

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

METARAIL, INC.,
Patent Owner.

Case No. IPR2024-01272
Patent No. 10,152,734

**PETITION FOR INTER PARTES REVIEW
UNDER 35 U.S.C. §§311-319 AND 37 C.F.R. §42.1 et seq**

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APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,152,734 (“the ’734 patent”)
1002	Prosecution History of U.S. Patent No. 10,152,734
1003	Declaration of Dr. Edward A. Fox (“Fox”)
1004	Curriculum Vitae of Dr. Edward A. Fox
1005	Reserved
1006	U.S. Pat. App. Pub. No. 2006/0230033 to Halevy et al. (“Halevy”)
1007	Reserved
1008	Reserved
1009	Reserved
1010	Docket Sheet, <i>Metarail, Inc. v. Google LLC</i> , No. 1:23-cv-01116 (D. Del.)
1011	United States District Courts — National Judicial Caseload Profile, <i>available at</i> https://www.uscourts.gov/sites/default/files/fcms_na_appprofile0630.2024.pdf
1012	First Amended Complaint, <i>Metarail, Inc. v. Google LLC</i> , No. 1:23-cv-01116 (D. Del. Jan. 12, 2024), ECF No. 15
1013	Michael Uschold, <i>Ontology and database schema: What’s the difference?</i> , Applied Ontology, vol. 10, no. 3-4, pp. 243-258 (2015) (“Uschold”)
1014	Reserved
1015	Trip Advisor Press Release, “New Advertising Technology Delivers Results for Travel Marketers” (published Dec. 3, 2001) (“TripAdvisor”)
1016	Reserved

1017	Prosecution history of U.S. Patent No. 9,633,378
1018	Reserved
1019	Reserved
1020	U.S. Patent No. 8,150,979 to Oldham (“Oldham”)
1021	U.S. Pat. App. Pub. No. 2010/0057556 to Rousso et al. (“Rousso”)

MANDATORY NOTICES

A. Real Party-In-Interest

Petitioner is the Real Party-in-Interest.¹

B. Related Matters

A decision in this proceeding could affect or be affected by the following:

1. United States Patent & Trademark Office

The following U.S. patent applications claim priority to U.S. Patent No. 10,152,734 (“the ’734 patent”):

U.S. Patent Application No. 16/933,053, filed July 20, 2020.

The following *Inter Partes* Review proceedings involve patents in the same family as the ’734 patent:

IPR2024-01269 challenging U.S. Patent No. 10,789,626;

IPR2024-01270 challenging U.S. Patent No. 9,633,378; and

IPR2024-01271 challenging U.S. Patent No. 10,262,342.

2. U.S. District Court for the District of Delaware

A decision in this proceeding could affect or be affected by the following:

Metarail, Inc. v. Google LLC, Case No. 1:23-cv-01116 (DDE).

¹ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

C. Counsel and Service Information - § 42.8(b)(3) and (4)

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A power of attorney is submitted with the Petition. Counsel for Petitioner consents to service of all documents via electronic mail.

I. INTRODUCTION

Google LLC (“Petitioner”) requests *inter partes* review and cancellation of claims 1-20 (the “challenged claims”) of U.S. Patent No. 10,152,734 (“the ’734 patent”) (Ex-1001).

The ’734 patent² is directed to a deep-linking system for “automatically generat[ing]” online ads. Ex-1001, Abstract. The ’734 leverages known technologies such as presenting targeted ads based on a user location including known methods of “deep-linking.” *Id.* 2:15-65. That is, the ’734 patent acknowledges that “deep-linked” or “parameter-based” digital advertising technologies were known at the time of filing. *Id.*, 2:51-65. In such prior art systems, search parameter values provided by a user to one site (e.g., travel location and dates) are “passed along with each ad click to the appropriate advertiser.” *Id.*, 2:57-59. Advertisers use these passed-along parameters, for example, to “automatically activate searches” from the advertiser’s homepage,

² The ’734 patent, unlike its related patents (IPR2024-01269, -01270, -01271), claims a network data source that is embodied on a computer in which a so-called “universal variable mapper” is also “maintained” by that same computer. The related patents only require the universal variable mapper be “accessible” by a computer. For this reason, the grounds of this petition are different.

“thereby landing the web user ‘deep’” into a website rather than on the advertiser’s homepage. *Id.*, 2:59-65; Fox, ¶35.

The ’734 patent alleges that the problem with such prior art “deep-linked” or “parameter-based” ad systems was that the mapping between the parameter fields in a publisher’s site and the corresponding fields in an advertiser’s site had to be “manually created by developing programmatic integrations between” the fields on the publisher’s site and the fields on the advertiser’s site (e.g., “by manual code”). Ex-1001, 3:5-18. The ’734 patent simply purports to automate these mappings. *Id.*, Abstract, 1:41-51, 3:34-35, 3:51-62, 4:56-58; Fox, ¶36.

As shown in Fig. 11B below, the ’734 patent claims a “universal variable mapper” 613 that is formed in a memory by crawling Internet websites to identify website form data. Ex-1001, 8:49-62. Once a form is identified, the crawler “obtain[s] ... the variables and identifiers” on the form. *Id.*, 9:45-51. The names of the variables or identifiers “are then archived in” the “universal variable map.” *Id.*, 12:51-52. The universal variable map also includes “normalized variables” that are “linked” to the names of the variables and identifiers obtained from the crawled forms found on various sites to allow for the automated creation of deep-links (e.g., links that pass values from the text field in Search Engine 1 to corresponding fields at Search Site 1). *Id.*, 6:60-64, 12:53-55. In this way the universal variable “mapper” automates the previously manual variable link process.

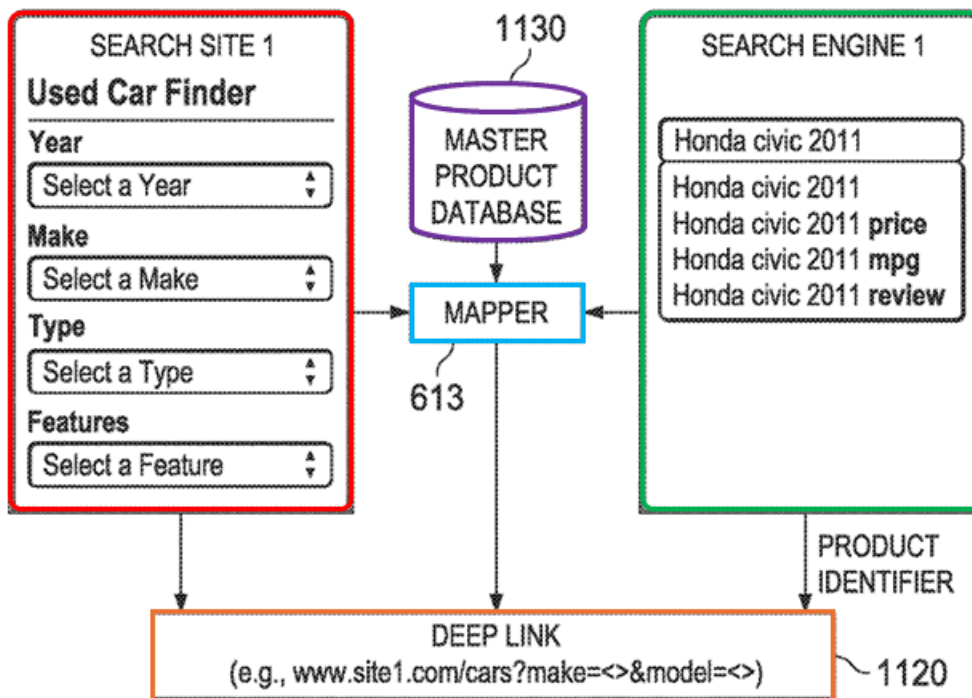


FIG. 11B

The '734 patent issued without substantive discussion in the examination record as to prior art. *See* Ex-1002, 45-47. Yet, as the '734 patent concedes, serving a parameter based deep-link on one site to repurpose the search parameter values to a target site of the deep-link was well-known. While the '734 patent purports to have invented automating the creation of such deep-links via its universal variable map, this too was known.

As explained herein, **Oldham** (Ex-1020), like the prior art described in the '734 patent, discloses a server that serves deep-linked advertisements based on a user search query where user attributes are inserted into the advertisement's URL to form the deep-link. The deep-link, when selected by the user, lands the user at a dynamic webpage at the advertiser's website based on the inserted user attributes.

Automating parameter gathering through web spidering/crawling and linking parameter mappings to create deep-links was also well known as disclosed by **Halevy** (Ex-1006). As such, at the time of the '734 patent filing, automating the manual process of gathering and linking parameters to create deep-links across websites was obvious to a POSA to avoid tedious manual coding of such link associations. Ex-1001, 3:14-23 (evidencing knowledge known in the art). Indeed, automating a manual process is *de facto* obvious. MPEP §2144.04(III). Moreover, automating this formerly manual parameter association and parameter linking offers greater scalability for deep-link creation. *Infra* §§VI.A and VI.C.

Accordingly, Petitioner respectfully requests *Inter Partes* Review of claims 1-20 be instituted, and these claims be canceled as unpatentable.

II. REQUIREMENTS FOR IPR

A. Grounds for Standing (37 C.F.R. §42.104(a))

Petitioner certifies that the '734 patent is available for IPR and Petitioner is not barred or estopped from requesting IPR as to the challenged claims.

B. Specific Art on Which the Challenge is Based

Petitioner relies on the following prior art:³

³ Petitioner does not challenge the priority chain of the '734 patent as the art predates the earliest date, but reserves the right to do so in other proceedings.

Name	Ex.	Filing Date	Issue/Pub. Date	pre-AIA §
Halevy	1006	2006-04-05	2006-10-12	102(b)
Oldham	1020	2007-06-04	2012-04-03	102(e)
Rousso	1021	2006-04-12	2010-03-04	102(e)

C. Identification of the Challenge (37 C.F.R. §42.104(b))

Petitioner requests IPR of the challenged claims and that the Board cancel the same as unpatentable on the following grounds:

Ground Number and Reference(s)		Claims	Pre-AIA Basis
1	Oldham in view of Halevy	1-5, 8-12, 15-19	§103(a)
2	Oldham & APA in view of Halevy	1-5, 8-12, 15-19	§103(a)
3	Oldham & Halevy in view of Rousso	6-7, 13-14, 20	§103(a)
4	Oldham, APA, & Halevy in view of Rousso	6-7, 13-14, 20	§103(a)

III. BACKGROUND

A. The '734 patent

The '734 patent is directed to automatically generating deep-linked ads via the use of a so-called “universal variable map.” Ex-1001, Abstract. As discussed above, the universal variable map is a collection of the “names” of the variables and identifiers of the fields on web forms found by crawling Internet websites and applications. *Id.*, 9:27-34, 12:32-47. These “names” are stored in the universal variable map and associated with “normalized variables.” *Id.*, 5:48-52, 12:50-55.

These normalized variables serve as links between corresponding fields of multiple Internet sites that were previously correlated manually to create parameter-value-passing deep-links. *Id.*, 5:48-52; Fox, ¶34.

