and 34 are anticipated by <i>Mladenic</i> under 35 U.S.C. § 102(a).	Adopted essentially as proposed and maintained.
Issue #2	<i>Mladenic</i> (EXHIBIT CC-A)
Claim 11 is obvious over <i>Mladenic</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.

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Issue #3	<i>Mladenic</i> (EXHIBIT CC-A)
Claims 1, 11, 32 and 34 are obvious over <i>Mladenic</i> in view of <i>Yang</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #4	<i>Mladenic</i> (EXHIBIT CC-A)
Claim 21 is obvious over <i>Mladenic</i> in view of <i>Refuah</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #5	<i>Mladenic</i> (EXHIBIT CC-A)
Claim 22 is obvious over <i>Mladenic</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #6	<i>Mladenic</i> (EXHIBIT CC-A)
Claim 34 is obvious over <i>Mladenic</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.

## 2. *Wasfi*

Issue #7	<i>Mladenic</i> (EXHIBIT CC-B)
Claims 1, 21, 22, and 32 are anticipated by <i>Wasfi</i> under 35 U.S.C. § 102(a).	Adopted essentially as proposed and maintained.
Issue #8	<i>Mladenic</i> (EXHIBIT CC-B)
Claim 11 is obvious over <i>Wasfi</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #9	<i>Mladenic</i> (EXHIBIT CC-B)
Claim 22 is obvious over <i>Wasfi</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #10	<i>Mladenic</i> (EXHIBIT CC-B)
Claim 34 is obvious over <i>Wasfi</i> in view of <i>Culliss</i> under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.

## 3. *Refuah*

Issue #11	<i>Mladenic</i> (EXHIBIT CC-C)
Claims 1, 11, 21, 22, 32 and 34 are anticipated by <i>Refuah</i> under 35 U.S.C. § 102(e).	Adopted essentially as proposed and maintained.

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Issue #12	<i>Mladenic</i> (EXHIBIT CC-C)
Claims 1, 11, 21, 22, 32 and 34 is obvious over Refuah in view of Mladenic under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.

#### 4. *Culliss*

Issue #13	<i>Mladenic</i> (EXHIBIT CC-D)
Claims 1, 21, 22, and 32 are anticipated by Culliss under 35 U.S.C. § 102(e).	Adopted essentially as proposed and maintained.
Issue #14	<i>Mladenic</i> (EXHIBIT CC-D)
Claim 11 is obvious over Culliss in view of Mladenic under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #15	<i>Mladenic</i> (EXHIBIT CC-D)
Claim 22 is obvious over Culliss in view of Refuah under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.
Issue #16	<i>Mladenic</i> (EXHIBIT CC-D)
Claim 34 is obvious over Culliss in view of Mladenic and Refuah under 35 U.S.C. § 103(a).	Adopted essentially as proposed and maintained.

### III. STATUTORY BASIS FOR GROUNDS OF REJECTIONS

#### A. *Statutory Basis for Grounds of Rejections under 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

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international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***B. Statutory Basis for Grounds of Rejections under 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all discussion of obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

No claim have been indicated to be patentable or confirmed.

**IV. PROPOSED THIRD PARTY REQUESTER'S REJECTIONS, PATENT OWNER'S AND THIRD PARTY REQUESTER'S RESPONSE.**

The proposed rejection of claims 1, 11, 21, 22, 32 and 34 as set forth in the Request is maintained. Section VI. (pages 6-36), of the ACP (Section VI.), which include detail of those rejection is incorporated herein by reference.

**V. RESPONSE TO ARGUMENTS**

The Examiner adopts the Patent Owner's organization of the arguments.

**1. Response to Rejections Based on Primary reference *Mladenic***

**Examiner's Note**

At the outset it must be pointed out that the Court's claim constructions (which remain subject to appeal) do not strictly govern these reexamination proceedings, which are to be conducted under the broadest reasonable interpretation standard. Nonetheless, they should be noted and considered in application of the broadest reasonable interpretation standard. Convolve should not be permitted to treat its patent claims "like a 'nose of wax,' [to] be twisted one way to avoid unpatentability [in reexamination] and another to find infringement [in the litigation]."



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*Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001), quoting, *Sterner Lighting, Inc. v. AlliedElee. Supply, Inc.*, 431 F.2d 539, 544 (5th Cir.1970). To permit it do so would defeat the public interest in the reexamination "reducing the possibility that claims, finally allowed [if any], will be given broader scope than is justified." *Yamamoto*, 740 F.2d at 1571.

The Examiner is aware that determination of claim scope during litigation involves different standards of proof and rules of claim construction however, "in rejecting claims the Examiner may rely upon admissions by applicant or the Patent Owner as to any matter affecting patentability[.]" See 37 C.F.R. § 1.104(c) (3).

Response to the Patent Owner's argument that:

**II. A. Mladenic Teaches a Recommendation System Intended to Suggest Hyperlinks on Pages Requested by a User.**

The Patentee contends that the Mladenic do not analyze a document to identify properties of the document, since in Mladenic when the user is engaged in use of his/her computer PWW "actually predict[s] interestingness of [a] document based on the [extended representation of a] hyperlink pointing to it, and not on [the] document itself ..." *Id.* Response at page 5. The Patent Owner referring to Dec. of Nicholas, arguing that Mladenic's "Personal Web Watcher" (PWW) is described as a personal "agent" that "looks over a user's shoulder" as he/she browses the Web, recommending hyperlinks it believes will be of interest, rather than analyzing subject documents to determine whether or not they would be of interest to a user, however, when a user is engaged in use of his/her computer PWW "actually predict[s] interestingness of [a] document based on the hyperlink pointing to it, and not on [the] document itself.

The Requester responds by maintaining that while Mladenic does teach identifying properties of a document by analyzing the hyperlink pointing to the document, Mladenic also teaches that one could identify properties of a document by analyzing the document itself instead of its associated hyperlink. (Mladenic at 10). Requester further maintain that Mladenic also explain that other versions of the WebWatcher system identify document properties by analyzing

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the document itself rather than just analyzing the hyperlink pointing to the document. (See *Id.*, at 4)

Examiner agrees with the Requester that Mladenec recognizes and can in fact analyze the whole document itself. Mladenec discloses that:

“Some later versions of the WebWatcher system change slightly the way of constructing text for learning, e.g. adding words in the document retrieved behind hyperlink. Many current systems that learn on text use the bag-of-words representation using either Boolean features indicating if specific word occurred in document (e.g. [2], [8], [23], [26], [35]) or frequency of word in a given document (e.g. [1], [3] [4], [5], [17], [35]). There is also some work that uses additional information such as word position [8] or word tuples called n-grams [33].” [Underlining provided] *Id.*, at page 4.

As understood from the *above* excerpts, there are versions of the WebWatcher that analyzes the document behind the link because, Mladenec referring to the version that adding word in the document behind hyperlink.

Mladenec later at page 10 teaches:

“Since the prediction should be performed while user is waiting for a HTML-document, we are actually predicting interestingness of document based on the hyperlink pointing to it, and not document itself (retrieving documents behind the requested hyperlinks is usually time consuming)”

“What we use is an extended representation of hyperlink (see Section 4.1), that tries to capture information related to the document behind a hyperlink. But during the learning phase we can afford using more time than when adding advice, so why not retrieving documents behind hyperlinks, instead of using the extended hyperlink representation? In that case, we can learn the model of user interests directly from documents whose interestingness we are trying to predict” [Underlining provided] *Id.* pg. 10-11.

Moreover, Examiner notes that, for a person of ordinary skill in the art, it would take undue experimentation to instruct the PWW system to analyze the unseen document behind the hyperlink in order to find users interest. Examiner also notes that, even when the prediction is based on the hyperlink itself, i.e., in extended hyperlink representation (in section 4.1) version, this teaching reads on the broad language of the claim because, it is the document that is analyzed to find other links in order to find the interestingness of other links. As such, Mladenec

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teaches “analyzing a document d to identify properties of the document.” For the *above* reasons, the Patent Owner’s argument is unpersuasive and erroneous.

Additionally, even if Mladenec was not disclosing that unseen document is analyzed (which is not the case) the claims, recites: (d) **“analyzing a document d to identify properties of the document”**. [I]t would be erroneous to entertain a phrase that only introduces new limitations and subjective ambiguity into the claims where none existed before. Yet the Patent Owner attempts to introduce new limitations and ambiguity into the claims where none existed before. For example, the Patent owner introduces the limitation that the claimed “analyzing” must be related to unseen document, but the analyzing feature does not require any specific of the type of document to be analyzed. It is noted that the word “unseen” comes after the analyzing document in step (e) “that an unseen document d is of interest”. As such the analyzing step does not necessarily must be interpreted to mean unseen document.

The Patent Owner relying on para. 8, 9 and 10 of Nicholas Dec. and referring to the two approaches in Mladenec, namely k-Nearest approach and Naïve Bayesian approach, arguing that: “The classifiers use the HL and DOC models to predict if a new hyperlink is a positive or negative example of the user interests.” Arguing that the new hyperlink exists on a page the user is currently viewing and so neither that page nor the hyperlink thereon that is being evaluated is “unseen”, and even if they were, it is the interestingness of the hyperlinks, not the document they are on nor the documents they point to, that is predicted.

Examiner notes that this argument is not persuasive. It appears that the Patent Owner and Declarant Nicholas are under the misimpression that since the new hyperlink is on a page the user is currently viewing, therefore hyperlink is not ‘unseen.’ Generalizing that since the hyperlink is not ‘unseen,’ the document is seen. Since the document is seen, the reference does not satisfy the claim language; “estimating a probability  $P(u/d)$ ...by the user model” of the independent claims. However, this argument is erroneous. First, the patent Owner and declarant Nicholas both agree that the PWW of Mladenec the document behind the hyperlink is not seen (is ‘unseen’) by the user. In fact Mladenec is referring to these documents as “documents behind

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hyperlinks”, which means the documents are ‘unseen’ or not viewed. Second, Mladenic does not say that PWW cannot find the interestingness of an ‘unseen’ document behind the hyperlink.

The question here is whether the document is considered ‘unseen’ when the hyperlink pointing to the document is viewed by the user, even if the user has not seen the document itself or not. In order to find the answer to this question one has to look at the definition of ‘unseen’ from the specification of the ‘040 patent itself. The specification of the ‘040 patent states;

“The personal links application is illustrated in FIG. 20. In this application, the hyperlinks in a document being viewed by the user are graphically altered, e.g., in their color, to indicate the degree of interest of the linked documents to the use. **As a user views a document (step 210), the document is parsed and analyzed (212) to locate hyperlinks to other documents. The linked documents are located in step 214 (but not shown to the user), and evaluated with the User Model (214)** to estimate the user's interest in each of the linked documents. In step 216, the graphical representation of the linked documents is altered in accordance with the score computed with the User Model. For example, the links may be color coded, with red links being most interesting and blue links being least interesting, changed in size, with large links being most interesting, or changed in transparency, with uninteresting links being faded. If the user follows one of the interesting links (218), then the process is repeated for the newly viewed document (210).” [Underlining and **Bold** are provided] *Id.*, ‘040 patent at col. 29, lines 41-60.

As understood from the *above* portion, the personal links are viewed by the user while the documents behind the hyperlinks - not shown to the user or ‘unseen’ as worded by the Patent Owner- are parsed and analyzed in order to determine the degree of interest of the linked document to the user. As such, the Patent Owner and Declarant’s argument is without merit since this is exactly how the system of the ‘040 patent is designed to perform. The specification of the ‘040 patent specifically states that when the user views a document (step 210), the document is parsed and analyzed (212) to locate the hyperlinks to other documents and when the ‘not shown to the user document’ are located (step 214), the document is evaluated with the User Model. In the ‘040 patent, the links to the other documents are viewed by the user, before the system locate the document and parses and analyzes them. As such the patent Owner and Declarant’s argument is erroneous and unpersuasive.

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The Patent Owner at the bottom of page 7, Footnote 8, referring to para. 12 of Dec. of Nicholas contends that, of the two models of Mladenic, namely k-Nearest approach and Naïve Bayesian approach, neither produces very good results. Arguing that giving these poor results, it is questionable whether anyone of ordinary skill in the art would ever adopt any of the Mladenic's teachings when trying to solve the problem of determining hyperlink or documents of interest to a user.

It appears that the Patent Owner and declarant Nicholas arguing that since the Mladenic's teaching is not desirable, it teaches away an artisan from making and using the PWW. The argument of "teach away" presented by patentee and declarant is not persuasive and does not raise to the standard of 'teach away' argument. Examiner notes that asserting that to 'teach away', a reference must generally suggest that a proposed modification of a reference (or combination) would be non-operative or actively discourage the modification. MPEP 2145.D. 1. Simply stating that one method/system is preferred over another, or that a method/system has challenges at the time, is not sufficient to 'teach away'. *In re Gurley*, 27 F.3d 551,554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). Nevertheless, the Patent Owner presented no evidence that the cited art, as viewed by the person of ordinary skill in the art, 'teaches away' from the claims, and the interpretation of the art by its attorneys alone must be rejected. MPEP § 2145.I The Patent owner's 'teach away' argument is mere related to the disadvantage of WebWatcher, but not inoperability of determining hyperlink of interest or interestingness of document behind hyperlink taught by Mladenic.

Response to argument that:

**II. B. Because Mladenic Does Not Teach Analyzing a Document to Identify Properties of the Document and Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Mladenic Cannot Anticipate Claims 1, 11, 32 and 34.**

The Patent Owner at page 7 through page 8 of his remarks once again contends that Mladenic is unequivocal in stating that the PWW "actually predict[s] interestingness of [a] document based on the hyperlink pointing to it, and not [on the] document itself." Mladenic at p.