Figure 11B (below) illustrates the process for using the universal variable map in generating deep-linked ads for a user visiting a search engine website (e.g., Search Engine 1). Here, the universal variable mapper 613 is used “to provide to its visitors a deep-linked ad for Search Site 1,” which is a search site for a “Used Car” in the same “vertical” (i.e., website category) as the user’s search query:

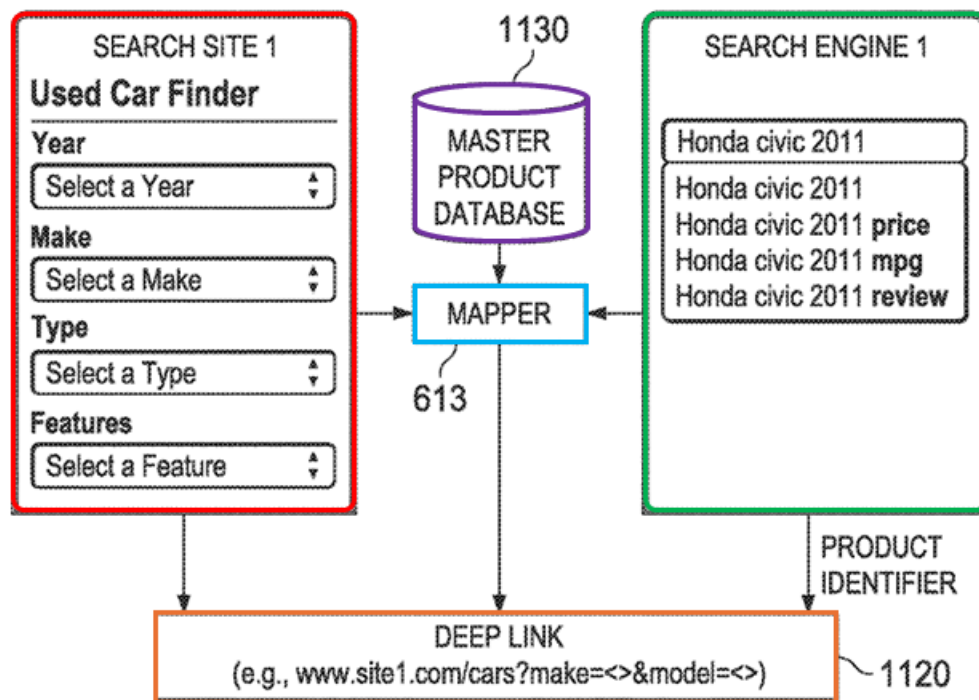


FIG. 11B

Ex-1001, 16:59-60, 17:16-19; Fox, ¶37. To generate the deep-linked ad, mapper 613 accesses the universal variable map of Master Product Database 1130, “cross

reference[s] programming variables⁴” determined from the search query on **Search Engine 1** “with those used by **Search Site 1**, and automatically create[s] a deep-linked ad (**deep-link 1120** in this example).” Ex-1001, 16:59-17:19; *see, e.g., id.*, 10:51-11:13. The **deep-linked ad** is placed on **Search Engine 1** so that when a user selects the ad, “the user’s browser is automatically directed to a network address indicated by **deep-link 1120**” to **Search Site 1**, which provides a landing page with content corresponding to the query string entered on **Search Engine 1**; for example, in directing the user’s browser to the deep-link location, the form at **Search Site 1** may “be pre-populated with field identifier values ..., along with any user input provided at **Search Engine 1**,” for example, user-entered values in the query string “Honda Civic 2011” are mapped to their corresponding fields at **Search Site 1** for “Year,” “Make,” and “Model.” *See id.*, 17:2-18, Fig. 11B; Fox, ¶37.

The purported improvement that the above-described process provides over the prior art is the automating of the manual process of “mapping” values entered by the user on one site to corresponding fields on another site. Ex-1001, 3:24-25. The automation of this previously manual process involves the universal variable

⁴ The ’734 patent uses the terms “programming variable,” “variable,” “field identifier,” and “identifier” interchangeably. *See* Ex-1001, 5:5-8, 12:12-19, 12:32-36, 16:23-27.

map that stores a collection of website data organized by content (i.e., “verticals”). *Id.*, 9:10-23, Figs. 4, 5. As described in Figure 11B above, this data is used to automatically generate a deep-link that maps the data a user entered in a field of a first website to the variables or field identifiers of corresponding fields of the advertiser’s website. *Id.*, 16:59-17:8; Fox, ¶38.

B. Prosecution History

The ’734 patent issued after Applicants filed a terminal disclaimer to overcome the only rejection entered by the Examiner, finding that the claims were not patentably distinct over the claims of its parent (U.S. 9,633,378). *See* Ex-1002, 45-46, 107-09, 147-48. No substantive prior art rejections were applied.

IV. LEVEL OF ORDINARY SKILL IN THE ART

The ’734 patent relates to web-based e-commerce. A person of ordinary skill in the art (“POSA”) would have had a bachelor’s degree in computer science or a related field, and at least two years of experience with web programming and search engine systems. Fox, ¶32. More education could substitute for experience, and vice versa. This person would have been capable of understanding and applying the teachings of the ’734 patent and the prior-art references discussed herein. *Id.*

V. CLAIM INTERPRETATION

Claim terms subject to IPR are to be construed in accordance with their ordinary and customary meaning as understood by a POSA in light of the

specification and prosecution history. 37 C.F.R. §42.100(b). Only terms necessary to resolve the controversy need to be construed. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Petitioner reserves the right to argue different constructions in any other actions involving the '734 patent.

VI. GROUND 1: CLAIMS 1-5, 8-12, AND 15-19 ARE OBVIOUS OVER OLDHAM IN VIEW OF HALEVY

A. Oldham – Serving Deep-Link Advertisements

Oldham (Ex-1020)⁵ discloses systems and methods for serving advertisements to a user based on user search queries and user attributes, including the user's geographic location. Oldham, 6:40-54. Oldham's system includes an "external engine 105" connected to a network (e.g., the Internet) that users interact with via a webpage displayed on a computer device's web browser (e.g., desktop computer, laptop, smartphone, PDA, etc.). *Id.*, 4:35-46. The external engine includes a search engine (SE) 115 and an advertisement engine (ADE) 120 that both return results (e.g., search results and advertisements) based on search query keywords entered by the user. *Id.*, 4:46-48, 4:63-5:2. Figs. 1 (below), 2.

⁵ Oldham is assigned to Petitioner, Google LLC.

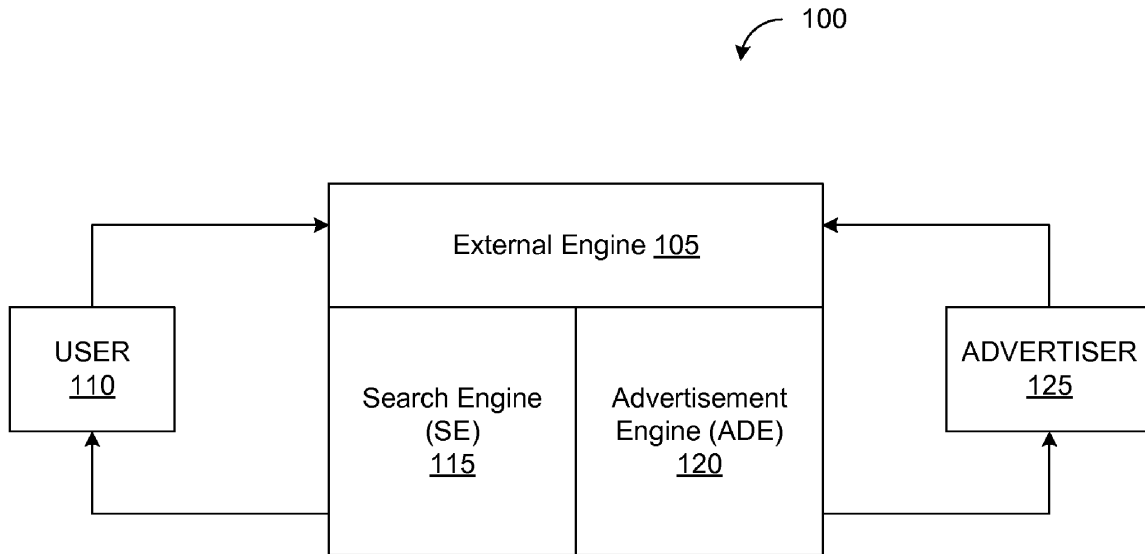


FIG. 1

Users interact with the external engine via a web browser displaying “a web page on the web site of the external engine 105.” *Id.*, 5:7-11. This webpage is “designed to allow a user 110 to enter a query string” that is then used by the SE and ADE to search for content and advertisements relevant to the query. *Id.*, 5:15-17, 5:25-28 (“[T]he ADE 120 can be operatively coupled to the SE 115 such that the ADE 120 can identify advertisements relevant to the user 110 based on the query string that the user 110 provides to the SE 115.”), 5:53-6:16, Fig. 2 (below).

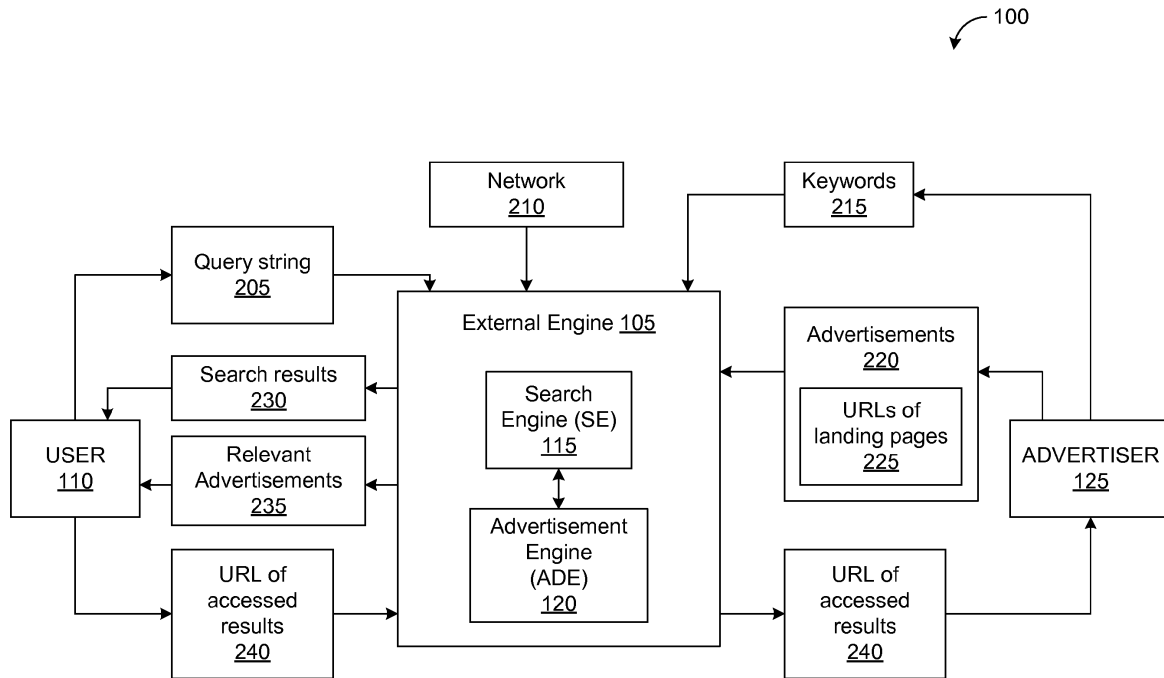


FIG. 2

The ADE identifies “relevant advertisements 235” from a user’s query by comparing keywords provided by the advertiser to keywords identified in the user’s query (*id.*, 6:18-25, 9:12-23), and user attributes determined by the external engine, such as the user’s geographic location. *Id.*, 5:41-52, 6:40-54.

Advertisements displayed on the external engine’s webpage include URLs to landing pages specific to products or services that advertisers offer at the user’s location. *Id.*, 6:26-39, 9:24-29. These URLs are provided by advertisers and, when modified by the external engine inserting the user’s attributes, become deep-links that direct the user to a landing page at the advertiser’s website that presents content specific to the advertiser’s products and services, and to the user’s attributes (e.g., location). *Id.*, 6:55-7:3, 9:24-58. These landing pages include

dynamically generated content based on parameter values assigned to field identifiers provided in the URL. *Id.*, 6:59, 9:59-10:8. For example, an advertiser offering products or services in several locations may generate a landing page based on the user's location attribute by the external engine assigning location values according to the attribute to corresponding field identifiers in the landing page URL. *Id.*, 6:55-7:3, 9:24-58, 9:59-10:8 (describing examples where location values are assigned to field identifiers in the advertiser's URL using <identifier=value> pairs).

POSAs would have recognized that Oldham's generated URLs with the user location attributes inserted are deep-links because they include parameter values associated with field identifiers on the advertiser's website so that the advertiser's website dynamically generates a landing page specific to the advertiser's products and services, and the user's location. *Compare* Oldham, 10:4-8 (showing a URL with field identifiers having values based on the user's location attributes in an <identifier>=<value> format, e.g., "state=CA"), *with* Ex-1001, 17:3-8 (showing a deep-link with fields and values in the same <identifier>=<value> format); Fox, ¶48. POSAs thus would have understood Oldham to teach an example of "deep-linked" or "parameter-based" digital advertising acknowledged as prior art in the '734 patent. Ex-1001, 2:51-65 ("These search parameters are then passed along

with each ad click to the appropriate advertiser” to “land[] the web user ‘deep’ into” the advertiser’s website.); Fox, ¶48.

1. Oldham Relies on URLs Provided by an Advertiser

In Oldham’s system, advertisers provide URLs to their landing pages to the advertisement engine (ADE). Oldham, 9:24-26. These “received URLs” conform to a syntax both “designed to receive one or more user attribute values” and “designed to comply with pre-determined formats.” *Id.*, 9:48-51. For example, an advertiser may provide a URL in the predefined format “www.advertiser.com/<insert city value here>.html” so that the external engine can insert the user’s city parameter in the URL, *e.g.*, “www.advertiser.com/city=MountainView.html.” *Id.*, 9:39-48. These predetermined formats enforced by the external engine would have been recognized by POSAs as placing the burden on advertisers to manually provide a compliant URL for each advertisement to benefit from the external engine’s generated deep-links with inserted user parameter values. *Id.*, 9:55-58; Fox, ¶49.

This burden was known to POSAs to exist with prior art systems that generate deep-linked advertisements, as acknowledged by the ’734 patent:

To make deep-linked ads work, dynamic data from the publisher’s site or app needs to be input into the appropriate locations on the advertiser’s site or app, enabling it to “fast-forward” the user click deep into its conversion funnel.... So far in the industry, these deep-linked

ad connections have been manually created by developing programmatic integrations between variables and fields on the publisher web site and the advertiser web site, created by manual code.

Ex-1001, 3:5-18; Fox, ¶50.

Like the prior art described in the '734 patent, POSAs would have recognized that Oldham's system placing the burden on advertisers to provide compliant URLs for each advertisement to benefit from Oldham's URL data insertion would have similarly been "a time and resource intensive activity that multiplies as the size of the network grows, limiting the size, scale and market adoption for deep-linked ads." Ex-1001, 3:24-27; Fox, ¶51. POSAs thus would have been similarly motivated to improve Oldham's system to automatically generate deep-linked URLs to advertiser websites based on search query keywords and user attributes, thereby alleviating the advertiser of the burden of providing compliant URLs for each advertisement to the external engine. Ex-1001, 3:34-40; Fox, ¶51.

As the '734 patent admits, POSAs were aware that to make these deep-linked ads work, the parameters entered by the user from the first site needed to be input into the appropriate variables on the second site. Ex-1001, 3:5-12, Fox, ¶52. Accordingly, a POSA would have found it obvious to employ such deep-links in Oldham's advertisements to ensure that a user would enjoy a streamlined experience across other websites by alleviating the user from the burden of

entering the same values in various fields on different websites. TripAdvisor, 1; Fox, ¶52; Ex-1001, 2:51-65.

B. Halevy

Halevy (Ex-1006)⁶ teaches one such search system for automatically generating deep-links by querying a “form database” with a query string. Halevy, [0009]. Halevy’s form engine and database that, like the ’734 patent’s universal variable “mapper,” automatically maps fields on forms from different websites to a shared set of identifiers (i.e., “properties”) determined from the form data, thereby mapping corresponding fields across various website forms to each other. *Id.*, [0037], Fig. 2; Fox, ¶54.

1. Halevy Automatically Maps Data Fields of Website Forms for Creating Deep-links

To create the form database, Halevy teaches a web crawling process (*see* Fig. 1 below) executed by a form engine 106 that “accesses a number of forms 121-123 which are hosted on servers located throughout network 110.” Halevy, [0035]. These forms are “obtained” from “a number of sources” and provide “access to data within underlying databases 131-133.” *Id.*, [0035], [0037], Fig. 1.

⁶ Halevy issued as U.S. Patent No. 8,037,068 and is assigned to Petitioner, Google LLC.

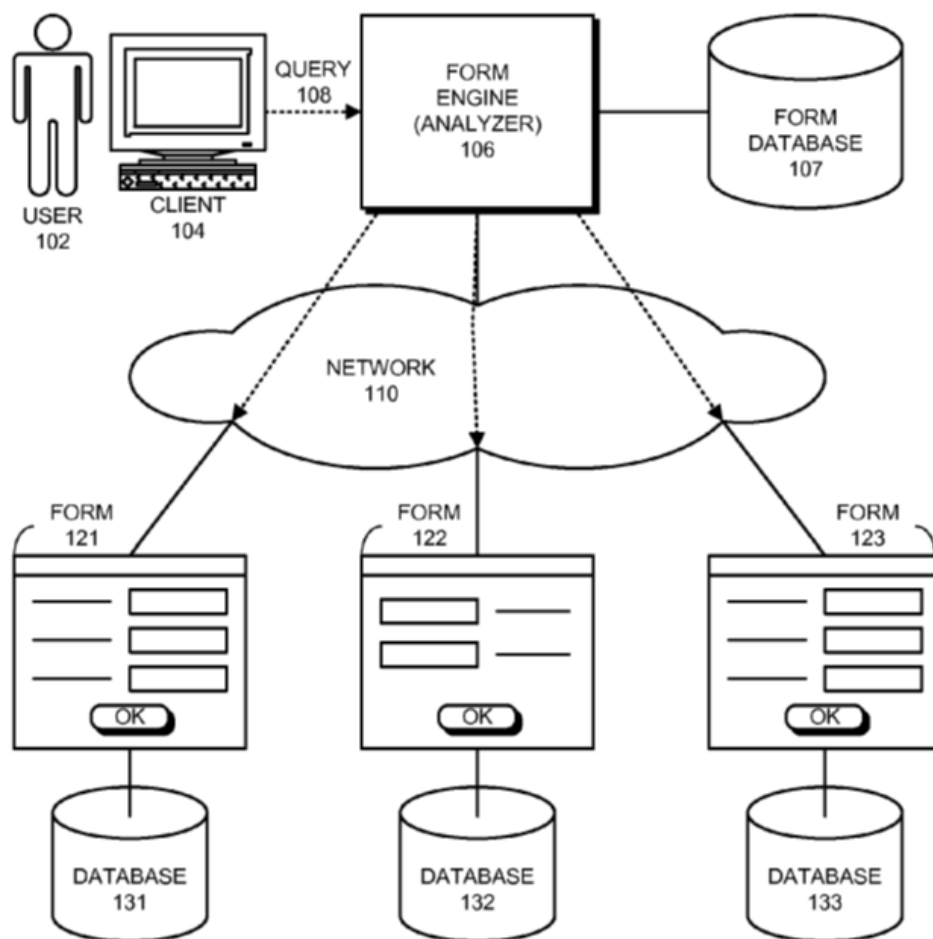


FIG. 1

Once forms are identified, as discussed in more detail *infra* §VI.D, Halevy’s crawling process “creates database entries for the identified forms” by “obtaining and storing metadata describing the identified forms into database entries” in the form database 107. *Id.*, [0009], [0015]. The stored “metadata” includes data describing the “input fields” on the form, such as the field’s “parameter name” or field identifier. *Id.*, [0016], [0037], [0044], Fig. 2; Fox, ¶56.

2. Universal Variable Map (Form Database)

For each form entered in the form database, Halevy's process computes a "class" for the website the form is found on (e.g., a "university" or "newspaper" website) and a "class" for the form itself. The form's "class" indicates "the types of objects that can be obtained by querying the form," such as "books, hotels, restaurants" and "houses, jobs, and cars for sale." Halevy, [0039-45], [0057]; Fox, ¶57. Halevy refers to the "classes" as "SO-classes," or "search ontology" classes. Halevy, [0038], Fig. 6; Fox, ¶57. The classes in turn have "SO-properties" or "search ontology" properties; these properties, which are also referred to as "output properties," represent "the type of information [that is] obtain[ed]" by using the form. Halevy, [0038], [0048]; Fox, ¶57.

For example, if a form's "SO-class" is identified as "car," then the fields in the form are mapped to the "SO-properties" (i.e., normalized variables) for the "car" class such as the properties for "make" and "model" of the car. Halevy, [0095], [0098-101]; Fox, ¶58. Likewise, POSAs would have understood that if the form's "SO-class" is identified as "hotel," then the fields in the form may be mapped to the "SO-properties" for the "hotel" class such as "arrival date," "departure date," and "location." Fox, ¶58. POSAs also would have understood that other classes of forms such as "amusement park," "car rental," "airline," etc., or more generally, "reservations" would similarly map relevant fields to that

class's SO-properties. *Id.* Halevy also computes a “schema mapping,” which is a “mapping between the fields in the form and the SO-properties.” Halevy, [0049], [0062-67]; Fox, ¶58.

As shown in Figure 3 (annotated below), for each form, Halevy's form database stores the identified class of the form, data for each field (including the parameter name), and the mapping between the fields on the form and the corresponding properties of the form's class. Halevy, [0044-49] (“For each form in the source [i.e., website] the following information can be captured ... [f]ields in the form ... include[ing] its parameter name ... [t]he class of the form ... [and the] [s]chema mapping”), [0067], [0125]; Fox, ¶59.

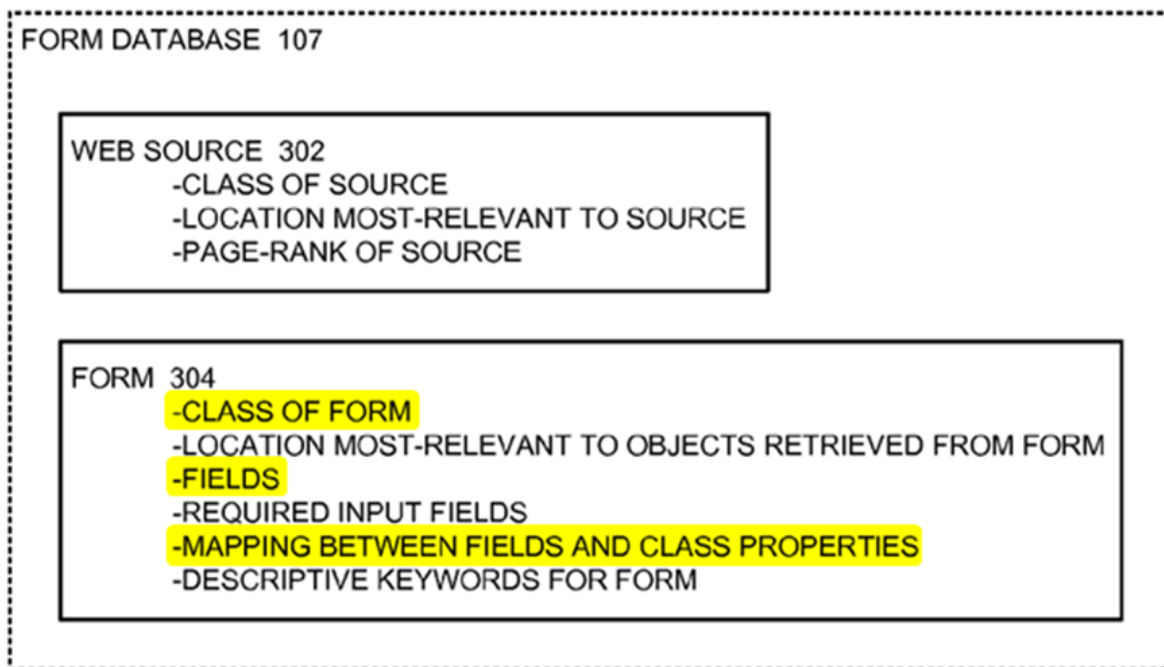


FIG. 3

The class and properties identified for the various forms are then used to “facilitate subsequent searches through content which is accessible through” the forms. Halevy, [0009], [0136-38], Fig. 2. This search process, explained in detail directly below, accepts a query string, and via the form database’s hierarchy of classes and their properties, returns a list of deep-links to various identified forms in the database with the keywords of the query assigned to fields in the deep-link based on mapping the keywords and the form’s fields to the same SO-properties. *Id.*, [0018], [0136-38], [0125] (describing mapping query keywords to form fields using the SO-properties); Fox, ¶60.