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10. Referring to Fig. 3 of Mladenic and arguing that the hyperlink on which the prediction is made is located on a current document that a user is viewing. The Patent Owner once again arguing that in Mladenic since the hyperlink exists on a page the user is currently viewing so neither that page nor the hyperlink thereon that is being evaluated is 'unseen', and even if they were, it is the interestingness of the hyperlinks, not the document they are nor the document they point to, that is predicted. Therefore, Mladenic does not teach analyzing a document as required by the claims.

Requester notes that while Mladenic does teach identifying properties of a document by analyzing the hyperlink pointing to the document, Mladenic also teaches that one could identify properties of a document by analyzing the document itself instead of its associated hyperlink. (See Mladenic at 10) ("during the learning phase we can afford using more time than when adding advice, so why not retrieving documents behind hyperlinks, instead of using the extended hyperlink representation?) (Emphasis added). Arguing that Mladenic also explains that other versions of the WebWatcher system identify document properties by analyzing the document itself rather than just analyzing the hyperlink pointing to the document. (See *Id.*, at 4) ("[S]ome later versions of the WebWatcher system changes slightly the way of constructing text for learning, e.g. adding words in the document related behind the hyperlink.") (emphasis added). Requester finally concludes that because of the above, Mladenic discloses analyzing a document itself to identify properties of the document.

Examiner agrees with the Requester and notes that the Patentee is arguing that Mladenic does not analyzes a document, because the hyperlink to the document is already seen by the user in the course of his/her interaction with data. In other words arguing that the claim requires that not only the document but also the hyperlink to the document must be 'unseen', in order to satisfy the claim language. But this is a false assumption that the hyperlink behind the document must not be seen in order for the document to be 'unseen'. As discussed *above* in previous response to the patentee's argument, the specification of the '040 patent does not function this way. See for example the portion that recites; "**As a user views a document (step 210), the document is parsed and analyzed (212) to locate hyperlinks to other documents. The linked documents are located in step 214 (but not shown to the user), and evaluated with the User**

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**Model (214) to estimate the user's interest in each of the linked documents**". [Underlining and **Bold** are provided] *Id.*, '040 patent at col. 29, lines 46-51. Examiner noted that in relating this portion to steps (d) and (e) of the claim language, the system of the '040 patent, first parses and analyzes the document (step 212) that is being viewed by the user (steps 210), the linked documents are located (step 214). The "unseen document" comes after the user has seen the hyperlinks. In other words the "unseen" or "not shown to the user", refers to the document that their hyperlink are seen or viewed by the user. Therefore neither the Patentee nor declarant can argue that the hyperlink behind the document must not be seen in order for the document to be "unseen", as this argument the opposite to what is disclosed in the specification of the '040 patent.

For the reasons explained *above*, Mladenec discloses "analyzing a document to identify properties of the document" as argued by the Patent Owner.

The Patent owner at page 8, arguing that Mladenec does not teach the claimed feature of "estimating a probability  $p(u/d)$  that an unseen document  $d$  is of interest to the user  $u$ , wherein the probability  $p(u/d)$  is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model". Relying on para. 11 of Dec. of Nicholas, arguing that it is the interestingness of the hyperlink, not the document they are on nor the document they point to, that is predicted. In short, arguing that "prediction" of interestingness does not constitute "estimating a probability" of interestingness. *Id.*, at page 8.

Requester in his response states that there is no support for this argument. Arguing that "Estimating a probability" was construed in the Pending Litigation as approximately or roughly calculating a numerical degree of belief or likelihood" and Mladenec discloses that its "prediction" of document interestingness is a numerical calculation of document interestingness. For example, Mladenec describes its prediction of interestingness in explicitly numerical terms, stating that "a limited number of hyperlinks that are scored above some threshold are recommended to the user, indicating their scores using graphical symbols placed around each advised hyperlink," (*Id.* at 7- 8.) Mladenec further lists, in Table 2, the "probability of interestingness" of certain exemplar documents:

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UserId and data source	probability of interestingness	number of examples	data entropy
usr150101			
Doc	0.094	1 333	0.449
HL	0.104	2 528	0.480
usr150202			
Doc	0.107	3 415	0.492
HL	0.053	4 798	0.301
usr150211			
Doc	0.089	2 038	0.436
HL	0.044	2 221	0.259
usr150302			
Doc	0.100	1 272	0.468
HL	0.100	2 498	0.468

Table 2: Data characteristics for document (Doc) and hyperlink (HL) data for each of the four HomeNet users.

Examiner notes that even if the Patent owner's argument is valid, i.e., that Table 2 is experimental, it would not take undue experimentation to make and use the system of Mladenic to operate the way experiment is performing. Examiner also notes that, it is irrelevant that the user has seen the hyperlinks related to the unseen document since as described *above* and from the cited portion at col. 29, lines 41-60, this is how the system of '040 patent is also functioning. Important here is that the document behind the hyperlink and not the link itself be 'unseen' and that is taught by Mladenic.

The Patent Owner in footnote at the bottom of page 8 arguing that Mladenic does not estimate a single probability of document interestingness as required by the claim because Table 2 has two probability. Requester in response cites to *Baldwin Graphics Sys. Inc. vs. Sibert, Inc.* 512 F.3d 1338 (Fed. Cir. 2008) ("That 'a' or 'an' can means 'one or more' is best described as a rule, rather than as a presumption or even a convention. The exception to the rule is extremely limited..."). Requester further notes that even if the '040 patent *does* require estimating a *single* probability of document interestingness, Mladenic's technique will still yield a single estimated probability of document interestingness in the normal situation where each hyperlink on a given page points to a different document. Arguing that it is irrelevant that Mladenic's technique could



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yield two different probabilities on interestingness in an unusual edge case where two different hyperlink both points to the same document.

The Examiner agrees with the Requester and notes that even if the '04 patent does require estimating a single probability of document interestingness, the Mladenic's technique will yield a single estimated probability of document in the normal situation where each hyperlink on a given page points to a different document. Even if the probability of the hyperlink point to the same document that its probability is estimated in an experimental setting, the system can be set to estimate a single probability of document behind the hyperlink as it is pointed by Mladenic that state:

“so why not retrieving documents behind hyperlinks, instead of using the extended hyperlink representation? In that case, we can learn the model of user interests directly from documents whose interestingness we are trying to predict” [Underlining provided] *Id.* pg. 10-11.

As understood the document is retrieved instead of the extended hyperlink and not in addition to the extended hyperlink and as such, a single probability would be estimated.

Response to argument that:

### **II. C. Mladenic's Table 2 Does Not Demonstrate PWW Estimating a Probability that an Unseen Document is of Interest to a User.**

The Patent Owner at page 9 contends that Table 2 does not demonstrate that PWW estimate a probability that an unseen document is of interest to the user. Relying on Decl. of Nicholas at para. 13, arguing that the “Table 2 is reporting nothing more than characteristics of the data that were used to train and evaluate the two user models.” The Patent owner arguing that “hyperlinks are deemed interesting if and only if the user has already seen the document to which they point”, *Id.*, at p. 8.

Requester notes that Table 2 explicitly lists the “probability of interestingness” for “Doc” and “HL,” and Mladenic explains that Doc and HL are exemplar sets of documents and hyperlinks that were used to test the effectiveness of Mladenic algorithm. (*See* Mladenic at 12)(“We tested both algorithm on data for documents behind hyperlinks  $User_{DOC}$  and data for

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hyperlink User<sub>HL</sub>”) Requester concludes that Table 2 shows the probability that those documents and hyperlinks are of interest to the four users listed in Table 2.

Requester also notes that the fact that the probability of the User<sub>DOC</sub> documents is determined in an experimental setting is irrelevant. The experiments described in Section 5 of Mladenic, whose results are memorialized in Table 2, are experiments showing how the system of Mladenic operates. Table 2, shows the “probability of interestingness” for document.

The Examiner notes that Patent Owner is mischaracterizing the Mladenic’s teaching. Mladenic, during learning phase, gathers information about a user to generate model of the user’s interest. This model generation is normally performed “off-line” during night because it is not so critical in time. *See* Mladenic’s “LEARNER” at, p. 9 and 10. As part of learning phase, hyperlinks on a document currently viewed by the user are collected and interestingness of the document behind hyperlinks (not seen) is evaluated. *See* Mladenic at p. 10. Examiner also notes that in section 4.2, which describes the “Model of User Interests”, Mladenic referring to “hyperlink[s] on the HTML-document requested by the user.” Meaning that hyperlink[s] that are viewed, but documents behind them are not seen by the user. The Patent Owner erroneously referring to particular a particular hyperlink associated with the document user is viewing and this is not correct because, Mladenic specifically referring to “hyperlinks on the HTML-document.” The patent Owner arguing that hyperlinks are deemed interesting if and only if the user has already seen the document to which they point and this is not what an ordinary skill in the art would understand from the statement “hyperlink[s] on the HTML-document requested by the user.”

Even if the Patent owner’s argument is true, i.e., as part of the learning phase “LEARNER” only analyzes hyperlink associated with the user’s page being viewed (which is not true), Mladenic still is capable of capturing information related to the documents behind hyperlinks on the document the user is viewing, since he explicitly indicates that during learning phase this function is being performed instead of capturing information related to the hyperlink alone.

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The Patent Owner and declarant Nicholas argues that the” probability of interestingness” “ appears to be the probability of positive class values (presumably, the number of selected links in view of the total number of possible links which could have been selected in all of the available documents) in the data sets used to train and evaluate the HL or Doc models. That is, it is a report concerning the actual user behavior (clicked a link or not).” Declarant finally concludes that; “Such a statistic says nothing about the ability of PWW to estimate the interestingness of an unseen document to a user.”

The Examiner notes that this is just declarant’s opinion and is at odd with what is disclosed by Mladenic’s. Mladenic specifically teaches that “we tested both algorithm on data behind hyperlinks  $User_{DOC}$  and data hyperlinks  $User_{HL}$  (see section 4.2). Document are currently represented using the bag-of-words approach (see section 3.1)” Looking at section 3.1, he teaches about words in a sentence and frequency of words used in a sentence for probability calculation. Therefore, arguing that Mladenic describes that PWW on the basis a link being “clicked or not” makes no sense.

Response to argument that:

**II. D. Because Mladenic Does Not Teach Estimating a Posterior Probability  $P(u/d, q)$  that a Document,  $d$ , is of Interest to a User,  $u$ , Given a Query,  $q$ , Mladenic Cannot Anticipate Claim 11.**

The Patent Owner contends that Mladenic cannot anticipate claim 11 because “Mladenic describes no query”

Requester at page 6 states that the Patent Owner in the same paragraph, admits that Mladenic does describe using search queries in the WebWatcher system, the predecessor to the Personal Web Watcher system that is the primary focus of the Mladenic reference, (*Id.*) Requester further states that the Patent Owner’s position also contradicts its prior position in this very reexamination. Arguing that the Patent Owner in response to the first non final Office action dated July 27, 2011, argued that Culliss reference is duplicate of Mladenic with respect to claim 11 because “Mladenic already describes returning search results in response to a query and highlighting links in those search results.” (*Id.*, at 14).

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The Examiner agrees with Requester and notes that Mladenec states:

“The idea is that the user provides a few keywords describing a search goal and WebWatcher highlights related hyperlinks on the current page and/or adds new hyperlinks to the current page.” *Id.*, at P. 2

What is understood from this portion is that the user uses a few keyword describing a search, and WebWatcher that the PWW is based upon highlights related hyperlinks on the current page which is normally is called a “query”. A person of ordinary skill in the art does not need to modify PWW to function as WebWatcher, because the PWW is based on WebWatcher.

Examiner notes that even if Mladenec does not teach “query”, as noted by the Patent owner claim 11 is made obvious over Mladenec in view of Culliss applying Culliss' personalized list of articles in response to user queries to Mladenec's Personal WebWatcher would have been obvious to one skilled in the art, and it would have been just as feasible (and obvious) to use Personal WebWatcher to analyze a pool of search results generated in response to a user query.

Response to argument that:

**II. E. Because Culliss does not Cure the Deficiencies of Mladenec with Respect to Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Claims 11, 22 and 34 Remain Patentable Over the Combination of Mladenec and Culliss.**

The Patent Owner at pages 12-13 contends that Culliss does not render obvious claims 11, 22 and 34 because, Culliss does not disclose “estimating a probability” limitation of independent claims 1 and 32 (from which all other claims depends).

Requester at page 7, notes that Culliss **does** meet all the limitation of independent claims 1 and 32, in the discussion of Culliss as a primary reference. Arguing that even if it did not, claim 11 still would be obvious over Mladenec in view of Culliss because Mladenec discloses all the elements of independent claims. Arguing that the Patent Owner does not dispute that, if Mladenec is found to disclose all the elements of independent claim 1, Culliss could supply the “query” limitation of dependent claim 11. Thus, regardless of whether Culliss anticipates claim 1, claim 11 is obvious over Mladenec in view of Culliss.

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Examiner agrees with the Requester. Additionally Examiner notes that Culliss discloses the limitation “estimating probability  $p(u/d)$  that an unseen document ...defined by the User Model” argued by the Patent owner. *See* for example, Culliss discloses that, when a user enters a search request, the search request and the user's personal data are combined to form various groupings: key term groupings, category and personal data groupings, etc. *Id.*, Culliss at 5:40-45. Based on these groupings, the system determines how relevant a given document  $d$  is to the searching user  $u$ , which is a "probability" under Patent owner's proposed construction. Culliss also discloses that: "Articles associated with these groupings are then retrieved from the index, and their relevancy scores are used or combined to determine their rankings." *Id.*, Culliss at 5:45-48.

Additionally, the Patent Owner does not provide any explanation as to why relevancy scores are not "estimated probabilities," especially given the broad interpretation of "probability" the Patent Owner has offered in the litigation. Moreover, the Patent Owner's arguments thus runs counter to its claim construction position in the co-pending litigation, where it asserts that a probability is merely "a degree of belief or likelihood" in an attempt to ensnare products that do not calculate actual probabilities. (OTH-B 23.) The patent owner presents no argument for why the computed relevancy score is not "a degree of belief or likelihood," beyond a bare assertion. *Innova/Pure Water v. Safari Water Filtration*, 381 F.3d at 1117 (Fed. Cir. 2004).