This use of the form database shows that Halevy maps corresponding form fields from different websites to the same SO-property to provide search capabilities on multiple forms that return similar data, despite the fields on each form having different parameter names. Fox, ¶61; *see also* Halevy, [0062-66] (describing mapping fields to SO-properties), [0125] (describing identifying forms by mapping query keywords to fields based on mapping the keywords to the same SO-properties).

3. Retrieving Deep-Links from the Form Database

Halevy teaches querying its form database to return a list of relevant “query-through links.” Halevy, [0136-38]; Fox, ¶62. Each of the query-through links automatically directs the user to either a results webpage or a partially filled form

at the website identified in the link (Halevy, [0138], [0143]), with the keywords in the query associated with corresponding parameter names of the form's fields. *Id.*, [0123-28] (describing generating deep-links with query keywords associated with corresponding field parameters based on the SO-properties determined for the keywords and fields); Fox, ¶62.

This query process is diagrammed in Halevy's Fig. 6 (below) where the system "receives a query containing keywords (step 602)" and "predicts a search-ontology class for the query based on the keywords (step 604)." Halevy, [0136]. The system then "constructs a structured query" by "mapping keywords to [SO-] properties" of the predicted class (step 606). *Id.* For example, Halevy describes converting an example user query "Telephone David Ko 98102" to a structured query in the "Person" SO-class, with the "FirstName" SO-property assigned the value "David," the "LastName" SO-property assigned the value "Ko," and the "ZipCode" SO-property assigned the value "98102." *Id.*, [0112]; Fox, ¶63. Using this structured query, Halevy's system "performs a lookup" in the form database "to identify forms of interest (step 608)," which are "rank[ed]" and then "present[ed] the user" as "query-through links" (step 612). Halevy, [0114], [0137-38]; Fox, ¶64. Each query-through link, when clicked by the user, "submit[s] a query to the associated form of interest (step 614)" by prepopulating the form's

fields with their associated keywords, as determined by the SO-property mapping.

Halevy, [0136-38]; Fox, ¶64.

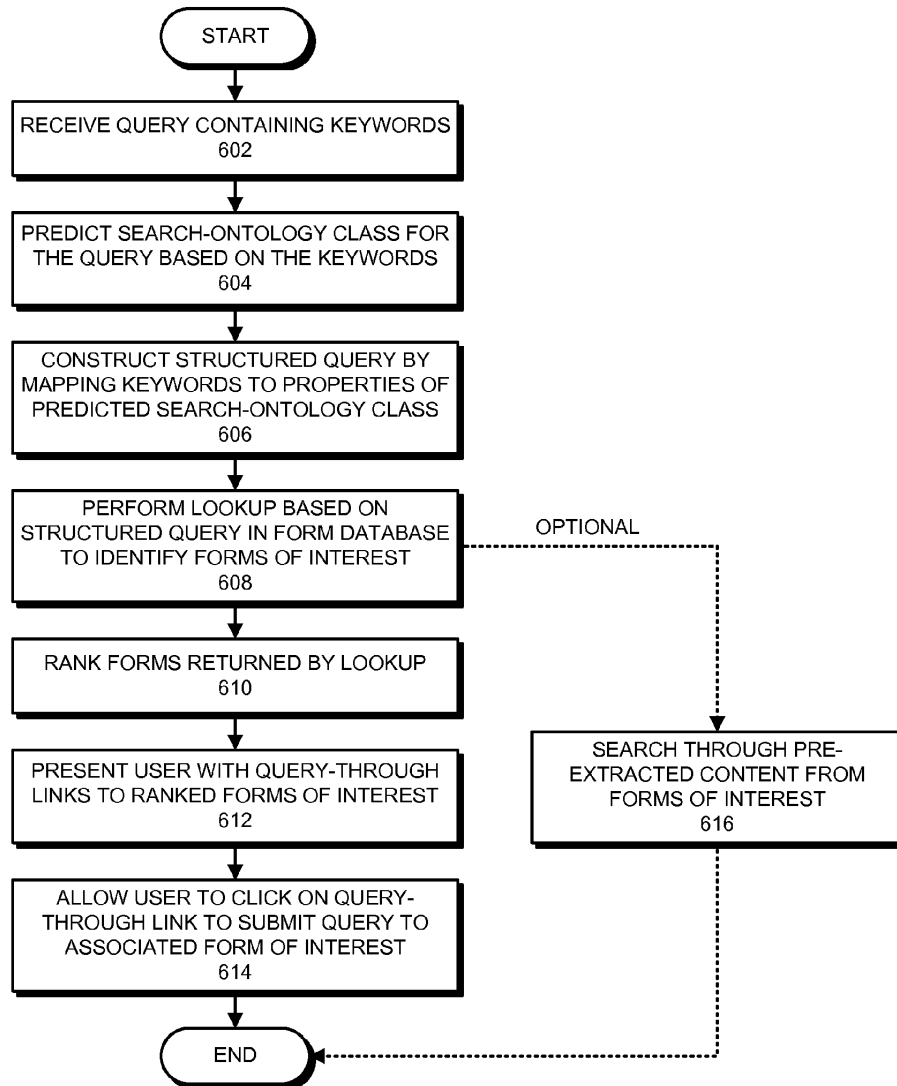


FIG. 6

Because Halevy’s query-through links (each to a “form of interest”) include an association of query keywords to corresponding field parameter names to automatically generate search results from the linked form using the keywords as values in the form’s fields, POSAs would have recognized the query-through links

to be deep-links that repurpose the query keyword values. Halevy, [0123-28], [0136-38], [0143]; Fox, ¶65. Furthermore, because Halevy discloses that a single structured query (with keywords of the query mapped to SO-properties) returns *multiple* query-through links (with keywords mapped to corresponding fields based on the SO-property mapping), POSAs would have understood Halevy's system to map corresponding form fields from different websites to the same SO-properties (i.e., obviously, because otherwise returning multiple deep-link results from a single query would not be possible). Fox, ¶65.

Since Halevy describes its search system functionality in one example as an enhancement to conventional network-based search engines (Halevy, [0007-08]), POSAs would have found it obvious to modify Oldham with the teachings of Halevy such that Oldham's external engine (i.e., a search engine discussed *supra* §VI.A) would benefit from Halevy's automated solution for generating deep-links, as discussed *infra* §VI.C. Fox, ¶66.

C. POSA's Motivations to Modify Oldham in view of Halevy

As discussed *supra* §VI.A, Oldham teaches an external engine that displays search results and advertisements to users based on the user's search query and the user's attributes (e.g., location). Oldham, 4:34-56, 5:39-45, 5:53-56, 6:17-25; Fox, ¶71. Additionally, as discussed *supra* §VI.A, a POSA would have been motivated to improve Oldham's system so that the deep-links provided in the displayed

advertisements reuse the values from the user-entered query string, as it was known that advertisers would benefit from repurposing these values. Fox, ¶71; TripAdvisor, 1.

Oldham's advertisements rely on the advertiser *manually* providing a landing page URLs for each advertisement that complies with the format and syntax dictated by the external engine, as noted *supra* §VI.A. Oldham, 9:24-28, 9:50-58; Fox, ¶72. Rather than requiring a person associated with the advertiser to manually enter these URLs, POSAs would have been motivated to look to an automated solution for Oldham's system to generate deep-links for advertisements that reuse values (e.g., keywords) already in the user's search query to leverage at other websites. Fox; ¶72; TripAdvisor, 1. Halevy teaches one such system for automatically generating deep-links to other websites with the keywords from a query string assigned to corresponding field identifiers in the deep-link. Fox, ¶73. A POSA would have been motivated to modify Oldham's system with Halevy's teachings as detailed below.

Halevy discloses an improvement to search systems like Oldham by providing the ability to search behind web-based forms. Halevy, [0007-09]; Fox, ¶74. Halevy's system includes a "form engine" that "exist[s] on any computing device which is accessible through [a] network" using "any type of ... communication channel capable of coupling together computing nodes." Halevy,

[0034]; Fox, ¶74. Halevy's system also includes a "form database" used by the form engine to "facilitate searches through content which is accessible through the web-based forms which are cataloged within form database 107." *Id.*, [0036].

As discussed *supra* §VI.B.3, Halevy teaches allowing end-users to query the form database to retrieve deep-links. Halevy's system generates deep-links by determining keywords from the query to identify a "search class" for the query, "mapping the individual words in the query to properties of the chosen search class," and performing a look-up in the database with the class and property mapping. Halevy, [0089-92], [0112], [0137-38]; Fox, ¶75. Halevy describes using various types of "prediction" to perform its identification and mapping process. Halevy, [0090-111]; Fox, ¶75.

To automatically generate deep-links for advertisements that repurpose user-entered search queries, as discussed above, a POSA would have been motivated to modify Oldham's external engine to retrieve deep-links for advertisements automatically by providing the user's search query and the user's attributes to Halevy's form engine. Fox, ¶76. A POSA would have found it obvious to use Halevy's form engine to automatically generate these deep-links because Halevy's system returns one or more deep-links relevant to a query's keywords, with some of the keywords mapped to corresponding field identifier names in the deep-link. Fox, ¶76. POSAs would have recognized that Halevy's form engine and database

would have been implemented in Oldham's external engine. Fox, ¶76. This is because Oldham teaches that the external engine is an Internet search engine that returns search results and advertisement based on a query string (Oldham, 4:34-56, 5:63-6:2), and Halevy teaches that its form engine and database functionality is an improvement on search engines by providing for searching of content behind web-based forms based on a query string (Halevy, [0007-09], [0018]). This would have allowed Oldham's external engine to benefit from Halevy's improvement of generating deep-links based on a query string by the external engine passing the user-entered query string and user attributes to Halevy's form engine (*see, e.g.,* Oldham, 9:6-8) when determining an advertisement to display. Fox., ¶77.

POSAs would have recognized that Oldham's system would benefit from using Halevy's deep-link generation in this way would have allowed the external engine to present deep-linked advertisements that pass query keywords and user attributes to the advertiser's website using Halevy's deep-link, rather than relying on the advertiser to provide a compliant URL for each advertisement to receive user attributes in a URL. *See* Oldham, 11:22-34; Fox, ¶78. POSAs would have recognized that using Halevy's deep-links in Oldham's advertisement would have provided advertiser websites with keywords of the user's query and the attributes, so that advertisers would continue to "display landing pages based on each

attribute or combinations of attributes” in addition to the user’s query. Oldham, 11:28-33; Fox, ¶78.

Accordingly, POSAs would have recognized that Oldham’s system would benefit from using Halevy’s mapping of user query keywords to the advertiser’s website field identifiers in selecting advertisements for display, as this would have been a more robust and automatic way to generate advertisements based on Halevy’s deep-links; as it was known to be desirable to yield better results while alleviating advertisers of the burden of manually providing compliant URLs to its website for each advertisement. Fox, ¶79; Ex-1001, 2:66-3:4; TripAdvisor, 1. Likewise, POSAs would have reasonably expected success in implementing Halevy’s form engine and database functionality with Oldham’s system using conventional programming techniques known to POSAs. Fox, ¶80.

D. Claim-by-Claim Analysis

In the discussion below, “Oldham/Halevy” refer to the combination of Oldham in view of Halevy described *supra* §VI.C, and “Oldham” or “Halevy” refer to the references’ respective disclosures. Fox, ¶86.

1. Claim 1

a. [1PRE] “A method, comprising:”

Oldham teaches a method implemented in a search engine for serving advertisements on a webpage with “dynamically generat[ed] uniform resource locators (URLs) based on specific attributes of a user and providing the generated

URLs to an advertiser.” Oldham, 1:32-35. As discussed *supra* §VI.C, an example of performing Oldham’s method—when Oldham utilizes Halevy’s form engine to dynamically generate URLs with user search query value and user attributes—includes serving advertisements on webpages with deep-links that reuse the values entered by the user in search queries entered on the webpage. As detailed *infra* §VI.D.1.b-VI.D.1.g, this method *comprises* the remaining limitations of claim 1. Fox, ¶87.

- b. **[1A] “in response to a user interacting with a user interface of a networked data source on a user device, accessing a universal variable data database, the universal variable data database representing a universal variable map of searchable classes and attributes of products or services on the Internet, the accessing performed by a computer having a processor and a non-transitory computer-readable medium, the universal variable data database maintained by the computer;”**

As discussed *supra* §VI.A, Oldham teaches an external engine 105 that “present[s] a first web page on a website to a user 110.” Oldham, 5:3-5. The webpage (e.g., “landing page”) is presented in a web browser operating on the user’s computing device (e.g., a desktop computer, laptop computer, smart phone, PDA, etc.) connected to the Internet. *Id.*, 4:34-46, 5:2-15. POSAs would have recognized that Oldham’s webpage presented by the external engine to the user’s device via the Internet is “*a user interface of a networked data source on a user device.*” Fox, ¶88. Oldham’s webpage is “designed to allow” the user “to interact

with the external engine 105” by, for example, “enter[ing] a query string.”

Oldham, 5:11-15. Thus, the user entering a query string into Oldham’s webpage is “*a user interacting with*” the “*user interface of a networked data source.*” Fox, ¶88.

As discussed *supra* §VI.C, in Oldham/Halevy, Oldham’s external engine 105 receives the query string from the webpage and submits it to Halevy’s form engine, which serves advertisements on the webpage with deep-links generated by querying Halevy’s form database. Fox, ¶89. Thus, in Oldham/Halevy, Halevy’s form engine *accesses* the form database “*in response to the user interacting with the user interface of the networked data source.*” Fox, ¶89. POSAs would have recognized that Halevy’s form database is a “*universal variable data database representing a universal variable map of searchable classes and attributes of products or services on the Internet*” as follows.

As discussed *supra* §VI.B.1, Halevy’s form engine executes a crawling process that categorizes webpages and forms according to a “schema” (i.e., a model/structure) consisting of a “search ontology” (SO) of “classes and properties.” Halevy, [0038]; *see* Uschold (Ex-1013), p.1 (defining and explaining “ontology” and “database schema”). The “SO-classes” are identified for each form and used to map the fields in the form to “SO-properties,” as shown below in annotated Figure 3. Halevy, [0039-41], [0045], [0049], [0062], [0067]; Fox, ¶90.

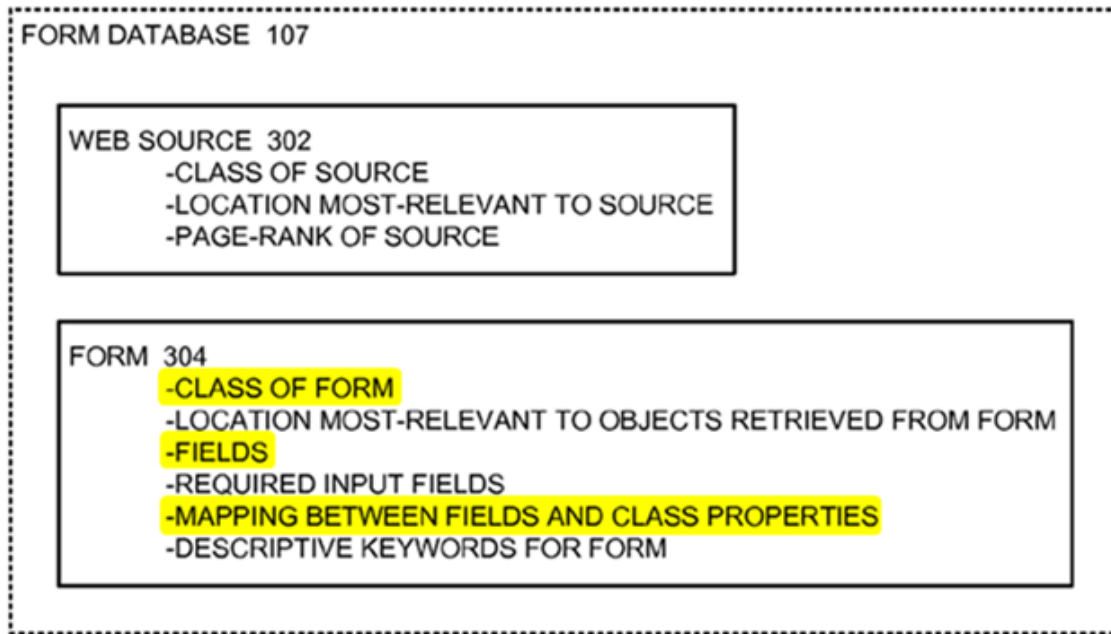


FIG. 3

The SO-properties (i.e., normalized variables) are associated with SO-classes and are derived from the “output properties,” described as “the type of information ... obtain[ed]” from querying the form. Halevy, [0048], [0062], [0067]. As discussed *supra* §VI.B.3, multiple different forms on different websites (i.e., universal) can map to the same SO-classes, and likewise, fields from different forms can map to the same SO-properties. Halevy, [0035], [0037], [0067], [0095], Fig. 2; Fox, ¶91. For example, for forms that identify in the SO-class “car,” the fields are mapped to their corresponding SO-properties, such as “make” and “model” associated with the “car” SO-class. Halevy, [0095], [0098-101]; Fox, ¶91. Since Halevy’s crawling process maps the fields of various web forms to a set of SO-properties associated with the form’s identified SO-class, POSAs would have

recognized the SO-properties to be “*universal variable data*” and the form database’s collection of SO-properties to be “*universal variable data database*.” Fox, ¶92; See Ex-1001, 5:9-14 (describing a “*universal variable map*” as a collection of “handshakes between each gathered variable and the corresponding normalized variable”).

Halevy’s disclosure of the form database in which corresponding fields from different forms on different websites map to the same SO-properties based on the SO-class identified for the form would have been recognized by a POSA as what the ’734 patent refers to as a *universal variable map*. See Ex-1001, 20:44-48 (“Variations of linking data variables and fields may include a source form, a destination form, ***a single source to many destination form***, many sources to one destination form” (emphasis added)); Fox, ¶93. Halevy’s form database thus “*represent[s] a universal variable map*” that is “*searchable*” because as noted *supra* §§VI.B.3 and VI.C, Oldham’s external engine receives a search query from the user and submits the query to Halevy’s form engine to *search* the collection of SO-classes and SO-properties to retrieve a list of deep-links from the form database, each to a “form of interest.” Halevy, Abstract, [0137-38]; Fox, ¶93.

As also discussed *supra* §§VI.B.3 and VI.C, the query submitted to Halevy’s form database maps the keywords to “properties of the chosen search[-ontology] class” identified for the query. Halevy, [0089], [0136]; Fox, ¶94. POSAs would

have thus recognized that Halevy's SO-classes are "*searchable classes ... of products or services on the Internet*" because they are determined for each form based on the "types of objects that can be obtained by querying the form" (e.g., books, hotels, restaurants, houses, jobs, cars, etc.). Fox, ¶94; Halevy, [0045].

POSAs also would have recognized that Halevy's SO-properties are "*searchable ... attributes of products or services on the Internet*" because they "specify the type of information" obtained from querying the form such as SO-properties of "make" and "model" for the SO-class of "cars." Fox, ¶94; Halevy, [0095], [0098-101].

As also discussed *supra* §VI.C, POSAs would have recognized that Halevy's form engine and database would have been an obvious modification to Oldham's external engine 105 since its external engine 105 "includes a search engine (SE) 115" (Oldham, 4:46-48), and Halevy teaches its form mapping functionality as an improvement to search engines. *See* Halevy, [0007-09]; Fox, ¶95. Oldham's external engine 105 is "connected to a network" like the Internet and is "configured to receive input from" a user's computer device via a website providing a webpage to the user's device. Oldham, 4:34-42, 5:3-15. POSAs thus would have recognized that Oldham's external engine is "*a computer having a processor and a non-transitory computer-readable medium,*" otherwise it would not be able to serve a persistent website via the Internet that receives and processes user search queries from multiple user computers. Fox, ¶96; *see* Halevy, [0130].

POSAs also would have recognized that Oldham’s external engine may include multiple processors operating in parallel (e.g., a mainframe) in order to serve a larger number of users. Fox, ¶96; *see, e.g.*, Halevy, [0034] (describing computing devices that support search services such as “a mainframe computer”).

Moreover, as modified, Halevy’s form engine and form database are included together with Oldham’s external engine, and POSAs would have recognized that the form database (i.e., a “*universal variable data database*”) is “*maintained by the computer*” since the form engine included in the external engine of system 100 (i.e., “*the computer*”) both builds and provides access to the form database. Fox, ¶97; Halevy, [0037] (describing a query engine 202 that queries the form database and a web crawler 206 that builds the form database, both included in the form engine), Fig. 2.

- c. **[1B] “determining, by the computer based on dynamic data collected through the user interface while the user is interacting with the user interface of the networked data source, field identifiers of the networked data source stored in the universal variable data database, the dynamic data containing user-specified values pertaining to a product or service;”**

As discussed *supra* §VI.D.1.b, Oldham’s external engine (i.e., “*the networked data source*”) running on its system (i.e., “*the computer*”) receives a search query (i.e., “*dynamic data*”) from a user via a webpage served by the external engine (i.e., “*the user interface of the networked data source*”). Oldham,

5:11-15; Fox, ¶98; *see* Ex-1001, 5:48-52 (describing *dynamic data* as data retrieved from a “text field on a publisher site”). POSAs would have thus recognized the search query to be “*dynamic data collected through the user interface while the user is interacting with the user interface of the networked data source.*” Fox, ¶98. In Oldham, the user’s search query “*contain[s] user-specified values pertaining to a product or service*” because users of Oldham’s system “may be searching for products and services” and advertisements for related products or services are displayed to the user via the webpage based on the search query. Oldham, 6:1-16; Fox, ¶99.

As discussed *supra* §VI.C, in Oldham/Halevy, the user’s search query is submitted to Halevy’s form engine (via Oldham’s modified external engine) to retrieve deep-links from the form database (i.e., “*the universal variable data database*”), with keywords in the user’s query mapped to corresponding field parameter names in each deep-link. Fox, ¶100; Halevy, [0036], [0136-38]. Thus, in Oldham/Halevy, the form engine executed by Oldham’s system (i.e., “*the computer*”) *determines* the deep-links *based on* the user’s search query (i.e., “*the dynamic data*”).

Halevy’s form engine *determines* “*field identifiers of the networked data source stored in the universal variable data database*” based on the user’s search query (i.e., “*the dynamic data*”) by mapping keywords in the query to SO-

properties (i.e., normalized variables) of various forms in an identified SO-class. Fox, ¶101. Specifically, as discussed *supra* §§VI.B.3 and VI.C, in Halevy's form query process (e.g., Fig. 6), the form engine "predicts a search-ontology class for the query based on the keywords (step 604)" and then "constructs a structured query" by "mapping keywords to [SO-] properties" of the predicted class (step 606). *Id.*, [0136]. For example, Halevy describes converting an example user query "Telephone David Ko 98102" to a structured query in the "Person" SO-class, with the "FirstName" SO-property assigned the value "David," the "LastName" SO-property assigned the value "Ko," and the "ZipCode" SO-property assigned the value "98102." *Id.*, [0112]; Fox, ¶101. Using this structured query, Halevy's system "performs a lookup" in the form database "to identify forms of interest (step 608)," which are "rank[ed]" and then "present[ed] the user" as "query-through links" (step 612). Halevy, [0112], [0137-38]; Fox, ¶101.