The Patent Owner in specific arguing that in the '040 patent  $P(u/d)$  is specifically defined as “the user interest in the document *regardless of the current information used*”. *Id.*, response at page 12. The Patent Owner concludes that the probability must be defined without reference to a query (the query being indicative of an information need.) The Patent Owner arguing that in contrast the system described in Culliss only after a user enters a search query does the personal data that the system has stored about the user become combined with the query, and the revised query used to retrieve personalized search results. *Id.*, response, at page 13

Examiner does not agree with the Patent Owner's argument and finds the argument unpersuasive for several reasons. First, the statement that “the user interest in the document *regardless of the current information used*”, does not mean **without** need for current

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information used, as the term regardless means “with no regard”, rather than “without”.

Examiner notes that in the same column for example, posterior  $P(u/q, d)$  is defined as the event that a document  $d$  is of interest to a user  $u$  having an information need  $q$ . Clearly indicates that it is defined as probability of the event that a document is of interest to a user  $u$  **with** information need  $q$ . Here however, with respect to  $P(u/d)$  the specification use the term “regardless”, meaning it could be **with** or **without** the current information need.

Second, as noted in the ‘040 patent the user model is continually updated. See for example the specification of the ‘040 patent states:

“The User Model 13, with its associated representations, is an implementation of a learning machine. As defined in the art, a learning machine contains tunable parameters that are altered based on past experience. Personal Web 12 stores parameters that define a User Model 13 for each user, and the parameters are continually updated based on monitored user interactions while the user is engaged in normal use of a computer. While a specific embodiment of the learning machine is discussed below, it is to be understood that any model that is a learning machine is within the scope of the present invention.”  
*Id.*, col. 8, lines 43-53

With the broadest reasonable interpretation the User Model is continually updated while the user is engaged in normal use of the computer. This is similar to Culliss’s updating the personal data continually in order to keep up with the change in the user’s interest. See for example, Culliss states:

“For example, whenever there is a match (whole or partial) between a search request or URL and an item of personal data, a record for the user can be updated to give a +1 for that item of personal data.” *Id.*, col. 4, lines., 61-64.

“When the next user enters a search request, the search request and the user’s personal data are combined to form groupings containing key term groupings, key terms and personal data groupings, category and personal data groupings, rating and personal data groupings, etc. Articles associated with these groupings are then retrieved from the index, and their relevancy scores are used or combined to determine their rankings “

For example, as illustrated in FIG. 1, if a first user enters a search request at step 10 of Alpha and has personal data characteristics of PS1 and PS5, then the request can be combined in step 20 with the personal data to form the following groupings: Alpha-PS1 and Alpha-PS5. In addition, other groupings or permutations such as PS1-PS5 and Alpha-PS1-PS5 are also possible and can be stored within the index. These groupings are stored within the index and the relevancy scores of selected articles are updated at step 30 according to methods described in my previous applications. To initially retrieve articles for presentation to the first user using a conventional search engine, just the key term

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'Alpha' can be used as a key term to pull articles from within an index.” Id., Culliss at col. 5, lines 41-62.

In Culliss as part of updating the personal data, the search request is combined to form grouping. There are different groupings as described by Culliss. Important here is that the personal data is updated before grouping and before forming relevancy scores are determined. As such, Culliss also continually updates personal data while the user is engaged with the normal use of the computer. Updating personal data, very similar to continually updating of User Model described in the '040 patent.

Third, independent claim 1 and 32, step (b) “updating user-specific data files,...” happens before, step (e) “estimating a probability  $P(u/d)$  that an unseen ...”, and as a result step (b) must be satisfied before step (e). Accordingly, user specific data files (monitored user interactions while the user is engaged in normal use of a computer, See '040 patent at col. 8, lines 43+) which are stored and updated, and then revised to get the parameters of the learning machine are used to estimate the user's interest. The specification and claims in the '040 patent, first user model is updated and then the user's interest is estimated, the user's interest is estimated with or without reference to a query (or information need as worded by the patentee).

Same way in Culliss the user first interacts with the data during normal use of the computer and then the personal data is constructed and stored and updated and then relevancy scores (estimating probability) is determined. Therefore, the Patent owner and declarant's argument is not persuasive, because, even in '040 patent, only after a search query (the user first has to enter a query) is entered and the system stores the User Model combined with the query, and user's interest is estimated. Accordingly, the combination of Mladenic and Culliss **does** teach the limitation “estimating a probability  $p(u/d)$  that an unseen ....” required by claims 1 and 32.

The Patent Owner at page 13 contends that Culliss' reliance on the existence of a query is a reason that one of the ordinary skill in the art would not combine its teaching with those of Mladenic. Arguing that Culliss uses search queries while Mladenic does not.

Requester at page 7 of his comments that first, Mladenic discloses search queries in its discussion of the WebWatcher system, as discussed earlier. Second, the Patent Owner has admitted that "Mladenic already describes returning search results in response to a quarry and

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highlighting links in those search results." (Response to Initial Office Action at 14). "[both Mladenic and Culliss are in the same field of providing personalized information services to Internet users." Thus, even if the Patent Owner were correct that Culliss uses queries while Mladenic does not, the fact that these two references occupy the same technological field means that one of skill in the art would have been motivated and able to combine their teachings.

Examiner notes that it appears that the Patent Owner in his 'teach away' argument once again arguing about undesirability of a method in prior art. Arguing that since the Mladenic's teaching is not desirable, therefore it teaches away an artisan from making and using the PWW. The argument of 'teach away' presented by patentee and declarant does not raise to the standard of 'teach away' argument. As noted before, to teach away, a reference must generally suggest that a proposed modification of a reference (or combination) would be non-operative or actively discourage the modification. MPEP 2145.D. 1. Simply stating that one method/system is preferred over another, or that a method/system has challenges at the time, is not sufficient to teach away. *In re Gurley*, 27 F.3d 551,554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). Nevertheless, the Patent Owner presented no evidence that the cited art, as viewed by the person of ordinary skill in the art, teaches away from the claims, and the interpretation of the art by its attorneys alone must be rejected. MPEP § 2145.I The Patent owner's teach away argument is mere related to the disadvantage of WebWatcher, but not inoperability of determining hyperlink of interest or interestingness of document behind hyperlink taught by Mladenic.

Additionally as noted by the Requester, Mladenic discloses search queries as a indispensable part of the WebWatcher and as a person of ordinary skill in the art would understand that in order to highlight link in search result one must have search query to be able to modify the search result and as such, even if Culliss finds that search query is undesirable, the combination of Mladenic with Culliss teaches the posterior probability that the document d is of interest to the user u, given a query q submitted by the user.

Response to argument that:

**II. F. Because Refuah does not Cure the Deficiencies of Mladenic with Respect to Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Claim 21 Remains Patentable Over the Combination of Mladenic and Refuah.**



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The Patent Owner at page 14 contends that Refuah does not estimate probabilities or interestingness. Arguing that Refuah uses ‘persona’ and ‘mood’ but not probabilities. The Patent Owner argues that Refuah may be said to qualify a query based on a ‘persona’ or ‘mood’, but this necessarily produces results that are query-dependent. Arguing that query-dependent results are incongruent with estimating the probability  $P(u/d)$  as recited in the claims. The Patent Owner further argues that in Refuah there is no learning machine

Requester at page 7 comments that the Patent Owner only concludes that claim 21 is obvious over Refuah and argues that Refuah does not teach the “estimating probability” limitation of independent claim 1. Arguing that, the Patent Owner’s argument is irrelevant because, Mladenic discloses all the elements of claim 1. Arguing that, Refuah also discloses all the elements of claim 1, as explained *infra* in the discussion of Refuah as a primary reference.

The examiner notes that Patent Owner’s argument is unpersuasive. First with respect to the differences between “persona and mood” and “probability” argument, Examiner notes that while Refuah does not use the word “probability”, he uses the same concept within the context of the invention disclosed in the ‘040 patent. For example he uses a grading system to match the grades with user’s personality. See for example he states:

“analyzing each of said sites to determine a match with said virtual personality, which is a complex of characteristics that distinguishes an electronic person, for the purpose of interacting with an Internet; and

grading said sites responsive to said analysis.

Preferably, providing a list comprises executing a search on an Internet search engine to provide said list. Alternatively or additionally, providing a list comprises retrieving a plurality of matches from a name server. Alternatively or additionally,

analyzing comprises analyzing at least one of said sites responsive to a presented ambiance. Alternatively or additionally, analyzing comprises analyzing at least one of said sites responsive to a presented trait. Alternatively or additionally, analyzing comprises

analyzing a content of at least one of said sites. Alternatively or additionally, the method comprises displaying said graded list. Alternatively or additionally, the method comprises displaying only a highest graded site of said list.” *Id.*, at col. 11, liners 14-31

As such in Refuah, sites are graded according to how well they match the user’s personality and only the highest-graded sites might be displayed to the user. In short Refuah

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provides a grade of how well a site matches a user's personality and this reads on the definition of "probability" construed by the Patent Owner, that the "probability" is estimating or roughly calculating a numerical degree of belief or likelihood" (Markman Order at 2)<sup>1</sup>. The Patent Owner relying on declaration of Nicholas arguing that the results in Refuah are query dependent. However, the claim does not say that the results must be query independent. Element (e) in claim 1, requires that probability of an unseen document be calculated and the "probability" is estimated by applying the properties of the document to the learning machine. Here in Refuah, the site queries are related to unseen document and that meets the claim language that the document be 'unseen'. It does not say the probability of unseen document and the document must be query independent.

The Patent Owner relying on declaration of Nicholas further arguing that; "[t]he ACP misses the point. It is the application of the identified properties of a retrieved document to the user-specific learning machine that is used to estimate a probability. There is no learning machine in Refuah in order to which to apply the identified properties of the retrieved document, and therefore Refuah's approach cannot be said to be that recited in the present claims." *Id.*, at page 14.

This argument is unpersuasive. Examiner notes that in the '040 patent, the parameters of a learning machine is defined or comprised of a weighted word map that shows how strongly certain data documents (e.g., words) are associated with the user. Refuah's persona parameters work precisely the same fashion. They include key-word evaluation which are parameters of persona which are weight information as a relative preference of subjects of interest. *Id.*, Refuah, at page 17, lines 39-41. As such, Refuah discloses a learning machine in the context of the '040 patent.

The Patent Owner, arguing that in Refuah, a site is evaluated in view of a particular persona, a snapshot view of a user's current interest (e.g., a query-defined interest). *Id.*, at page 15. However, as stated before, the claim requires that the document be 'unseen', but does not require that the link to the document must also be 'unseen'. As discussed *above*, even in the

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<sup>1</sup> The Markman Order from the Pending Litigation was filed in the public record as Docket Number 348 in the case if *Personalized User Model, LLP v. Google Inc.*, Case No. 1:09cv00525-LPS (D. Del.).

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specification of the '040 patent, links to 'unseen' document is seen. *Id.*, '040 patent at col. 29, lines 46-51.

Patent Owner further arguing that a website in Refuah is different than document and evaluating a website is different that "analyzing a document", and finally evaluation of suitability by Refuah is not equivalent to the estimation of probability as recited in the claims. *Id.*, at pages 15-16. The Examiner notes that the Patent Owner does not make clear as to why the web site does not qualify as document and bases his argument on a false assumption that website is not equivalent to document. As for the definition of document the '040 patent states: "[t]he term document includes not just text, but any type of media, including but not limited to, hypertext, spreadsheet, image, sound, and video..." *Id.*, '040, at col. 9, lines 14-71. Website clearly qualify as "document" under the broad definition of the term in the '040 patent and the website in Refuah, qualify as document in the '040 patent and evaluating a website is in fact analyzing document in the context of the '040 patent. As a result evaluation of suitability as taught by Refuah is equivalent to the estimation of probability as recited in the claims.

Response to argument that:

**II. G. Because Yang does not Cure the Deficiencies of Mladenic with Respect to Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Claims 1, 11, 32 and 34 Remain Patentable Over the Combination of Mladenic and Yang.**

The Patent Owner contends that Yang does not teach the "estimating probability" limitation of independent claims 1 and 32. Arguing that in the rejection of claims over Mladenic over Yang, there is no explanation as to what the resulting combination of these combined teaching would be. The Examiner notes that in the ACP and the rejection of claims over Mladenic over Yang, it is clearly explained that Yang is used for the teaching of "estimating a probability" limitation of the claim, which according to Mladenic is a variant of the k-Nearest Neighbor, and the reason it is combined with Mladenic is to show a relevant learning algorithm in the art. A person of ordinary skill in the art would understand that one can calculate relevance of document and ranking score similar to probability as noted by the Patent Owner in his arguments. *Id.* Response, Footnote 20 at page 17, the Patent Owner argues that "[s]imply

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because two procedures may provide similar outcomes does not mean that one of ordinary skill in the art would be inclined to substitute one for the other.” Arguing that, a person of ordinary skill in the art may not seek to adjust the explicit teachings regarding the use of cosine values because there is no need to do so. The Examiner notes that to the contrary a person of ordinary skill in the art would have ample motivation to do so because it would provide him with data associated with calculation time and comparison for the efficiency of the two methods.

The Patent Owner contends that the Yang’s “formulation of score for a request” is not the same as “estimating probability” in the claims. Arguing that, Yang describes its relevance score as “a cosine value, not a probability.” *Id.*, response at page 17.

The Requester responds that the Yang’s “cosine value” used to measure document relevance, represents the cosine of the document vectors. Arguing that Yang determines documents relevance by determining how similar document vectors are. For example he teaches; “We use the conventional similarity measurement, that is, the cosine value of the vectorized request and document...” Requester referring to the ‘040 specification arguing that even in the ‘040 patent itself acknowledges that measuring the vector distance between two items is one way of estimating the “probability” that those items are related. As an example the ‘040 discloses that; “a cluster probability distribution representing similarity of the user to users in various clusters” (*Id.*, ‘040 at col. 5, lines 6-7), and this cluster probability distribution is determined by measuring the distance between users. See ‘040 patent at col. 5, lines 27-28 states; “[D]istance between users are calculated to determine similar users, who are clustered into clusters of similar users”. Also Immediately after the ‘040 patent discloses the distance-measuring metrics, it states: “A number of other probabilities can be calculated ...” *Id.*, at col. 5, line 34. Requester concludes that even the ‘040 patent itself uses distance metrics as a means of estimating probability and as such, Yang’s vector-space measurements qualify as “estimating a probability” within the meaning of the .040 patent.

Examiner concurs with the Requester’s response and notes that the Patent Owner while admitting that the outcomes between cosine method and probability are similar, arguing that the methods are necessarily different. However, this argument is erroneous because, not only the outcomes are similar, but the methods are also similar, within the meaning of “estimating a probability” accepted by the Patent Owner, that it is; “probability” is defined as estimating or

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roughly calculating a numerical degree of belief or likelihood. The Patent Owner provides no reasoning as to why the “formulation of a score for a request” does not mean “estimating a probability” in the context of the ‘040 patent specification.

## **2. Response to Rejections Based on Primary reference *Wasfi***

Response to argument that:

### **III. A. *Wasfi* Teaches a Recommendation System Intended to React to Perceived changes in a User's Interests and to Make Recommendations for Web Pages at a Single Web Site Using Separate Content-Based and Collaborative Filters.**

The Patent Owner at pages 17 through 18 with respect to *Wasfi*, contends that *Wasfi* does not anticipate claims. The Patent Owner relying on Nicholas declaration describing how *Wasfi* operates, focusing on separate and isolated statements of *Wasfi*'s without considering the whole document and at the end does not make it clear as to what is taught or not taught by *Wasfi* that makes the method different to the method disclosed in the ‘040 patent. For example the Patent Owner in describing *Wasfi* states: “[B]ecause this entropy is a measure of unexpectedness, the more different a current page is from page previously visited by the user, the better measure it is (according to *Wasfi*) of a change in the user's interest, hence, the greater effect it is given in updating the user model.” *Id.*, at page 18. Then the Patent Owner in Footnote 23 at the bottom of page 18, states:

“<sup>23</sup> In fact, because of this characteristic *Wasfi*'s approach is subject to several shortcomings, imagine, for example, a user arriving at a site for which no prior-user browsing history exists. *Wasfi*'s methods are unable to provide any recommendations for our user because there is no basis for updating the user model as the user starts browsing the site. Indeed, in such circumstances, *Wasfi* is forced to assume that  $p$  is proportional to  $n_i/N$ , where  $n_i$  is the occurrence frequency of a page and  $N$  is the total number of page visits; thus, user model updates become nothing more than weighted page frequencies.” *Id.*, Footnote 23.

Requester at page 9 comments that much of the Patent Owner's discussion of *Wasfi* is devoted to arguing *Wasfi*'s collaborative method. Arguing that the Patent Owner did not argue and the ACP did not find, that *Wasfi*'s collaborative method anticipates any claims of the ‘040

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patent. Rather, Requestor argued that Wasfi's content-based method anticipates '040 claim 1, 21, 22, and 32. Examiner notes that Wasfi, has separate and distinct discussion about content-based filtering and collaborative filtering and the two must not be mixed as the Patent Owner has tried to do so. The exemplary situation argued by the Patent Owner is specific to collaborative filtering which would not happen if content-based filtering is utilized and as such, the Patent Owner's argument is not valid.

Response to argument that:

**III.B. Because Wasfi Does Not Teach Estimating Parameters of a Learning Machine that Define a User Model Specific to the User and which are Estimated From User-Specific Data Files, Wasfi Cannot Anticipate Claims 1, 21, 22 and 32.**

The Patent Owner at page 19, contends Wasfi, fails to teach "estimating a probability  $P(u/d)$  that an unseen document  $d$  is of interest to the user  $u$ ". Arguing that in Wasfi, the user preference is from the retrieved pages and is based on their probability, which are obtained from collecting visiting patterns of past users. Relying on paragraph 15 of Nicholas declaration and arguing that; "[N]o application of page properties to any user model is made in order to derive these probabilities. Instead, Wasfi's ProfBuilder system merely takes the current page that a user is at, consult a frequency model of which pages other users visited next, and present the top-frequency pages for consideration by the current user." The Patent Owner finally concludes that the collaborative filtering process described by Wasfi cannot anticipate the present claims.

Examiner notes that once again the Patent Owner is referring to the collaborative filtering part of the Wasfi, and do not acknowledges that there are two types of separate and distinct filtering model in Wasfi's teaching. *See* for example Wasfi mention content-based filtering at page 57 (L. col. under the Title-Keywords), at page 60 (R. Col., third para.), at page 61 (L. col. line 34, and R. col. under the Title-Content-based Filtering), at page 62 (L. col. under the Title-Letizia), at page 63, (L. col. line 1, and line 16), and finally, at page 63 (R. col., third paragraph).

The content-based filtering is a method of filtering which is separate and distinct from collaborative filtering that does not rely on pages other users have accessed before. Wasfi is very clear when he explains that content-based filtering provides; "finding pages that are similar to the

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profile, and selecting the top-scoring pages for presentation to the user”. *Id.*, at page 61, R. col. 2<sup>nd</sup> complete para. This is distinct and separate from collaborative filtering described as; “[T]he filtering process is based on the following hypothesis: making available the work of a large number of past users can be useful to find out...” The Examiner reiterates that the ACP did not find that, Wasfi’s collaborative method anticipates any claims of the ‘040 patent, rather the ACP finds that, Wasfi’s content-based method anticipates ‘040 claim 1, 21, 22, and 32. For that reason alone the Examiner notes that the Patent owner’s argument and declarant Nicholas’s opinion are erroneous and unpersuasive.

The patent owner at page 20 with regards to content-based filtering acknowledges that Wasfi describes determining a similarity between a page (represented by Vector  $D_i$ ) and the user (Represented by a vector  $Q_i$ ). The Patent owner further acknowledges that Wasfi’s comparison of page vectors to the user vector is used to present a ranked order of the pages that are most likely to be of interest to the user. However, the Patent Owner argues that determining vector similarity between a page and a user is not the same as “estimating probability” that the page is of interest to the user or not. Arguing that probability have absolute meaning within a defined range. *Id.*, at page 20.

Requester at page 10 comments that there is no merit to the Patent Owner’s position that the user vector is different from “estimating probability” that the document is of interest to the user and contends that Wasfi’s vector-space model is a means for estimating probability that a document is of interest to the user ... a smaller distance between document and user vectors means that a greater probability that the document is interesting to the user, while a larger distance means a lesser probability that the document is interesting to the user.

Requester once again notes that even the ‘040 patent acknowledges that measuring the vector distance between two items is one way of estimating the "probability" that those items are related. For example, the '040 Patent discloses "a cluster probability distribution representing similarity of the user to users in various clusters" (*Id.* at 5:6-7), and this cluster probability distribution is determined by measuring the distances between users. (See *Id.* at 5:27-28 ("Distances between users are calculated to determine similar users, who are clustered into

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clusters of similar users"). Thus, the '040 Patent itself uses distance metrics as a means of estimating probabilities.

Examiner notes that the Patent owner's argument is erroneous because determining vector similarity between a page and a user reads on the definition of the "estimating probability" and is based on the broad definition of "probability" admitted and construed by the Patent Owner, that the "probability" is estimating or roughly calculating a numerical degree of belief or likelihood" (Markman Order at 2)<sup>2</sup>. Important here is that as noted by the Requester this construction does not put any limitation on **how** the numerical calculation of belief or likelihood is made. Additionally Examiner notes that even the claims recite "estimating probability" which is "estimating" or "roughly calculating" numerical degree of likelihood. In other words, measuring the vector distance between two items is in fact a way of estimating "probability" (in the context of the term in the '040 patent) that those items are related and it is bounded.

Moreover, the Examiner agrees with the Requester that Wasfi explicitly states that its vector-distance measurements are a type of probability measurements. *See* for example Wasfi at 58 states;

"we propose a new mechanism that learns user interests and adapts automatically to their changes without user intervention. It relies on **probability distribution** of the page to be accessed and tools derived from classical information theory...the method for profile reformulation in response to the changes of user's interest is based on vector adjustment. Since profiles and pages are both vectors, **the profile should move closer to the vectors representing pages which are relevant and away from the vector [sic] representing pages which are non-relevant.**" [Bold and Underlining provided] *Id.*

The Patent Owner relying on declaration of Nicholas, arguing that the vector scalar product is not a probability, nor is it an estimate of probability, rather an algebraic sum of a series of products of weights  $w$ . The Patent Owner admitting that one can rank pages according to their respective similarity metrics (*Id.*, remarks at page 20, lines 11-16), but arguing that this says nothing about probability because probability have absolute meaning. At Footnote 24 the Patent Owner referring to Yang at page 16 arguing that the relevance score is not probability and it is specifically indicated by Yang.

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<sup>2</sup> The Markman Order from the Pending Litigation was filed in the public record as Docket Number 348 in the case if *Personalized User Model, LLP v. Google Inc.*, Case No. 1:09cv00525-LPS (D. Del.).



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Examiner notes the Patent owner's argument is convoluted and does not match his own definition of probability. First the probability is a measure or estimation of how likely it is that something will happen or that a statement is true. Probabilities are given a value between 0 (0% chance or *will not happen*) and 1 (100% chance or *will happen*). The higher the degree of probability, the more likely the event is to happen, or, in a longer series of samples, the greater the number of times such event is expected to happen. Examiner further notes that, it is true that probability have absolute meaning within a defined range, however, Wasfi's disclosure of vector-space model is a means for estimating probability that a document is of interest to the user, because a smaller distance between document a greater probability that the document is interesting to the user, while a larger distance means a lesser probability that the document is interesting to the user. This is within the meaning of the probability argued by the Patent Owner, because it is absolute meaning and is within a range. The Patent Owner's argument at Footnote 24, is not persuasive because, the Patent Owner once again picking and choosing statements out of their context. Yang, at page 16, in the same paragraph explain that; "[t]he relevance score have the functionality of ranking documents similar to what the probability would do." Meaning that when the score is higher the ranking is higher and the probability of likelihood is higher and, vice versa. Additionally, the claim recite estimating probability and not a particular probability model. The claim also does not exclude any particular probability model and as such this definition reads on the claim language of "estimating probability". The Patent Owner at the bottom of page 20 once again arguing that Wasfi is referring to collaborative filtering, which makes predictions solely on the actions of prior visitors to the subject web site. However, as previously addressed by the Examiner, the Patent Owner ignoring the content-based Filtering described by Wasfi. Accordingly the patent owner's argument is wrong and unpersuasive.

Response to argument that:

**III.C. Because Wasfi Does Not Teach a Learning Machine that Attempts to Improve its Predictive Ability, Wasfi Cannot Anticipate Claims 1, 21, 22 and 32.**

**And**

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**III.D. Because Wasfi Does Not Teach Estimating Parameters of a Learning Machine that Define a User Model Specific to the User and which are Estimated From User-Specific Data Files, Wasfi Cannot Anticipate Claims 1, 21, 22 and 32.**

The Patent Owner at page 21 contends that Wasfi's user profile is not "learning machine" and is not qualified as such because it does not attempt to improve its predictive ability over time. Arguing that: "[T]he vector  $Q_j$ , which is Wasfi's user profile is a set of weighted keywords from documents the user has visited and arguing that such a use model is not one that attempts to improve its predictive ability over time." Arguing that the learning machine recited in the claims "generalizes", meaning to attempts to improve its predictive ability over time. Arguing that, generalization is the ability of a machine learning algorithm to perform accurately on new, unseen example after training on a finite data set. *Id.*

Requester notes that Wasfi's user profile does attempt to improve its predictive ability over time. For example Wasfi at page 58 indicates that; "the method for profile reformulation in response to the changes of user's interest is based on vector adjustment." *Id.* Requester also points to Wasfi's statement that; "A reformulation of vector  $Q_j$  representing the user profile is obtained by taking  $Q_j$  and adding the vector elements  $D_i$  representing page  $s_i$  after it is changed in proportion to  $t_{ij}$ ,

$$Q_j = Q_j + t_{ij} * D_i$$

*i.e.* the weight of each word in  $D_i$  is modified proportional to  $t_{ij}$ . The resulting effect is that, for those words already present in the profile, the word-weights are modified in proportion to  $t_{ij} * d_i$ . Words which are not in the profile are added to it."

Requester further states;

"[L]ike Wasfi, the '040 patent also teaches that the User Model may be updated by adding new keywords to it. For example, Fig. 4A of the '040 patent is a "table[]" that store[s] different components and parameter of the User Model" (*id* at 6:13-14), and these parameters include keywords reflecting the user's interests. (*See* Fig. 4A). Later, in the section entitled "Updating the User Model," the '040 Patent explains that the User Model is updated by parsing documents the user has viewed to determine additional keywords that may be added to the User Model. (*See* 22:64-23:7 ("After a document stored in the recently accessed buffer is parse, parsed portions are stored in candidate tables... The user word candidate table holds the words or phrases that are candidates to more into the user

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informative world list of Fig 4A.") Thus, the user profile of Wasfi and the User Model of the '040 Patent both attempt to improve their predictive ability in part by adding new keywords to reflect the user's changing interests. If the User Model of the '040 Patent qualifies as a "learning machine," then so does the user profile of Wasfi.