POSAs would have recognized that the SO-properties mapped to the keywords are *determined "field identifiers of the networked data source stored in the universal variable data database" based on the dynamic data* because the SO-properties for each class are defined by the form engine and mapped to corresponding fields from various forms stored in the form database. Fox, ¶102; Halevy, [0048-49], [0062], [0067]. The '734 patent similarly determines field identifiers from a user-input text string. Ex-1001, 10:60-11:7 (describing an

example where “the user’s description ... may be captured in a text string and parsed ... to obtain keywords” that are “associated with various field identifiers”). Thus, POSAs would have recognized Halevy’s mapping of the keywords in a query to SO-properties that are also mapped to various corresponding fields in the form database to be “*determining ... based on dynamic data collected through the user interface ..., field identifiers of the networked data source stored in the universal variable data database.*” Fox, ¶103.

d. [1C] “determining, by the computer, field identifiers of a networked data target that are mapped to the field identifiers of the networked data source in the universal variable data database;”

As discussed *supra* §VI.B.2, Halevy’s crawling process maps corresponding fields on multiple website forms (i.e., *field identifiers of networked data targets*) to SO-properties (i.e., normalized variables) of the SO-classes identified for the forms. Fox, ¶104, Halevy, [0067]. As discussed *supra* §§VI.B.3 and VI.D.1.c, Halevy’s query process maps the keywords of a user query to the SO-properties (i.e., “*field identifiers of the networked data source in the universal variable database*”) in order to return deep-links to the forms with the keywords in the query *mapped* to corresponding fields of the linked form. Fox, ¶105, Halevy, [0136-38].

In Halevy’s form query process (executed by the form engine), after keywords of the query are mapped to SO-properties of an identified SO-class, the

form engine then obtains forms based on the identified SO-class and via the class's SO-properties, *maps* the keywords of the query to the fields of the identified web forms. Halevy, [0125]. Halevy then returns these mappings to each form as “query-through” links in response to the query. *Id.*, [0137-38]. Because Halevy's query-through links (each to a “form of interest”) include a mapping of query keywords to corresponding field parameter names to automatically generate search results from the linked form using the keywords as values in the form's fields, POSAs would have recognized the query-through links to be deep-links that repurpose the query keywords. Halevy, [0123-28], [0136-38]; [0143]; Fox, ¶106. Furthermore, because Halevy discloses that a single structured query—with keywords of the query mapped to SO-properties—returns ***multiple*** query-through links—with keywords mapped to corresponding fields based on the SO-property mapping—, POSAs would have understood Halevy's system to map corresponding form fields from different websites to the same SO-properties (because otherwise returning multiple deep-link results from a single query would not be possible). Fox, ¶106.

As discussed *supra* §§VI.C and VI.D.1.b, POSAs would have recognized that Oldham's external engine as modified by Halevy and executed by Oldham's system is “*the computer*” performing Halevy's form query process that *determines* the *mapping* between corresponding fields of forms in the form database (i.e., “*field identifiers of a networked data target*”) and the SO-properties identified for

the keywords (i.e., “*field identifiers of the networked data source in the universal variable data database*”). Fox, ¶107.

- e. **[1D] “automatically generating, by the computer using the universal variable data database, a deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target;”**

As discussed *supra* §§VI.A and VI.C, Oldham teaches that its advertisement engine (ADE) included in the external engine executed by its system (i.e., “*the computer*”) *automatically generates* advertisements in response to user search queries. Oldham, 9:6-8 (“The ADE 120 can be operatively coupled to the SE 115 to identify advertisements 220 relevant to the user’s interest based on the query string 205 received from the user 110.”), Fig. 2 (showing the ADE and SE included in the external engine). The advertisements generated by Oldham’s ADE include advertiser-provided links to advertiser landing pages specific to “products and services offered by the advertiser” that can be dynamically generated based on data passed to the advertiser’s website by the external engine via the link URL. *Id.*, 9:24-32, 9:42-50, 12:53-62 (describing dynamically generating custom web pages based on data provided in the landing page URL); Fox, ¶108.

As discussed *supra* §§VI.C and VI.D.1.c-VI.D.1.d, rather than requiring advertisers to provide compliant URLs for each generated advertisement in Oldham/Halevy, Oldham’s generation of an advertisement would have instead

included querying Halevy’s form engine with the user’s query string and the user’s attributes to retrieve one or more deep-links to advertiser landing pages from the form database (i.e., “*the universal variable data database*”), with keywords of the query string and attributes mapped to corresponding fields in the deep-link via the SO-properties. POSAs thus would have understood that Oldham’s generated advertisement with Halevy’s retrieved deep-links to be *deep-linked ads*. Fox, ¶109.

Further, because Halevy’s SO-properties (i.e., “*field identifiers of the networked data source*”) are used in Oldham/Halevy to map the keywords of the query string to corresponding field parameter names (i.e., “*field identifiers of the networked data target*”) in each returned deep-link, POSAs would have recognized that each generated *deep-linked ad* in Oldham/Halevy “*links the field identifiers of the networked data source and the field identifiers of the networked data target*” by associating keywords with their corresponding field parameter names in the deep-link via the SO-properties. Fox, ¶110.

f. [1E] “presenting the deep-linked ad through the user interface of the networked data source on the user device; and”

As discussed *supra* §VI.D.1.b, in Oldham/Halevy, “*the user interface of the networked data source on the user device*” is a webpage presented in a web browser on the user’s device that is generated by a website executed by Oldham’s external engine. Oldham, 4:34-46, 5:2-15, Fig. 2; Fox, ¶111. Oldham also teaches

displaying its generated advertisements on the webpages served to its users in response to the user entering a query string. Oldham, 6:47-54 (“[I]n response to the query string 205, the user 110 can be presented with search results 230 that can include ... URLs 225 that point to landing pages of relevant advertisements 235 created by the advertiser 125.”).

Accordingly, in Oldham/Halevy discussed *supra* §VI.C, POSAs would have recognized that Oldham’s webpages displaying advertisements with Halevy’s deep-links would have been Oldham’s external engine “*presenting the deep-linked ad through the user interface of the networked data source on the user device*” in response to the user-entered query. Fox, ¶112.

- g. [1F] “responsive to the user selecting the deep-linked ad through the user interface of the networked data source on the user device, passing the user-specified values pertaining to the product or service to the networked data target using the deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target such that, without necessitating any pre-existing relationship between the networked data source and the networked data target, an electronic product or service order form at the networked data target is automatically filled in or acted upon with the user-specified values pertaining to the product or service and presented on the user device”**

As discussed *supra* §§VI.C and VI.D.1.f, in Oldham/Halevy, Oldham’s generated advertisements with Halevy’s deep-links displayed on Oldham’s webpages are *deep-linked ads* presented “*through the user interface of the*

networked data source on the user device.” Fox, ¶113. Oldham teaches that users can “click[] on” (i.e., *select*) these advertisements to access the advertiser’s landing page indicated by the link. Oldham, 6:48-54. POSAs would have thus recognized that in Oldham/Halevy, the user is directed to the advertiser’s landing page “*responsive to the user selecting the deep-linked ad through the user interface of the networked data source on the user device.*” Fox, ¶113.

As discussed *supra* §§VI.C and VI.D.1.d-VI.D.1.e, in Oldham/Halevy, the link included in Oldham’s advertisement is a deep-link generated by submitting a query string to Halevy’s form engine. Fox, ¶114. The deep-link includes keywords of the query string (i.e., “*the user-specified values pertaining to the product or service*”) associated with corresponding field parameter names of the advertiser’s landing page in the deep-link (i.e., “*the field identifiers of the networked data target*”) based on the form engine’s SO-property-mapping process (i.e., the “*link[ing off] the field identifiers of the networked data source and the field identifiers of the networked data target*”). Fox, ¶114. Thus, POSAs would have recognized that in Oldham/Halevy, the deep-link in an advertisement *passes* the keywords of the query to the advertiser’s field identifiers *responsive to the user selecting* an advertisement. Fox, ¶114.

Further, as discussed *supra* §§VI.B.1-VI.B.2, since Halevy teaches that its form database is created via crawling that categorizes webpages and forms from

various unrelated websites found on the Internet (Halevy, [0039-50]; [0057-58]; [0095]), POSAs would have understood the form database's creation, and thus the *linking* between fields on various forms and the SO-properties, to occur “*without necessitating any pre-existing relationship between the networked data source and the networked data target.*” Fox, ¶115.

Moreover, as discussed *supra* §VI.B.3, Halevy teaches that a web form at a website (i.e., “*an electronic product or service order form at the networked data target*”) can be automatically invoked (i.e., “*automatically filled in or acted upon*”) using its “query-through link” (i.e., *deep-link*) by providing the web browser with an “invocation string” containing field names (i.e., “*field identifiers of the networked data target*”) set to values determined from the keywords submitted in a query string (i.e., “*the user-specified values pertaining to the product or service*”). Halevy, [0022-23], [0123], [0127-28]; Fox, ¶116.

In Oldham/Halevy, where the advertisement displayed on Oldham's webpage includes Halevy's deep-link to an advertiser's landing page having an order form (with corresponding field names in the order form at the deep-link set to query keyword values via the SO-property-mapping process), POSAs would have understood that the browser's processing of the invocation string for the deep-link displays (i.e., *presents on the user device*) the linked webpage with the page's order form “*automatically filled in or acted upon*” because the browser

displays the advertiser's landing page showing the results from invoking the form with the values in the deep-link. Halevy, [0123], [0127-28], [0138]; Fox, ¶116.

2. Claim 2: “The method according to claim 1, wherein the dynamic data includes location information⁷ of the networked data source or the networked data target.”

As discussed *supra* §§VI.A and VI.D.1.b, in Oldham/Halevy, Oldham's webpage allows the user to submit a query string (i.e., “*dynamic data*”) to the external engine. Oldham, 4:34-46, 5:2-15. Oldham's external engine includes a “determination engine 310” that “determines values for user attributes based on the query” including the user's geographic location. *Id.*, 7:56-58, 7:63-64, 8:10-16 (describing an example where the user's location is determined from the search string “Coffee shop 21220” based on the “postal code value of ‘21220’”). The user's determined location is included in the data provided to the advertiser via a URL so that the advertiser's landing page at the URL (i.e., “*the networked data target*”) can be dynamically generated based on the advertiser's “products and services” “specific to the user's location” included in the URL. *Id.*, 6:55-7:3, 12:45-13:1. Additionally, a “network address” of the user device (such as an IP

⁷ Although the prior art teaches “*location information*,” this claim element is non-functional printed matter that carries no patentable weight. MPEP §2111.05.

address) may be utilized to determine a real-time geographic location of the user's device. *Id.*, 8:16-25, Fox, ¶118.

Alternatively, as admitted by the '734 patent, it was known to select ads for display by a user location, explaining "filtering conditions might include current information, such as the location of the user Advertisers and publishers are finding that the better the targeting of an ad, the better its performance for all parties. Ex-1001, 2:15-22. As such, to the extent it is argued that Oldham does not teach a user location, POSAs would have understood that it was nevertheless an obvious modification for its known performance benefits. Fox, ¶119.

As discussed *supra* §VI.C, in Oldham/Halevy where an advertisement includes Halevy's deep-link with user query keywords and user attributes (e.g., user location values) mapped to corresponding field names at the advertiser's landing page, POSAs would have recognized that the landing page dynamically generated by the advertiser would likewise have been customized to the advertiser's products and services based on the user's location attribute by the query to Halevy's form database being mapped to the corresponding location fields at the advertiser's website in the deep-link. Thus, POSAs would have understood that in Oldham/Halevy the search query (i.e., "*the dynamic data*") submitted to Halevy's form engine "*includes location information of ... the networked data target*" so that the advertiser's website would generate a landing page offering

products and service specific to the user's location included in Halevy's deep-link. Fox., ¶120.

3. Claim 3: “The method according to claim 1, wherein the networked data source or the networked data target is embodied on a mobile device and wherein the dynamic data comprises location information⁸ of the mobile device.”

As discussed *supra* §§VI.A and VI.D.1.b, Oldham's external engine (i.e., “*the networked data source*”) serves a webpage, displayed in a user device's web browser, that allows a user to submit a query string. Oldham, 4:34-46, 5:2-15; Fox, ¶121. POSAs would have recognized that the webpage served by Oldham's external engine is *the networked data source embodied on a* user device because the webpage provides a visual instance of the external engine's functionality to the user via the device. Fox, ¶121. Likewise, as discussed *supra* VI.D.2 (for claim 2), POSAs would have recognized that the advertiser's landing page served by the advertiser's website is *the networked data target embodied on a* user device for the same reason. Oldham teaches that user devices presenting its webpages and advertiser landing pages include a *mobile device* such as a “laptop computer, smartphone, personal digital assistant (PDA), ..., and the like.” Oldham, 4:43-46. Thus, POSAs would have recognized Oldham/Halevy to teach that Oldham's

⁸ Although the prior art teaches “*location information*,” this claim element is non-functional printed matter that carries no patentable weight. MPEP §2111.05.

external engine and the advertiser's website are "*embodied on a mobile device*" via their respective webpages served to the user. Fox, ¶122.