"In a footnote, Respondent argues that Wasfi's reformulation of the user profile to better reflect the user's interest does not qualify as "learning" because existing keyword weights in Wasfi's user profile can only increase, not decrease, as the user profile is updated. (Response at 21 fn. 27). This argument fails for two reasons. First, as discussed above, simply adding *new* keywords to Wasfi's user profile (as Wasfi indisputably does) qualifies as "learning" under the '040 Patent's User Model is updated.

Second, regarding Wasfi's modification of existing keyword weight in the user profile, Respondent provides no support for its position that *increasing* keyword weights is not "learning" unless it is accompanied by *decreases* in keyword weights. Indeed, the '040 claims themselves defeat Respondent's position. For example, claim 1 requires estimating parameters of a learning machine based on documents associated with the user, while dependent claim 2 adds the limitation that estimating these parameters is based in part on documents *not* of interest to the user."

Requester further arguing that claim 2 (which is not part of the requested claims of reexamination) covers the situation where a keywords weight in the User Model will decrease if this keyword appears in a document not of interest to the user. Requester states that:

"It logically follows that claim 1 does not require decreasing keyword weights based on documents not of interest to the user, as that would render claim 2 superfluous. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005)(en banc) ("the presence of a dependent claim that adds a particular limitation give rise to a presumption that the limitation in question is not present in the independent claim.")

Requester finally concludes that Wasfi, satisfies the limitation of claim 1 (and analogous to claim 32) even if the keyword weights in Wasfi's user profile only increase, not decrease, as the profile is updated.

Examiner agrees with the requesters comments. In addition Examiner notes that the Patent Owner's argument is unpersuasive for two reasons. First the claims do not say about the goodness of the User Model and that the User Model attempts to improve its predictive ability over time, or perhaps the User Model "generalizes." Second, the specification with respect to the "User Model" states;

"the User Model may be initialized by selecting a set of predetermined parameters of a prototype user selected by the user. Parameters of the prototype user are updated based on actions of users similar to the prototype user. The User Model can be modified based on User Model modification requests provided by the user. In addition, the user can

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temporarily use a User Model that is built from a set of predetermined parameters of a profile selected by the user.” *Id.*, ‘040 patent at col. 5, lines 19-24.

“The User Model 13, with its associated representations, is an implementation of a learning machine. As defined in the art, a learning machine contains tunable parameters that are altered based on past experience. Personal Web 12 stores parameters that define a User Model 13 for each user, and the parameters are continually updated based on monitored user interactions while the user is engaged in normal use of a computer. While a specific embodiment of the learning machine is discussed below, it is to be understood that any model that is a learning machine is within the scope of the present invention.” *Id.*, col. 8, lines 43-53

The specification also with respect to updating of the parameters of the “User Model” states:

“the user word candidates table holds the words or phrases that are candidates to move into the user informative word list of FIG.4A.” *Id.*, ‘040 patent at col. 23, lines 5-7

Similar to the updating the “User Model” in the ‘040 patent, Wasfi also teaches that the profile is updated by the vector adjustment method based on weighted keywords from documents. Accordingly, the method provided by Wasfi with respect to updating user profile is an attempt to improve its ability over time because he uses similar technique and the user profile function same as the “User Model” in the ‘040 patent. As such Wasfi discloses a learning machine in the context of the one disclosed in the ‘040 patent.

The Patent Owner at page 21 through page 22 arguing that Wasfi's "learning mechanism" relies on "probabilities, which are obtained from collecting the visiting patterns of past users." And such visiting patterns are not "user-specific data files" in the sense recited in claims 1 and 32, because they are activities of web site visitors other than the "user" of interest (i.e., the one for whom interestingness of unseen pages is to be determined). Arguing that, Wasfi cannot anticipate claims 1 and 32, or any of their respective dependent claims. The Examiner notes that this argument is repeat of the argument related to collaborative Filtering versus content-based filtering methods of Wasfi, rebutted *above* and will not be responded again.

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**III.E. Because Culliss does not Cure the Deficiencies of Wasfi with Respect to Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Claims 11, 22 and 34 Remain Patentable Over the Combination of Wasfi and Culliss.**

The patent Owner at page 22 with respect to the combination of Wasfi and Culliss presenting argument that Culliss requires the existence of a query in order to produce any results. Absent the query, the Culliss system is unable to estimate any user interest in a document.

Requester at page 14 commenting that this is irrelevant to the conclusion that claims 11, 22, and 34 are obvious over Wasfi in view of Culliss, because Wasfi discloses all the limitation of independent claims 1 and 32. Arguing that also discloses all the elements of claim 1 and 32, as explained in the discussion of Culliss as a primary reference.

Examiner notes that the argument that Culliss requires the existence of a query in order to produce any result was presented earlier in section II.E. with respect to the combination of Mladenic and Culliss, incorporated herein by reference and will not be repeated for brevity.

**3. Response to Rejections Based on Primary reference Refuah**

Response to argument that:

**IV.A. Refuah is not Prior Art under 35 U.S.C. § 102(e)**

The Patent owner at page 23, presenting the same argument that was presented in response to the first Initial office Action, arguing that Refuah is not prior art under 35 U.S.C. § 102(e), because Refi.mh cannot claim priority under Section 102(e) to the filing date of its PCT application and the filing date of Refuah's nominal stage application was after the invention date of the '040 Patent. *Id.*

As responded in the ACP, the Examiner notes that while Refuah is not prior art under 35 USC 102(e) however, since it's PCT publication date is August 5, 1995, it is prior art under 35 USC 102(a) as acknowledges by the Patent Owner (responded in his Remarks) therefore, can be used in an anticipatory rejection. The reason is that a Subject matter that qualifies as anticipatory prior art under 35 U.S.C. 102 is not affected, and may still be used to reject claims as being

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anticipated. The Examiner also notes that the PCT disclosure word for word covers all the subject matter disclosed in the US application. Additionally, the Patent Owner has responded in his Remarks to the anticipatory rejection of claims under 35 USC 102(a) in his Response to the Initial Office Action dated 5/27/2011.

Response to argument that:

**IV.B. Because Refuah Does Not Teach Estimating Parameters of a Learning Machine, Claims 1 and 32 and Their Respective Dependent Claims Are Not Anticipated by Refuah.**

The Patent Owner at page 23 commenting that on the face of the Refuah patent nowhere does Refuah disclose “learning,” “learning machine,” “probability,” or “estimating probability.” Arguing that teaches a “binary” evaluation in which web sites are judged to wither match the user’s personality or not. Arguing that, a binary, all-or-nothing evaluation is different from “estimating a probability” because it does not evaluate the degree of belief that a site is of interest to a user. Arguing that estimating a in the claimed invention requires a numerical degree of belief, which is not taught by Refuah.

Requester at page 16, contends that the Patent Owner’s position that Refuah makes a purely binary decision of whether or not a site matches a user personality is false. Arguing that, Refuah provides a grade of how well a site matches a user's personality. For example Refuah at col. 7, line 67 to col. 8, line 3 states; “a site may include an identification number, which when used with a proper trait server, provides information about the sites traits and/or a match and/or grade with particular personality.” Arguing that Refuah at col. 11, lines 10-31 discloses that sites are graded according to how well they match the user’s personality and only the highest-graded site might be displayed to the user. The grade that a given site is given with respect to the user's personality is the estimated probability that the site is of interest to the user --- a higher grade means a greater probability that the site is of interest to the user, and vice versa.

Examiner notes that the Patent owner’s argument is not persuasive. Refuah discloses that “[i]n the evaluation technique, a site is evaluated for suitability and/or qualities which are preferred and/or match a particular persona.” (Refuah at 17:44-46.) This constitutes

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"approximating or roughly calculating the degree of belief or likelihood that an unseen document is of interest to the user," the construction the Patent Owner has offered for "estimating a probability". The Patent Owner has not provided any reasoning as to why when a site is evaluated for qualities that are preferred to a particular persona, is not a good example of estimating probability. "Probability" is the quality or state of being probable and estimating is a tentative estimation or rough calculation and with all accounts, evaluation of a site for qualities that are preferred to a particular persona is a rough way of calculating that a document is of interest to a user.

The Patent Owner at page 26 contends that a web site in Refuah is different than document in the claimed invention. Requester notes that according to the specification the term document in the '040 patent is; "[t]he term 'document' includes not just text, but any type of media, including but not limited to, hypertext, database, spreadsheet, image, sound, and video" (*Id.*, '040 patent at col. 9, lines 14-17), the web site clearly qualify as "document" under this broad definition.

Examiner agrees with the requester and notes that in view of the definition of document in the specification of the '040 patent, web site qualify as document and evaluating a website is in fact analyzing document in the context of the '040 patent. As a result evaluation of suitability as taught by Refuah is equivalent to the estimation of probability as recited in the claims.

The Patent Owner next contends that Refuah does not teach a "learning machine" or "estimating parameter of a learning machine." *Id.*, response at pages 23-16. Arguing that, Refuah discloses a positive parameter or a negative parameter (or binary form). The Patent owner further argues that, the parameters in Refuah refers to personal data elements or attributes of persona, and therefore, does not teach element (c) of claim 1. *Id.*, at 25. First para..

Later at page 25 the Patentee argues that Refuah does not teach "estimating parameters ..." of the claims because the "learning machine" is a mathematical function and/or model used to make a prediction that attempts to improve its predictive ability over time and the personality cookies in Refuah is does not provide a "mathematical function" as recited in the claimed invention. The Patent Owner finally argues that the word "reflexive" was used just once in

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Refuah as an additional or alternate approach to modify persona and/or a mood based on user activities without any elaboration of what this means. Refuah at col. 6:59-62. Arguing that Refuah does not describe how aggressive, moderate, or incremental change based on a user activity in the direction of persona and mood that would be considered as reflexive. *Id.*, response at 25-26

Requester at page 17 in response comments that the Patent owner's provides little explanation of why Refuah does not meet these limitations, rather just recite the limitation (or construction of these limitations from the Pending Litigation) and then states in conclusory fashion, that Refuah does not meet these limitation. Requester in response to the argument that the parameters of Refuah's user persona "are not the values or weights of the variables of a learning machine," (*Id.*, at page 25) comments that even in the '040 patent, the parameters of a learning machine in the claimed invention can comprise a weighted words map that shows how strongly certain data elements (e.g., **words**) are associated with the user. (*Id.*, '040 patent at col. 24, lines 1-18). Requester further notes that the Patent owner admitting Refuah's persona parameters work precisely the same way – "they include weight information as a relative preference of subjects of interests." (*Id.*, response at 25).

With respect to the argument that "reflexive" was used just once, requester notes that the Patent Owner ignores other disclosures of Refuah that provides detail on how personal parameters are updated. For example, Refuah explains that "a personality are [sic] updated responsive to one or more types and/or content of sites that a client accesses, the time spent at each site (preferably with a deduction for connection time), activities performed at the sites and/or data downloaded from the sites." (*Id.*, Refuah, at col. 22, lines 6-11).

Examiner notes that the Patent Owner attempts to construe the learning machine to means "a mathematical function and/or model used to make a prediction, that attempts to improve its predictive ability over time" (Response at pg. 25). First, the claim language contains no recitation about a mathematical function and/or model or even prediction and it would be error to introduce new limitations and subjective ambiguity into the claims where none existed before. Second, with regards to the "learning machine" the specification of the '040 patent specifically states that:



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“As defined in the art, a leaning machine contains tunable parameters that are altered based on past experience. Personal Web 12 stores parameters that define a User Model 13 for each user, and the parameters are continually updated based on monitored user interactions while the user is engaged in normal use of a computer. While a specific embodiment of the leaning machine is discussed below, it is to be understood that any model that is a leaning machine is within the scope of the present invention.” *Id.*, ‘040 patent at col. 8, lines 44-53.

Having that in mind, it is unclear and that Patentee does not explain why the ‘persona’ is not a ‘User Model’ and why the continuous updating parameters to update ‘mood’ and/or ‘persona’ is not a good example of a learning machine. In Refuah the ‘persona’ is the ‘User Model’ as described in the rejection. *See* for example Section VI.C., proposed rejection # 11, part (iv), where it is indicated that Refuah discloses assigning a user a ‘persona.’ *See* generally *id.* at col. 2. “In a preferred embodiment of the invention, a mood and/or a persona may be updated by modifying continuous parameters.” *Id.* at 6:5-7. Specifically, “a parameter may be reflexive towards the persona, for example defining how to modify the persona and/or a mood based on user activities.” *Id.* at 6:60-62. Accordingly, the parameters define the ‘User Model’ (‘persona’) specific to the user, and these parameters are “estimated in part from the user-specific data files” because they are “based on user activities.” As such, the parameters define the ‘User Model’ (‘persona’) that is specific to the user, and these parameters are “estimated in part from the user-specific data files” because they are “based on user activities.”

The Patentee arguing that that “reflexive” was used just once, The Examiner notes that Refuah in the same paragraph suggests modification of the persona. Additionally, the Patentee is arguing about one statement in Refuah without consideration of the whole document. For example Refuah at col. 5, lines 34-50, a whole paragraph is dedicated for updating ‘persona’ or ‘mood’ (collectively personality), and describes how the profile (similar to ‘User Model’ in the ‘040) is updated.

The Patent Owner at page 26 arguing that Refuah provides a “binary assessment” of whether a site is of interest to a user. Arguing that Refuah’s parameters of user’s interest are also “binary” and do not disclose the degree of user interest in a given subject. The Patent Owner cites Refuah’s “user interest = chess” parameter and argues states; “the reflexive parameter of a person in Refuah would identify the user as either interested or disinterested in chess, which is a

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characteristic of a binary matching or memorization as somehow characterizing the user's interest in chess, than [sic] the claimed invention in estimating of a learning machine."

(Response at page 26)

Requester at page 18 notices that even if the Patent Owner's position that a set of purely binary parameter would not meet the "estimating parameters" limitation of the '040 patent, the Patent Owner's position that Refuah discloses only binary parameters is incorrect. Arguing that the Refuah's parameters do not merely indicates, in binary fashion, that a user is interested in a given object, rather, these parameters can reflect the user's degree of interest in a given subject. Referring to Refuah's teaching that states; "a person may include weighting information, such as relative preference of subjects of interest, for example "baseball = 5, basketball = 3," the Requester concludes that "binary parameters" argument is wrong on the facts, and it does not accurately reflect how Refuah's system operates.

Examiner notices that the Patent Owner's argument that Refuah provide "binary" assessment that a site is of interest to a user is wrong and erroneous. In Refuah, personality is characterized by Mood and persona. (*Id.*, col. 2, lines 64-65) A user Personality Profile is characterized by elements and sub-elements. The elements and sub-elements associated with a personality, which is specific to a user is characterized by a weighting factor (*Id.*, Refuah, at col. 2, lines 9-35). Therefore, arguing that Refuah assessment of personality is on a "binary" base is not accurate. As noted by the requester, there are many examples in Refuah that shows there is a grade level for each subject. For example he discloses that:

"a persona may include weighing information, such as relative preference of subjects of interest, for example "baseball=5,basketball=3". Additionally or alternatively, a persona may include functional information, such as how to evaluate a particular parameter, the affect of a parameter and/or evaluate a grade for a particular site, in view of a parameter." *Id.*, at col. 6, lines 53-59.

As such arguing that the patent owner's argument about 'binary assessment of Refuah is unpersuasive.

Response to argument that:

#### **IV.C. Because Refuah Does Not Teach Estimating a Probability That an Unseen**

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**Document is of Interest to the User, Claims 1 and 32 and Their Respective Dependent Claims Are Not Anticipated by Refuah.**

The Patent Owner at page 26 through page 28 once again arguing that Refuah assessment is based whether a site is suitable or not suitable. In other words arguing once again arguing that the assessment of a site in Refuah is a “binary” assessment. Arguing that Refuah does not anticipate claim 11 because “Refuah describes search results based on a site that they originated from according to binary matches with the persona.” (*Id.*, Response at 28). The Requester at page 19 responds that Refuah is not limited to making ‘binary’ decisions of whether search results match a user persona, rather Refuah can provides nuanced grades of how well search results match user’s persona. Requester point to the teaching of Refuah at col. 17, lines 34-36 which states; “Various conditions of thresholding, grading and storing may be applied on search results, by comparing them to a persona.” Arguing that Refuah goes on to explain various metrix that can be used to estimate the likelihood that search result will be of interest to the user, such as comparing keywords between the search results and the user persona, determining whether search results’ download time is consistent with persona preference, and doing geographic analysis of the search results to determine how well they match the persona. *Id.*, at col. 17, lines 32-65. The Requester finally concludes that Refuah does anticipates claim 11.

The Examiner agrees with the requester’s comments and notices that this argument is based on the wrong assumption presented previously by the Patent Owner in his previous argument that Refuah’s assessment is only ‘binary’ assessment. The Examiner response to that argument is incorporated herein by reference and will not be repeated.

The Patent Owner at page 28 further arguing that Refuah does not anticipate claim 21. The Patent owner while admitting that Refuah sends user persona to a third-party web server, arguing that these persona are not derived “from [a] User Model” that defines parameters of a learning machine.” The Patent Owner further arguing that, Refuah’s analysis of the search result “is not directed to a document but rather to a website.”

Requester at page 19, notices that the first argument is essentially is just repeat of the Patent owner’s argument that Refuah’s personas are not User Model or learning machines.

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Requester referring to his previous discussion in section V(A)(3), arguing that this argument is unavailing and arguing that the Patent Owner has not shown that Refuah's personas are different from "learning machine" and "User Model required by the claims.

The Patent Owner at pages 28-29 argues that Refuah's persona are not derived from a User Model/learning machine because Refuah's persona "are compiled through the monitoring of user interaction on the Internet." But the Patent Owner simply ignoring that the User Model/learning machine in the '040 patent claims are also compiled through the monitoring of user interaction on the Internet. See for example the '040 patent claim 1(a) and 32(a) which requires "transparently monitoring user interactions with data." In both claims the User Model/learning machine is a byproduct of monitoring user interaction on the Internet.

Examiner agrees with the requester and notices that both these arguments are repeat of the Patent Owner's previous arguments, rebutted *above* in response to the Patent Owner's previous arguments, incorporated herein by reference and will not be repeated.

The Patent Owner at page 28, with respect to claim 22 arguing that Refuah does not anticipate claim 1, from which claim 22 depends. However, as discussed above, Refuah does in fact anticipate claim 1 and as such anticipates claim 22.

The Patent Owner at page 28, arguing that Refuah does not anticipate claim 34, i.e. "wherein analyzing the document d provides for the analysis of document having multiple distinct media types." Requester at page 20 notices that Refuah discloses the analysis of websites and it as well-known when the Refuah patent application was filed in 1999 that the websites could include multiple types of media. Requester, concludes that Refuah, inherently provide for the analysis of documents having multiple distinct media types.

In response to the Patent Owner's argument that Refuah does not expressly teach analysis of document having multiple media type, the Requester responds that this argument is incorrect. Requester arguing that Refuah, expressly teach that a document's text and graphic both be analyzed to determine the document's interest to the user. *See* for example Refuah at col. 3, lines 15-18, and col. 17, lines 35-48. Requester argues that because, text and graphic are different types of media, Refuah "provides for analysis of documents having multiple distinct media types."

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The Examiner concurs with the Requester's comments in response to the contentions raised by the Patent Owner and thus the Examiner adopts these comments as the response to the Patent Owner's contentions.

Response to argument that:

**IV.D. Because Mladenec Does Not Cure Deficiencies of Refuah With Respect to Estimating a Probability That an Unseen Document is of Interest to the User by Applying the Identified Properties of a Learning Machine, Claims 1, 11, 21, 22, 32 and 34 Remain Patentable over the Combination of Refuah and Mladenec.**

The Patent Owner at page 29 contends that claims 1, 11, 21, 22, 32 and 34 are not obvious over Refuah in combination with Mladenec. Arguing that both Mladenec and Refuah fails to teach the "estimating the probability" limitation of claims 1 and 32. However, as discussed *above* both Mladenec and Refuah meet this limitation as discussed in response to the arguments in sections II(b), II(c), and IV(c) of the Patent Owner' Response, incorporated herein by reference and will not be repeated for brevity.

**4. Response to Rejections Based on Primary reference Culliss**

Response to argument that:

**V.A. Because Culliss Does Not Teach Estimating a Probability That an Unseen Document is of Interest to the User, Claims 1 and 32 and Their Respective Dependent Claims Are Not Anticipated by Culliss.**

The Patent Owner at page 30 contends that Culliss does not disclose "estimating a probability  $p(u/d)$  that ...by the User model" limitation of claims 1 and 32. Arguing that the teaching in Culliss is contrary to the recited step. Arguing that in the '040 patent describes  $p(u/d)$  as the "user interest in the document regardless of the current information need. Id. Response at 12 (quoting '040 patent at col. 28, lines 10-11) Arguing that in Culliss only after a user enters a search query does the personal data in which the system has stored about the user becomes part of the query, and the retrieved query is used to retrieve personalized search results. The system

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is, therefore, unable to estimate any user interest in a document absent the user entering a query. *Id.*, Response at pg. 31. The Patent Owner argues that any system which uses search queries as a component in its estimation of document interestingness cannot meet the “estimating a probability  $p(u/d)$ ” limitation of claims 1 and 32.

Requester at page 22 notes that the ‘040 patent itself refutes this position. Arguing that the same section of the ‘040 Patent that defines  $p(u/d)$  as the “user interest in the document regardless of the current information need” also explains that  $P(u/d)$  is not necessarily a standalone calculation of document interestingness. Rather, it is one component of a larger algorithm that calculates how interesting a document is to the user given a particular user search query. For context, the most relevant portion of the ‘040 Patent - which includes Respondent’s quoted language about the meaning of  $P(u./d)$  - is excerpted below. *See* ‘041 Patent at 28:1-14

where  $P(u|q,d)$  is the posterior probability of the event that a document  $d$  is of interest to a user  $u$  having an information need  $q$ . This probability can be expressed as:

$$P(u|q, d) = \frac{P(q|d, u)P(u|d)}{P(q|d)}$$

The term  $P(u|d)$  represents the user interest in the document regardless of the current information need, and is calculated using the User Model. The term  $P(q|d,u)$  represents the probability that a user  $u$  with an information need of  $d$  expresses it in the form of a query  $q$ . The term  $P(q|d)$  represents the probability that an average user with an information need of  $d$  expresses it in the form of a query  $q$ .

The Requester argues that from the *above*, the ‘040 patent expressly contemplates that the  $p(u/d)$  probability estimation is made as part of a broader  $p(u/q, d)$  probability estimation that makes into account a particular search query (requester also notes that this excerpt is appears in a section of the ‘040 patent entitled “Personal Search.”). Requester goes on to explain that this is precisely how Culliss operates: a user personal data is appended to a search query in order to estimate which document will be of interest to the user, given the query. *Id.*, Culliss at col. 5,

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lines 18-48. The Requester concludes that there is no merit to the Patent owner's position that Culliss does not meet the "estimating a probability  $p(u/d)$ " limitation just because Culliss uses a search query.

Requesters next states; "[T]o put it another way, the "estimating a  $p(u/d)$ " step recited in claims 1 and 32 does not require a search query, but nothing prohibits it from being part of a larger calculation that includes a search query"

The Examiner partially agrees with the Patent owner's argument in response to the Patent owner's contentions. The Examiner while agrees with the requester's response in general, but does not agree with the Requester that the estimating step recited in claims 1 and 32 does not require a search query. First, as described *above* in response to the Patent Owner's arguments in section II.E (IV.1 in this paper), the statement that "the user interest in the document *regardless of the current information used*", does not mean **without** need for current information used, as the term regardless means "with no regard", rather than "without". Examiner explained that, with respect to probability  $P(u/d)$  the specification use the term "regardless", meaning it could be **with** or **without** the current information need.

Second Examiner notes that the term "regardless information need" is not used in the claim and even if the term "regardless of the current information need" was defined as without information need, it would have been improper to bring this limitation into the claim. Second, as detailed in col. 5, lines 49-62, Culliss also continually updates personal data while the user is engaged with the normal use of the computer. Updating personal data, very similar to continually updating of User Model described in the '040 patent described in col. 22, line 64 to col. 23, line 7 (as noted by the Patent Owner). As such, Culliss also continually updates personal data while the user is engaged with the normal use of the computer. Updating personal data, very similar to continually updating of User Model described in the '040 patent.

Third, as described earlier, The specification and claims in the '040 patent, first the user model is updated and then the user's interest is estimated, the user's interest is estimated with or without reference to a query (or information need as worded by the patentee). Same way in Culliss the user first interacts with the data during normal use of the computer and then the personal data is constructed and stored and updated and then relevancy scores (estimating

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probability) is determined. Therefore, the Patent Owner and declarant's argument is not persuasive, because, even in '040 patent, only after a search query (the user first has to enter a query) is entered and the system stores the User Model combined with the query, and user's interest is estimated. Accordingly, the combination of Mladenic and Culliss **does** teach the limitation "estimating a probability  $p(u/d)$  that an unseen ...." required by claims 1 and 32.

As a result the Examiner does not agree with the Requester that the estimating step recited in claims 1 and 32 does not require a search query.

The Patent Owner further at page 31 contends that Culliss describes previous-user relevancy score as a mechanism to associate an article. Arguing that in Culliss, personal data about a particular user is accumulated with a cumulative score of the number of occurrences of certain classified key terms, queries or visited URLs. The cumulative score in Culliss does not anticipate estimating a probability that an unseen document  $d$  is of interest to the user  $u$ . The Patent owner finally concludes estimating probability in claims 1 and 32 is a determination independent of the information need of the user, and Culliss on the other hand, describes grouped relationships that are used as basis to retrieve ranking and the relevancy scores are necessarily relevancies with respect to a query, i.e., with respect to an information need.

The requester at page 23, commenting that the Patent Owner made this exact argument at greater length in response to the initial Office Action, and the Examiner already rejected this argument at page 75 of the ACP that; "the 'User Model' in Culliss relates to the cumulative score developed for the user for each item of personal data, based on the user's activities...These qualifications are based entirely on the user's own activities."

Examiner agrees with the Requester's comments in response to the Patent Owner's contentions. As stated in the ACP, the Examiner is not persuaded by the Patent Owner's argument. First, Culliss discloses that "the user can be identified as having the personal data characteristic of being a sports fan and having an interest in finance because there are three queries relating to sports ('sports scores,' 'football,' and 'nba') and five queries containing key words relating to finance ('stock quotes,' 'cnnfn,' 'junk bonds,' 'stock quotes,' and 'dowjones.')" *Id.*, Culliss at 4:54:60. Culliss further discloses estimating parameters of a learning machine through the use of a mathematical function of data scores. *Id.*, Culliss at 4:65-5:4: "A cumulative



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score can be developed for the user for each item of personal data, called a personal data item score. When the personal data item score of the user reaches a certain threshold, then the item of personal data can be said to be associated with the user. Additionally or alternatively, the strength of the association can be determined by the cumulative personal data item score.")

Requester comments that, while Culliss personalizes search results based on the classifications of the user rather than a data model that is specific to an individual user--*e.g.*, whether the user is interested in the "finance" category or the "sports" category—the Patent Owner's infringement allegations assert that a 'User Model' is "specific" to a user simply if it is derived from data from that user. (See Request at 32-33.) Under Respondent's contentions, Culliss meets the limitations of Claim 1 [c]. *Id.*, requester's Comments, at page 32.