As discussed *supra* §§VI.D.1.b, VI.D.2, and above, in Oldham/Halevy, Oldham's webpage allows the user to submit a query string (i.e., "*dynamic data*") to the external engine that is processed by a "determination engine 310" to "associate values to one or more attributes that can define a user's geographic location." Oldham, 7:56-58, 7:63-64, 8:10-16 (describing an example where the user's location is determined from the search string "Coffee shop 21220" based on the "postal code value of '21220'"). In the case of the user in Oldham/Halevy interfacing with Oldham's external engine via a webpage served to a *mobile device* as discussed above (*see id.*, 4:34-46, 5:2-15), POSAs would have recognized that Oldham's determining of the user's geographic location from the query string discloses "*the dynamic data comprises location information of the mobile device.*" Fox, ¶123. Additionally, a "network address" of the user device (such as an IP address) may be utilized to determine a real-time geographic location of the user's device. *Id.*, 8:16-25.

Alternatively, as admitted by the '734 patent, it was known to select ads for display by a user location, explaining "filtering conditions might include current information, such as the location of the user Advertisers and publishers are finding that the better the targeting of an ad, the better its performance for all

parties. Ex-1001, 2:15-22. As such, to the extent it is argued that Oldham does not teach a user location, POSAs would have understood that it was nevertheless an obvious modification for its known performance benefits. Fox, ¶124.

4. Claim 4: “The method according to claim 3, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the mobile device embodying the networked data source.”

As discussed *supra* §VI.D.1.g, Oldham/Halevy discloses that the form at the advertiser’s landing page (i.e., “*the electronic product or service order form at the networked data target*”) is *automatically filled in or acted upon* with *the user-specified values pertaining to the product or service* included in the search query by the user clicking on Halevy’s deep-link that maps keywords in the query to corresponding field names at the landing page form via the SO-properties. Fox, ¶125.

As discussed *supra* §VI.D.3, in Oldham/Halevy, the user’s geographic location may be included in the search query submitted to the external engine, which is the location of the user’s mobile device because the user is interacting with the external engine’s webpage displayed on the device (i.e., “*location information of the mobile device embodying the networked data source*”) or an IP address of the user’s device is communicated. Oldham, 7:56-58, 7:63-64, 8:10-25, 14:21-40; Fox, ¶126. Thus, POSAs would have recognized that for deep-links

returned from Halevy’s form engine to webpage forms that include a location field (e.g., hotel, airline, or other travel related sites that provide products and services based on location) mapped to an SO-property, the location of the user (and thereby the location of the mobile device) included in the search query would have been mapped to the corresponding location field name in the form at the deep-link based on the SO-property-mapping process as discussed *supra* §VI.B.2. *See* Halevy, [0100], [0125]; Fox, ¶126. POSAs thus would have recognized that in Oldham/Halevy, the user clicking on the deep-linked advertisement would have caused device’s web browser to *automatically fill in or act upon* the landing page form *with the location information of the mobile device in addition to the user-specified values pertaining to the product or service* included in the search query. Fox, ¶127.

5. Claim 5: “The method according to claim 1, wherein the networked data target is embodied on a mobile device and wherein the field identifiers of the networked data target include a field identifier for a location of the networked data target.”

As discussed *supra* §VI.D.2, Oldham’s external engine is embodied on a user’s mobile device web browser via a webpage that accepts a user query. Fox, ¶128. The external engine includes a “determination engine 310” that “determines values for user attributes based on the query” including the user’s geographic location. Oldham, 7:56-58, 7:63-64, 8:10-25 (describing an example where the

user's location is determined from the search string "Coffee shop 21220" based on the "postal code value of '21220'" or based on an IP address of the user device. The user's determined location is included in the data provided to the advertiser via a URL so that an advertiser's landing page (i.e., "*the networked data target*") "specific to the user's location" can be dynamically generated based on the advertiser's "products and services" at that location. *Id.*, 6:55-7:3. Because the advertiser's landing page can be dynamically generated and customized to the user's location and Halevy's deep-links would have been recognized to map the user's location attributes in the query to the advertiser's location fields in the deep-link, POSAs would have recognized that the advertiser's landing page (i.e., "*the network data target*") includes "*field identifier for a location of the networked data target.*" Fox, ¶128; *See, e.g.*, Oldham, 9:32-48, 9:59-10:8.

As discussed *supra* §VI.D.1.g, in Oldham/Halevy, the advertiser's landing page generated by Halevy's deep-link is displayed to the user via the mobile device's web browser by the user clicking on the advertisement. Fox, ¶129. POSAs would have thus recognized that the landing page generated for and displayed on the mobile device's web browser is *the networked data target embodied on a mobile device*" because the landing page provides a visual instance of the advertiser's website functionality to the user via the device. Fox, ¶129.

6. Claims 8-12 and 15-19

Independent claim 8 recites in limitation [8PRE] a “*system comprising: a processor; a non-transitory computer-readable medium; and stored instructions translatable by the processor to perform*” the same method recited in claim 1 discussed *supra* §VI.D.1. Fox, ¶130. This method is performed in Oldham/Halevy by Oldham’s external engine (i.e., “*stored instructions translatable by the processor to perform*” the method) as discussed *supra* §§VI.C and VI.D.1. As discussed *supra* §VI.D.1.b (limitation [1A]) Oldham’s external engine is executed by a system that includes *a processor and a non-transitory computer-readable medium*. Fox, ¶131; *see also* Oldham, 15:51-55. Thus, POSAs would have recognized Oldham/Halevy to teach the system of [8PRE] that performs the steps in limitations [8A]-[8H] for the same reasons discussed *supra* §§VI.D.1.b–VI.D.1.i. Fox, ¶131.

Independent claim 15 recites in limitation [15PRE] a “*computer program product*” identical to the *system* in claim 8. POSAs would have recognized that Oldham’s external engine that implements its searching website functionality is a *computer program product*, and the remainder of claim 15 is met by Oldham/Halevy for the same reasons discussed above for claim 8. Fox, ¶132.

Claims 8 and 15 are otherwise identical to claim 1 and are met by Oldham/Halevy for the same reasons summarized in the following table and explained in the sections indicated. Fox, ¶133.

Claim 8 Element	Claim 15 Element	Corresponding Claim 1 Element & Section
[8A]	[15A]	[1A] – VI.D.1.b
[8B]	[15B]	[1B] – VI.D.1.c
[8C]	[15C]	[1C] – VI.D.1.d
[8D]	[15D]	[1D] – VI.D.1.e
[8E]	[15E]	[1E] – VI.D.1.f
[8F]	[15F]	[1F] – VI.D.1.g

The dependent claims from claims 8 and 15 recite identical limitations to the corresponding claim 1 dependents listed below, and are met for the same reasons summarized in the following table and explained in the sections indicated. Fox, ¶134.

Claim 8 Dependent	Claim 15 Dependent	Corresponding Claim 1 Dependent & Section
9	16	2 – VI.D.2
10	17	3 – VI.D.3
11	18	4 – VI.D.4
12	19	5 – VI.D.5

VII. GROUND 2: CLAIMS 1-5, 8-12, AND 15-19 ARE OBVIOUS OVER OLDHAM AND APA IN VIEW OF HALEVY

As discussed *supra* §VI.D, Oldham in view of Halevy (Ground 1) renders claims 1-5, 8-12, and 15-19 obvious.

To the extent that more detailed disclosure is required regarding utilizing deep-link advertising based on the user's location (*see, e.g.*, claims 2-5), as evidence of the knowledge of the art, the Applicant Admitted Prior Art ("APA") states that at the time of the '734 patent, such sites were known. Ex-1001, 2:9-42, 2:51-57, 3:5-23. Specifically, Applicants admitted that deep-linked-based advertising targeted to the user's location was known and in use for "search and E-commerce sites where the user is searching for a product or service," like Oldham's search website (as discussed *supra* §VI.A), and was known to "provide ... better targeting" resulting in "greater value to end-users" and "better return-on-investment for advertisers." *Id.*, 2:3-8, 2:15-17, 2:51-57; Fox, ¶136. With these sites, advertisements were filtered based on a user's location and user-entered search parameters (e.g., "where s/he is traveling from, where to, travel dates, how many people in the party, class of travel, etc."), and the parameters were "passed along with each ad click to the appropriate advertiser" to "automatically activate searches from their home page," thereby deep-linking the user "into their booking process." Ex-1001, 2:15-17, 2:52-65.

These ads worked by mapping the "fields or variables on the publisher site or mobile app" to the "corresponding fields or variables on the advertiser site or mobile apps." *Id.*, 3:9-14. This mapping was done via manual coding "by developing programmatic integrations between variables and fields" on the

publisher's and advertiser's websites. *Id.*, 3:14-18. Manual coding was necessary because each website was known to use "its own field descriptors and variable names." *Id.*, 3:18-23.

POSAs would have recognized the websites described in Oldham to be examples of publisher and advertiser websites and applications described in the APA, having fields that require manual coding to map the user's location and search parameters provided in Oldham's search query to the advertiser-provided links so that search parameter values would have been passed along in the resulting deep-linked URLs generated for the advertisements by Oldham's server. Fox, ¶138.

POSAs would have known that automating this mapping process would have been more efficient, as the APA states that mapping via manual programming was "a time and resource intensive activity that multiplies as the size of the network grows, limiting the size, scale and market adoption for deep-linked ads." Ex-1001, 3:24-27. POSAs would have thus looked to Halevy to automate this manual mapping process as Halevy's form database, discussed *supra* §§VI.B and VI.C, maps the forms and fields on various websites to a hierarchy of SO-classes and SO-properties that can be queried with keywords to retrieve deep-links that map the keywords to parameter names of the form at each deep-link to invoke a search on the linked website's form. Fox, ¶139; Halevy, [0038]; [0136-38].

VIII. GROUND 3: CLAIMS 6-7, 13-14, AND 20 ARE OBVIOUS OVER OLDHAM AND HALEVY IN VIEW OF ROUSSO

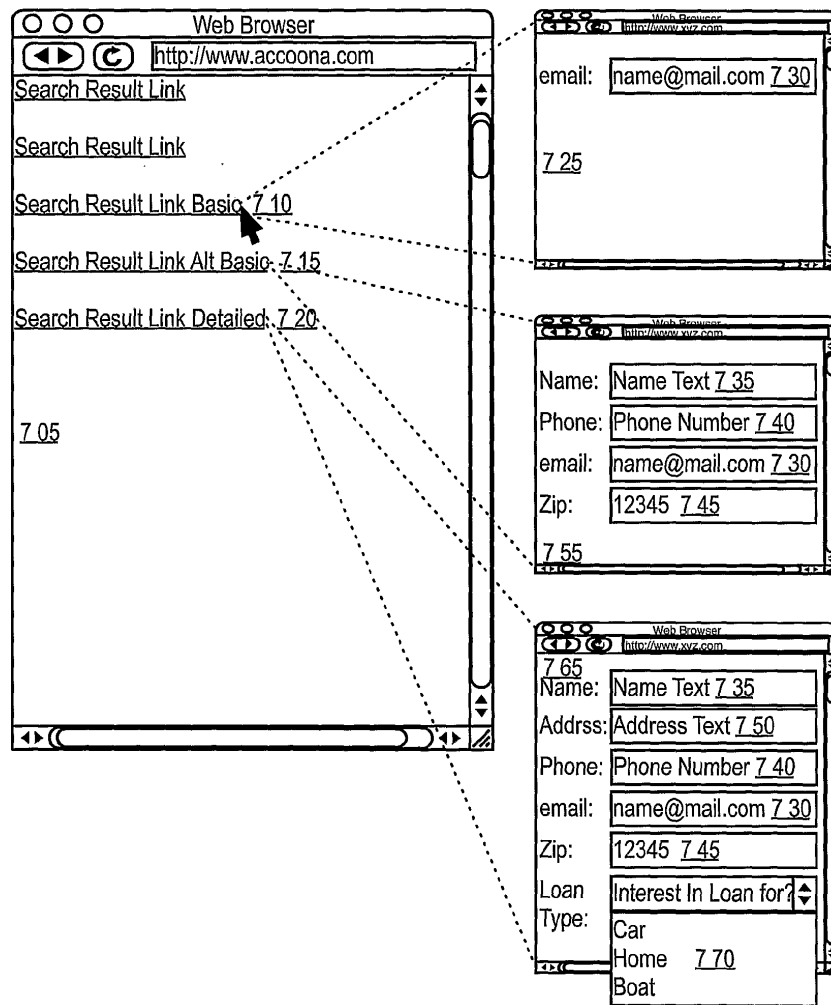
This ground incorporates the analysis of Oldham/Halevy over claims 1, 8, and 15, as set forth in Ground 1 *supra* §§VI.A–VI.D.