Examiner agrees with the Requester and the interpretation of the claim term 'User Model' specific to the user, construed by the Patent Owner and the conclusion that is based on the Patent Owner's own interpretation, Culliss meets the limitation of claim 1[c] .

Second, the Patent owner is ignoring that the scores or "informative measures" disclosed in the specification are also calculated. For example, the score might be "measured by the word's frequency in user documents." *Id.*, '040 Patent at 11:4-5. The score might use the Term-Frequency / Inverse Document Frequency or TFIDF measure, which is calculated through a mathematical formula. *Id.* at 11:12-20. The score might also be derived through the concept of mutual information, which is again calculated through a mathematical formula. *Id.* at 11:44-60. In summary, all of the scores described in the specification are "calculated" rather than "estimated."

The Patent Owner further asserts that the 'User Model' in Culliss is entirely dependent on prior users and their search activities. *Id.*, Response at 32-33.

Examiner notes that this argument is not persuasive, for the reason that as explained *above*, the 'User Model' in Culliss relates to the cumulative scores developed for the user for each item of personal data, based on that user's activities. *Id.*, Culliss at 4:65-5:4 Culliss refers to the personal data as "PS," and individual categories (*e.g.*, "sports," "finance") as "PS 1," "PS2," etc. (*Id.* at 3:12-18.) A user is thus defined by the "personal data" categories for which he qualifies: one user might be defined by the PS 1, PS4, and PS 16 categories, while a second user might be defined by PS4, PS7, PS9, and PS206. *Id.* at 4:54 - 5:16. These qualifications are based

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entirely on the user's own activities. *Id.* at 4:61 - 5:4. The patent Owner's citation relates to a different aspect of the Culliss system: tracking how users who already have a User Model interact with various articles. (Culliss 6:11-13: "In this manner, the relevancy of articles is determined by the searching activity of previous searchers which share, or are indicated as having, certain personal data characteristics."; *see generally id.* at 5:17- 6:19.) This relates to how the User Model is applied, not how the 'User Model' is constructed, as encompassed by Claim 1 [c].

For the reason *above*, it is believed that the Culliss teaches "estimating parameters of a learning machine" recited in claims 1 and 32.

Response to argument that:

**V.B. Because Culliss Does Not Teach Estimating Parameters of a Learning Machine Specific to the User, Claims 1 and 32 and Their Respective Dependent Claims Are Not Anticipated by Culliss.**

The Patent Owner at page 32 contends that Culliss does not estimate parameters of a user-specific learning machine. First arguing that, in the ACP at page 30, with respect to the rejection of claim term "User Model to the user-specific to the user" in element 1(c) of claim 1, the Requester and the Examiner has mischaracterized the Patent Owner's statement in the litigation. Requester notes that the Patent Owner does not explain why the Requester's and the Examiner's statement are mischaracterization. The examiner agrees with the Requester, since the Patent Owner's statement is void of any reasoning as to why the Examiner's statement is mischaracterization and for that reason found the Patent owner's statement without merit.

The Patent Owner further contends that Culliss does not teach a "learning machine". Arguing that "Culliss describes a basic approach in counting the personal data item score to determine if it has reached a certain threshold," *Id.* response at pages 32-33. Arguing that the update in weights of the personal data in Culliss is not learning based on "attempts to improve its predictive ability" but rather simply to ensure that the user personal data items are current. Therefore, the Culliss patent does not disclose a learning machine that attempts to improve predictive ability over time by altering the values/weights given to its variable.

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Examiner notes that the claim does not say "attempting to improve predictive ability" of personal data in claims 1 and 32. In the claims the element 1(c), simply recites; "estimating parameters ..., wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files". No limitation such as the one argued by the Patentee is recited in any of the claims except that the user 'learning machine' defines a 'User Model' and the 'User Model' is specific to the user.

Additionally, in the '040 patent the parameters are updated continually. The Examiner notes that in the Konig '040 patent Figure 14 depicts "the user recently accessed buffer, which records all user interaction with documents." *Id.*, '040 patent at 6:39-40. In that regards the '040 specification further states:

"Information about each document that the user views is stored in a recently accessed buffer for subsequent analysis. The recently accessed buffer includes information about the document itself and information about the user's interaction with the document. One possible implementation of a buffer is illustrated in FIG. 14; however, any suitable data structure may be used." [Underlining provided] (*Id.* at 22:27-33.)

This "recently accessed buffer" is accessed and the documents therein are separately indexed:

"After each addition to or subtraction from the set of user documents, the document is parsed and analyzed as for the User Model initialization. Extracted information is incorporated into the User Model." *Id.* at 22:50-54.

Likewise Culliss discloses that users' personal data "can be inferred from a history of their search requests or article viewing habits." *Id.*, Culliss at 3:46-48. Culliss further discloses that "it is possible to simply store all elements of personal data, individually or in key term groupings, within the index separately, with components of the query or otherwise." *Id.* at 5:37-39. These personal data elements are also "updated" as the user continues to navigate the Internet and visit documents and URLs. *See id.* at 4:60-64 (disclosing "keeping a cumulative score for a user for search requests or URLs. For example, whenever there is a match (whole or partial) between a search request or URL and an item of personal data, a record for the user can be updated to give a +1 for that item of personal data.") Accordingly, Culliss meets the "updating user-specific data files" limitation argued by the Patent Owner.

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Moreover, this issue was addressed by the Examiner in the ACP at page 73 and in there, the Examiner challenged the Patentee as to why the collection of personal data deduced from a history of search request or article viewing habits does not constitute “updating user specific data files.” Examiner notes that even the Konig ‘040 patent uses the same scheme for “updating user specific data files” as seen from the above excerpt. Accordingly, the argument that Culliss does not meet the limitations of claim 1[c] because, there is no “attempting to improve predictive ability” of personal data in claims 1 and 32 is contradicted by the specification of the ‘040 patent. In fact, Culliss uses the same scheme as the one used in the ‘040 patent with regards to element 1(c) of the claims.

The Patent Owner at page 33, arguing that “Culliss does not teach a ‘learning machine’ because “Culliss describes a basic approach in counting the personal data items score to determine if it has reached a certain threshold.” *Id.*

Requester on the other hand notes that the learning machine in the ‘040 patent also relies on “counting personal data score.” Specially, Fig. 4A of the ‘040 patent is “table[] that store[s] different components and parameter of the User Model” (6:13-14), and this Table counts the score that a give term has for the user:

Words

Informative Word/Phrase List

Scores

Word ID	Word Grade	Last Access Time	Number of Accesses
Vegan	0.86	3/6/2000 12:22:41	173
Parasail	0.72	4/15/2000 18:51:27	220

**Fig. 4A**

Requester finally concludes that the Patent owner cannot distinguish Culliss “count[s] personal data score.” To determine the user’s preference.

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Requester further argues that the Patent Owner cannot distinguish Culliss on the ground that Culliss merely uses “threshold” matching to determine whether a term is associated with the user, because Culliss is not limited to threshold matching,. Rather than making a binary determination that a term is associated with a user if it reaches a certain threshold, Culliss can also determine the strength of the association between a term and a user. Requester points to the Culliss that states:

“When the personal data item score of the user reaches a certain threshold, then the item of data can be said to associate with the user. Additionally and alternatively, the strength of the association can be determined by the cumulative personal data score.” *Id.*, Culliss at col. 4, line 67 to col. 5, line 4

Requester concludes that Culliss teaches a learning machine.

Examiner is not persuaded by the Patent Owner’s argument. First, Culliss discloses that "the user can be identified as having the personal data characteristic of being a sports fan and having an interest in finance because there are three queries relating to sports ('sports scores,' 'football,' and 'nba') and five queries containing key words relating to finance ('stock quotes,' 'cnnfn,' 'junk bonds,' 'stock quotes,' and 'dowjones.')" *Id.*, Culliss at 4:54:60. Culliss further discloses estimating parameters of a learning machine through the use of a mathematical function of data scores. *Id.*, Culliss at 4:65-5:4: "A cumulative score can be developed for the user for each item of personal data, called a personal data item score. When the personal data item score of the user reaches a certain threshold, then the item of personal data can be said to be associated with the user. Additionally or alternatively, the strength of the association can be determined by the cumulative personal data item score.") As such Culliss discloses and teaches a learning machine within the meaning of the term disclosed in the '040 patent.

The Patent Owner argues that Culliss does not “estimate[e] parameters of a learning machine, wherein the parameters define a User Model specific to the user.” *Id.*, Response at 33. Arguing that Culliss does not meet this limitation because “[t]he altering of value/weight that is described in Culliss is of the index which is not specific to the use.” *Id.* The Patent Owner further arguing that in Culliss the index common to all users is updated, as described by block 30

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in Figure 1 of Culliss, which does not pertain to anything specific to the user. Arguing that the updating in Culliss is not learning based on “attempts to improve its predictive ability” but rather simply to ensure that the user personal data items are current. The Patent Owner finally concludes that the Culliss patent does not disclose a learning machine that attempts to improve ability over time by altering the value/weights given to its variable. As such Culliss teaches a learning machine within the meaning of the term disclosed in the ‘040 patent.

Requester at page 25 notes that the Patent Owner’s argument is unavailing. Arguing that to be sure, the index described in Culliss is a single index that scores the personal data of multiple users. Pointing to Culliss that discloses an index that contains the personal data grouping PS1-PS4 and PS7. *Id.*, Culliss at col. 5, lines 25-35. Requester notes that Culliss also makes clear that it tracks an individual user’s browsing history to update the weights of the personal data for that individual user. For example Culliss states: “whenever there is a match (whole or partial) between a search request or URL and an item of personal data, a record for the user can be updated to give a +1 for that item of personal data.”) *Id.*, Culliss at col. 4, lines 61-64.

Requester also points to the Patent Owner’s argument in the Pending Litigation that a single learning machine may be shared between multiple users.

“Defendant incorrectly argues that ‘user model specific to the user’ and ‘user-specific learning machine’ element must be ‘unique’ to each individual user...PUM’s construction contemplates that the “specific to the user/’user-specific’ aspects of the learning machine/user model occur because they are defined by ‘parameters,’ which are specific to each user.” *Id.*, OTH-C at 2-3.

Requester additionally contends that the Patent owner won on a construction in the Pending Litigation that “User Model specific to the user” means “an implementation of a learning machine updated in part by data specific to the user.” *Id.* Markman Order at 2.

Requester with respect to the argument about “attempt to improve its predictive ability”, comments that this argument puts the cart before the horse. Arguing that the reason why it is important to ensure that the user personal data item are current is so Culliss’s system will return the document that are of most interest to the user. By updating the weight of the user personal

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data to best reflect a user's current interests, Culliss strive to improve its system performance and deliver most relevant and interesting documents to the user. *Id.* requester's comments at page 26.

Examiner agrees with the Requester and the interpretation of the claim term 'User Model Specific to the user,' construed by the Patent Owner and the conclusion that is based on the Patent Owner's own interpretation, Culliss meets the limitation of claim 1[c].

With respect to the argument that "attempts to improve predictive ability" the argument is rebutted by the Examiner, incorporated herein by reference and will not be repeated. However, with respect to the argument that index common to all users is updated which does not pertain to anything specific to the user, the argument is not persuasive. As explained *above*, the 'User Model' in Culliss relates to the cumulative scores developed for the user for each item of personal data, based on that user's activities. *Id.*, Culliss at 4:65-5:4 Culliss refers to the personal data as "PS," and individual categories (e.g., "sports," "finance") as "PS 1," "PS2," etc. (*Id.* at 3:12-18.) A user is thus defined by the "personal data" categories for which he qualifies: one user might be defined by the PS 1, PS4, and PS 16 categories, while a second user might be defined by PS4, PS7, PS9, and PS206. *Id.* at 4:54 - 5:16. These qualifications are based entirely on the user's own activities. *Id.* at 4:61 - 5:4. The Patent Owner's citation relates to a different aspect of the Culliss system: tracking how users who already have a 'User Model' interact with various articles. (Culliss 6:11-13: "In this manner, the relevancy of articles is determined by the searching activity of previous searchers which share, or are indicated as having, certain personal data characteristics."; *see generally id.* at 5:17- 6:19.) This relates to how the 'User Model' is applied, not how the 'User Model' is constructed, as encompassed by Claim 1 [c].

For the reason *above*, it is believed that the Culliss teaches "estimating parameters of a learning machine" recited in claim 1.

The Patent Owner at page 33, with respect to claim 11 which depends from claim 1, argues that Culliss does not meet this limitation because "Culliss fails to describe any type of estimated probability (posterior or otherwise) and only describes using a user's persona data to retrieve articles related to the user's search request from an index and ranking retrieved articles according to relevancy score." *Id.*, at page 33. Requester on the other hand notes that the Patent

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owner provides no explanation of why ranking articles according to their relevance score to the user different from estimating probability that these documents are interest to the user. Requester finally concludes that the Patent Owner has provided no basis to question the ACP's conclusion that Culliss meets the "estimating posterior probability" element in claim 11.

Examiner notes that the patent Owner's argument is not persuasive. First, Culliss discloses "accepting a search query from a user" and "identifying matched articles." *Id.*, Culliss at 2:39-42. Articles "can have their key term scores or key term total scores altered according to whether they were displayed to a user, whether they were selected by a user, how much time the user spend with the article, etc." *Id.* at 2:43-46. These key term scores are "a degree of belief or likelihood" according to the Patent Owner's interpretation of the word 'probability' explained in section II.E, and III.B, *above*.

The Patent Owner with respect to claim 22, arguing that Culliss does not teach the limitation "wherein the monitored user interaction includes a series of interaction times." Respondent comments that while the Patent Owner acknowledges that Culliss monitors how much time users spent with an article, but asserts that "[m]onitoring how long a user spend with an article is not monitoring a series of interaction times" Requester notes that the Patent Owner provides no argument to support this assertion, nor does the Patent Owner address the ACP's conclusion that Culliss meets the limitation of claim 22 by recording "the amount of time spent online, the amount of time spent browsing a particular subject...: (ACP at 50). Requester concludes that the Patent Owner has done nothing to cast doubt on the ACP's conclusion that Culliss anticipates claim 22.

The Examiner does not agrees with the Patent Owner's argument. As stated in the ACP, Culliss discloses: "Articles can have their key term scores or key term total scores altered according to whether they were displayed to a user, whether they were selected by a user, how much time the user spent with the article, etc." *Id.*, Culliss at 2:43-46. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Mladenic to include an analysis of user interaction times in judging which documents would be of most interest to a user, rather than the existing system which considers all visited documents to be of interest to the user. Accordingly, this would allow Mladenic to account for documents that the user viewed and



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did not like, e.g. links that led to poor-quality pages, search results that did not fulfill the user's needs, etc. The argument about, transparent monitoring has been responded above in section VII. 2, supra, incorporated herein by reference and will not be repeated for brevity.

Additionally, Requester in the response to the first Office action notes that the Patent Owner's argument is at odds with its infringement allegations in the co-pending litigation, where it asserts that recording timestamps is sufficient to meet the limitation. Commenting that Culliss also discloses recording timestamps for individual events:

"Personal activity data includes data about past actions of the user, such as reading habits, viewing habits, searching habits, previous articles displayed or selected, previous search requests entered, previous or current site visits, previous key terms utilized within previous search requests, and time or date of any previous activity." (Culliss at 3:29-35.)

Thus, Culliss' recording of "time or day of any previous activity" must meet the limitations of claim 22 under Patent Owner's own claim construction. *Innova/Pure Water v. Safari Water Filtration*, 381 F.3d at 1117 (Fed. Cir. 2004).

Examiner notes that Culliss discloses the "monitored user interactions include a sequence of interaction times" limitation of in claim 22 because Culliss, teaches:

"Personal activity data includes data about past actions of the user, such as reading habits, viewing habits, searching habits, previous articles displayed or selected, previous search requests entered, previous or current site visits, previous key terms utilized within previous search requests, and time or date of any previous activity" *Id.*, Culliss at 3:30-35

"A cumulative score can be kept with regard to these occurrences of certain classified key terms, queries or visited URLs to quantify how strongly someone is associated with a particular item of personal data. The score can be normalized over time frequency or other activity such as the number of searches performed, the amount of time spent online, the amount of time spent browsing on a particular subject, the number of URLs or articles selected for a particular subject, or otherwise." *Id.*, Culliss at 3:56-65

Therefore Culliss does in fact teaches the limitation of claim 22; "the monitored user interactions include a sequence of interaction times," and the Patent Owner has not provided any reasoning to the contrary. If the cumulative time of time spent on user's activity (number of searches performed, the amount of time spent online...) does not constitute the sequence of user interaction, then why it is not the case. The Konig specification with respect to sequence of interaction discloses (the only reference to sequence of interaction in the specification):

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“where con represents a sequence of interactions during the current interaction session or media content currently marked by the user” *Id.* ‘040 patent at 5:42-45

Therefore, the amount of time spent meets the limitation “sequence of time spent” in the context of the invention disclosed in the ‘040 patent.

With respect to claim 34, the patent owner arguing that Culliss does not meet the limitation of claim 34 which depends from claim 32, because “while Culliss may indicate that the Internet can include a variety of different types of documents, files, etc., Culliss does not teach how to analyze documents having multiple distinct media types.” *Id.*, Response at 34.

Requester at page 28 notes that immediately after Culliss lists the wide variety of media types on the Internet, Culliss states that all these distinct media types will be collectively referred to as “article.” *Id.*, Culliss at col. 22, lines 19-24. Requester arguing that the remainder of Culliss reference explain how the “articles” are analyzed, ranked and presented to users. Thus, one of ordinary skill in the art would understand that Culliss’s analysis of “articles” includes analysis of all types of media on the Internet, since Culliss explicitly states that these types of media are “articles” for purpose of Culliss’ disclosed method.

The Requester in response to the Patent Owner’s exact same argument presented in response to the first Office Action noted that the Patent Owner’s argument that claim 34 requires analyzing the distinct media types rather than simply allowing for documents to contain ignored media types is at odds with its infringement allegations in the co-pending litigation, where it asserts that processes that only parse the text components of HTML documents meet the limitations of claim 34. Accordingly, Culliss’ analysis of the HTML that accompanies videos, images, and the like on web pages must meet the limitations of claim 34 under Respondent’s own infringement theories. *Innova/Pure Water v. Safari Water Filtration*, 381 F.3d at 1117 (Fed. Cir. 2004). Examiner agrees with the requester that the analysis of both plain text and HTML documents (*See id.* at 3), meets the claim limitation, as it is construed by the Patent Owner in his claim construction. *See Examiner’s Note, supra* at the beginning of the Response to Arguments

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with respect to Court's claim construction and the Examiner's reminder regarding the Patent Owner's admissions.

Response to argument that:

**V.C. Because Mladenic does not Cure the Deficiencies of Culliss with Respect to Estimating a Probability that the Document is of Interest to a User by Applying the Identified Properties to a Learning Machine, Claims 1 and 32 and Their Respective Dependent Claims are Patentable over Culliss in View of Mladenic.**

The Patent Owner at page 34-35 arguing that, Mladenic in view of Culliss does not disclose the "estimating a probability" limitation of claims 1 and 32, and a person of ordinary skill in the art would not combine Mladenic with Culliss. The Requester at page 28 notes that, both Culliss and Mladenic do in fact meet the "estimating a probability" limitation (and all the other limitations) of claims 1 and 32. Moreover, given that Culliss and Mladenic are in the same technological field of providing personalized information services to Internet users, one of ordinary skill in the art would be motivated and able to combine their teachings, and as such claims 1, 11, 22, 32 and 34 are obvious over Culliss in view of Mladenic.

The Examiner finds the Patent Owner's argument to be unpersuasive. With respect Mladenic and the argument that "[T]he new hyperlink exist on a page the user is currently viewing and so neither the page nor the hyperlink thereon that is being evaluated is "unseen"" the argument is rebutted by the Examiner in detail in response to the Patent Owner's argument in section II.A, *above*, incorporated herein by reference and will not be repeated. With respect to the combination of Culliss and Mladenic argument, in the ACP claim 11 is made obvious over of Culliss in view of Mladenic in ground #14, at page 34. In that rejection with respect to the combination of the two references, it is explained that:

"It would have been obvious to combine Culliss's method with the "learner" and "model of user interests" disclosed by Mladenic. As noted above, Culliss discloses a method of "utilizing personal data to further refine search results," *See* Culliss at 3:12-13, while Mladenic's learner/user model likewise determines personal user interests in order to refine the web pages that are presented to the user. Thus, combining Culliss with the learner/user model of Mladenic would merely have involved fusing two known pieces of prior art, each retaining its ordinary and established function. This combination would

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have been "obvious to try" and would have been well within the grasp of person of ordinary skill in the art.

Moreover, Mladenic discloses how each user can run his or her own local copy of personalization software. *See* Mladenic at 3 ("each user has her/his own copy of the system - her/his own agent ...") Applying this teaching of Mladenic to Culliss, it would have been obvious to modify Culliss such that each computer user had his or her own local copy of Culliss' disclosed system, employing a User Model specific to the user."

For the *above* reasons, claim 11 is obvious over Culliss in view of Mladenic.

Response to argument that:

**V.D. Claim 21 is Patentable over Culliss in View of Refuah.**

The Patent Owner with respect to claim 21 and the combination of Culliss in view of Refuah at page 25 argues once again that Refuah's persona do not comprise "user interest information derived from the User Model". The Patent Owner repeat its argument that Culliss does not meet the "User Model" and "learning machine" limitation of claim 1 (from which claim 21 depends) on the basis that Culliss uses a "rudimentary" approach of associating personal data with a user once that personal data reaches a certain threshold. *Id.* response at pages 35-36.

Requester notes that both of these arguments ate responded in sections V(A)(3), and VI(A)(2) of the requester's comments. Examiner notes that both arguments are rebutted in response to Patent Owner's argument in section II.F, and V.A, *above*, incorporated herein by reference and will not be repeated.

Response to argument that:

**V.E. Claim 21 is Patentable over Culliss in View of Mladenic and Refuah.**

The Patent owner at page 36 arguing Culliss, Refuah, and Mladenic do not meet the "estimating a probability" limitation of claim 1 and that the Refuah's personas are not "derived from the User Model" within the meaning of claim 21. Examiner notes that all these arguments are rebutted in response to the Patent Owner's arguments *above*, incorporated herein by reference and will not be repeated for brevity.

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**VI. RESPONSE TO DECLARATION OF CHARLES K. NICHOLAS UNDER 37 C.F.R. §1.132, FILED 05/25/2012**

Examiner maintains that the declaration of Charles K. Nicholas does not provide evidence of non obviousness and is insufficient to overcome the rejections under 35 USC 103 over the cited references for the reasons indicated herein below.

It has been held, "[i]n assessing the probative value of an expert opinion, the examiner must consider the nature of the matter sought to be established, [1] the strength of any opposing evidence, [2] the interest of the expert in the outcome of the case, and [3] the presence or absence of factual support for the expert's opinion." *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986).

With respect to [1], Examiner respectfully submits that the strength of opposing evidence to each of Charles Nicholas's opinions is strong, as discussed above in response to the Patent owner's argument which is primarily premised on declarant's opinion.

With respect to [2], it is noted that Charles Nicholas in his declaration does not indicate that he is being compensated by the Patent Owner for his testimony. Additionally, neither Charles Nicholas nor the Patent Owner indicate Charles Nicholas's stake in the outcome of the proceedings and the Examiner has no manner of determining whether Charles Nicholas is being compensated or has stake in the outcome of the proceeding.

With respect to [3], Examiner respectfully submits that Charles Nicholas's arguments are premised largely **on opinion versus fact**. Examiner noted that Charles Nicholas's arguments are identical to Patent Owner's arguments, which already have been rebutted. As such, the Examiner's rebuttal argument in each specific case is incorporated herein by reference in response to each of Charles Nicholas's opinion.

**VII. CONCLUSION**

**This is a RIGHT OF APPEAL NOTICE (RAN);** see MPEP § 2673.02 and § 2674. The decision in this Office action as to the patentability or unpatentability of any original patent

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claim, any proposed amended claim and any new claim in this proceeding is a FINAL DECISION.

No amendment can be made in response to the Right of Appeal Notice in an inter partes reexamination. 37 CFR 1.953(c). Further, no affidavit or other evidence can be submitted in an *inter partes* reexamination proceeding after the right of appeal notice, except as provided in 37 CFR 1.981 or as permitted by 37 CFR 41.77(b)(1). 37 CFR 1.116(f).

Each party has a thirty-day or one-month time period, whichever is longer, to file a notice of appeal. The patent owner may appeal to the Board of Patent Appeals and Interferences with respect to any decision adverse to the patentability of any original or proposed amended or new claim of the patent by filing a notice of appeal and paying the fee set forth in 37 CFR 41.20(b)(1). The third party requester may appeal to the Board of Patent Appeals and Interferences with respect to any decision favorable to the patentability of any original or proposed amended or new claim of the patent by filing a notice of appeal and paying the fee set forth in 37 CFR 41.20(b)(1).

In addition, a patent owner who has not filed a notice of appeal may file a notice of cross appeal within **fourteen days of service** of a third party requester's timely filed notice of appeal and pay the fee set forth in 37 CFR 41.20(b)(1). A third party requester who has not filed a notice of appeal may file **a notice of cross appeal within fourteen days of service** of a patent owner's timely filed notice of appeal and pay the fee set forth in 37 CFR 41.20(b)(1).

Any appeal in this proceeding must identify the claim(s) appealed, and must be signed by the patent owner (for a patent owner appeal) or the third party requester (for a third party requester appeal), or their duly authorized attorney or agent.

*Any party that does not file a timely notice of appeal or a timely notice of cross appeal will lose the right to appeal from any decision adverse to that party, but will not lose the right to file a respondent brief and fee where it is appropriate for that party to do so. If no party files a timely appeal, the reexamination prosecution will be terminated, and the Director will proceed to issue and publish a certificate under 37 CFR 1.997 in accordance with this Office action.*

## REQUIREMENTS OF RESPONSES

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The requirements of 37 CFR 1.943 (c) in regard to the length of any briefs filed by either party will be strictly applied.

#### EXTENSIONS OF TIME

Extensions of time under 37 CFR 1.136(a) will not be permitted in inter partes reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to the patent owner in a reexamination proceeding. Additionally, 35 U.S.C. 314(c) requires that inter partes reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937)i Patent owner extensions of time in inter partes reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner's response is set by statute. 35 U.S.C. 314(b) (3).

#### SERVICE OF PAPERS

Any paper filed with the USPTO, i.e., any submission made, by either the Patent Owner or the Third Party Requester must be served on every other party in the reexamination proceeding, including any other third party requester that is part of the proceeding due to merger of the reexamination proceedings. As proof of service, the party submitting the paper to the Office must attach a Certificate of Service to the paper, which sets forth the name and address of the party served and the method of service. Papers filed without the required Certificate of Service may be denied consideration. 37 CFR 1.903; MPEP 2666.06.

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All correspondence relating to this *Inter Partes* reexamination proceeding should be directed:

Please mail any communications to:

By Mail to: Mail Stop "*Inter Partes Reexam*"

Central Reexamination Unit

Commissioner for Patents

P. O. Box 1450

Alexandria VA 22313-1450

By FAX to: (571) 273-9900

Central Reexamination Unit

By hand:

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Attn: Central Reexamination Unit

Randolph Building, Lobby Level

401 Dulany Street

Alexandria, VA 22314

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Signed:

/Majid A. Banankhah/

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