A. Rousso

Rousso (Ex-1021) discloses a Lead Bidding System (“LBS”) that “takes bids on consumer leads and allows the winning bidder to advertise to the consumers.” Rousso, [0035]. Rousso’s LBS generates leads from consumer-entered information and delivers the lead data to the winning bidder. *Id.* For example, Rousso teaches generating lead data from a user’s search query. *Id.*, [0043]. Here, consumers interact with a “home page” via a web browser to “provide search requests” to a “search facility” that then “provides the consumer with search results.” *Id.*, [0043], [0062], [0066]. The search results include “a qualified lead form” where “consumers may enter identifying information.” *Id.*, [0043], [0066], [0085-87], Fig. 7. According to Rousso, “[t]he user does not necessarily have to fill out a qualified lead form,” but rather a lead may be generated based on “responses indicative of their interest in a particular kind of good or service” such as “providing a search for a type of product.” *Id.*

As shown in Fig. 7 (below), Rousso’s qualified lead forms are presented to users via clicking on a search result. *Id.*, [0066], [0085-86] (“an HTML web page is used to present the user with a web form”), Fig. 7.

Figure 7



These forms “may vary based on the nature of goods, services and/or topics being viewed by the consumer.” *Id.*, [0086]. Additionally, the forms include a unique identifier, for example, “an IP address (e.g., prepopulating a text field).” From the IP address, the user’s location can be determined for targeting the lead data to customers in a specific region. *Id.*, [0086], [0161], [0379-80]. The forms may also be prepopulated based on stored user profile data or this information may be “provided to the LBS without user interaction.” *Id.*, [0086].

Once a lead is generated, the LBS provides it to a “bid and bill facility.” *Id.*, [0046], [0087] (“The information entered by the user into the lead data form may be sent to the LBS via an http post command” using, *e.g.*, “field, value pair notation.”). Through the bid and bill facility, customers of the LBS (*e.g.*, “purveyors of goods and/or service ... interested in finding leads to consumers”) compete via a bidding process for access to the lead data (*i.e.*, the data entered by the consumer). *Id.*, [0046], [0055]. The winning customers of the bidding process are notified of the lead and given access to the lead data by, *e.g.*, “manually self retriev[ing] the lead by logging into their account.” *Id.*, [0185], [0372]. Customers log into their accounts on the LBS using a web browser as the LBS provides “a web-based administration system for monitoring and controlling all aspects of users accounts including ... reporting.” *Id.*, [0054], [0056].

B. POSAs Motivations to Modify Oldham and Halevy in view of Rousso

As noted *supra* §VI.C, Oldham/Halevy discloses a search engine website accessed via a webpage displayed on a user’s device, where the user enters search queries and is presented with advertisements having deep-links generated by querying Halevy’s form database, which maps keywords of the user’s query and the user’s attributes (*e.g.*, location data) to corresponding fields in an identified form. Fox, ¶81. As discussed *supra* §VIII.A, Rousso teaches a Lead Billing System (“LBS”) for generating leads, where users click on keyword-based search results

and are shown a qualified lead form to enter data that is then provided by the LBS to a winning bidder. Rousso, [0043], [0066], [0085-87], [0185].

POSAs would have found it obvious to include Rousso's qualified lead forms in Halevy's form database because Rousso teaches that its LBS can be utilized by other website publishers to "support[] distribution of the advertiser system to maximize advertiser acquisitions via 3rd party sales teams or partners with existing advertiser bases." *Id.*, [0295]; Fox, ¶82. POSAs would have recognized that including Rousso's forms would have benefited Oldham's system with revenue from advertisements for Rousso's LBS and would have benefited Rousso's LBS as deep-links with keywords from the user's search query and the user's location data prepopulating corresponding fields in the forms would have improved lead data acquisition from users. Fox, ¶82; *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) ("Because the desire to enhance commercial opportunities by improving a product or process is universal—and even common-sensical—we have held that there exists in these situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves."). POSAs thus would have been motivated to include Rousso's forms in Oldham/Halevy as a way for the LBS to interact with other search providers like Oldham that advertise to users, thereby

utilizing another way of generating revenue by maximizing advertiser acquisition of user-generated lead data. Fox, ¶82.

POSAs would have reasonably expected success in implementing Rousso's qualified lead forms with Oldham/Halevy, thereby allowing Rousso's LBS to receive lead data via Halevy's generation of deep-links with query keywords and the user's location mapped to corresponding fields in the form. Fox, ¶83. As discussed *supra* §§VIII.A, Rousso teaches that its forms are written using, *e.g.*, HTML. Rousso, [0085-86]. Halevy teaches adding HTML forms to its form database and determining an SO-class for the form and SO-properties for each field. Halevy, [0142]. Halevy also teaches that forms can be "manually provided" to its system. *Id.*, [0035]. It would have thus been within a POSA's skill to provide Rousso's qualified lead forms to Halevy's system since Rousso's forms are of the type that Halevy is designed to operate with. Fox, ¶83. POSAs would have recognized that Halevy generating deep-links to Rousso's forms would have absolved the user of reentering data, thereby streamlining the user's experience and improving the rate at which users submit lead data to the LBS. Fox, ¶83. POSAs also would have recognized that Rousso's lead generation would have been improved by including Rousso's qualified lead forms into Halevy's form database, as this would have provided the LBS another way of generating leads from users. Fox, ¶83.

In such an implementation, POSAs would have understood that the user selecting a deep-link from Halevy's system (as advertised on Oldham's search results page) to one of Rousso's qualified lead forms would have submitted the linked form and the data in the deep-link to Rousso's LBS automatically, thereby providing keywords of the user's query and the user's attributes, such as location data, as lead data to the LBS. Fox, ¶84. As Rousso teaches that its lead forms include unique identifiers like the user's IP address, and automatically prepopulating forms with user identification data (Rousso, [0086]), POSAs would have understood that the LBS processing the form submission as a result of the user selecting a deep-link would have allowed the LBS to tag the lead data with the user's IP address and prepopulate any identifying data missing from the deep-link to the form for lead generation. Fox, ¶84. As explained by Rousso, the LBS would have then provided the lead data submitted by selecting the deep-link to a winning bidder to view via their account on the LBS. Rousso, [0185].

C. Claim-by-Claim Analysis

- 1. Claim 6: "The method according to claim 1, wherein the networked data source is embodied on a first mobile device, wherein the networked data target is embodied on a second mobile device."**

As discussed *supra* §§VI.A and VI.D.1.b for Oldham/Halevy, Oldham's external engine (i.e., "*the networked data source*") serves a webpage, displayed in a user device's web browser, that allows a user to submit a query string used to

generate a deep-link via Halevy's system. Oldham, 4:34-46, 5:2-15; Fox, ¶141. POSAs would have recognized that the webpage served by Oldham's external engine is *the networked data source embodied on a first user device* because the webpage provides a visual instance of the external engine's functionality to the user via the user's device. Fox, ¶141.

As discussed *supra* §§VIII.A and VIII.B, the user selecting a deep-link generated by Halevy's form database to a qualified lead form provided by Rousso's LBS would have been recognized by POSAs as submitting the data in the deep-link as lead data for the LBS to provide to a winning bidder. Fox, ¶142. Rousso, [0049], [0185], [0372]. The winning bidder accesses the lead data by logging into an account at the LBS via a web browser operating on the bidder's device, and thus would have been recognized by POSAs as *the networked data target embodied on a second user device*. Fox, ¶142; Rousso, [0185]. POSAs also would have recognized that another application may be utilized on the user's device in place of the web browser. Fox, ¶142; *see* Rousso, [0316-17], [0435].

Oldham teaches that user devices presenting webpages include a *mobile device* such as a "laptop computer, smartphone, personal digital assistant (PDA), ..., and the like." Oldham, 4:43-46. Thus, POSAs would have recognized Oldham/Halevy/Rousso to teach that Oldham's external engine and Rousso's LBS websites are "*embodied on a mobile device*" via their respective webpages served

to the user's *first mobile device* and the winning bidder's *second mobile device*.

Fox, ¶143.

2. **Claim 7: “The method according to claim 6, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the first mobile device embodying the networked data source, the second mobile device embodying the networked data target, or both.”**

As discussed *supra* §§VI.C and VI.D.1.g, the user selecting a deep-link on Oldham's webpage that was derived from querying Halevy's system with user-query keywords and user attributes (e.g., location data) passes the data mapped in the deep-link to the advertiser's website such that “*an electronic product or service order form at the networked data target is automatically filled in or acted upon with the user-specified values pertaining to the product or service and presented on the user device.*” Fox, ¶144.

As discussed *supra* §VI.C, VIII.B, and VIII.C.1, in Oldham/Halevy/Rousso, POSAs would have recognized that user attributes including the user's location data derived by Oldham's external engine (e.g., via the user's IP address) would have been mapped via Halevy's system to corresponding location fields in Rousso's qualified lead forms. Fox, ¶145; *see, e.g.*, Rousso, [0086], Fig. 7. POSAs thus would have recognized that the user selecting a deep-link to Rousso's qualified lead form with user location data mapped to the form's corresponding

location fields would have been *the electronic product or service order form at the networked data target being automatically filled in or acted upon with the location information of the first mobile device embodying the networked data source*. Fox, ¶145.

3. Claims 13, 14, and 20

Claims 13 and 14 depend from claim 8 and claim 20 depends from claim 15. These claims recite identical limitations to claims 6 and 7 that depend from claim 1, and are met for the same reasons summarized in the following table and explained in the sections indicated. Fox, ¶146.

Claim 8 Dependent	Claim 15 Dependent	Corresponding Claim 1 Dependent & Section
13	20	6 – VIII.C.1
14		7 – VIII.C.2

IX. **GROUND 4: CLAIMS 6-7, 13-14 AND 20 ARE OBVIOUS OVER OLDHAM, APA, AND HALEVY IN VIEW OF ROUSSO**

See the analysis of Oldham and APA in view of Halevy over claims 1, 8, and 15 as set forth in Ground 2 *supra* §VII, for supplementing the analysis of Oldham/Halevy in view of Roussso as set forth in Ground 3 *supra* §VIII. This ground additionally renders claims 6-7, 13-14, and 20 obvious for the same reasons as Ground 3, but adds the APA to the extent Patent Owner argues that more detailed disclosure is required regarding utilizing deep-link advertising based on

the user’s location (*see, e.g.*, claim 7), as evidenced of the knowledge of the art acknowledged in the ’734 patent as discussed in Ground 2. Fox, ¶147.

X. NO BASIS EXISTS FOR DISCRETIONARY DENIAL

A. Section 314(a)

“[T]he PTAB will not deny institution based on *Fintiv* if,” as here, “there is compelling evidence of unpatentability.” Director’s Interim Procedure for Discretionary Denials, 5 (June 21, 2022) (“Interim Procedure”) (discussing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential)). That should conclude the *Fintiv* analysis.

If considered, the *Fintiv* factors also weigh against denial.

1. Stay Potential

No stay has been requested. Thus, without “specific evidence” of how the court will rule, this factor is at worst neutral. *Sand Revolution II, LLC, v. Cont’l Intermodal Group–Trucking*, IPR2019-01393, Paper 24, at 7 (June 16, 2020) (informative).

2. Trial Timing

No trial date has been set. Trial would be expected well after a final written decision regardless of the outcome of Petitioner’s pending motion to transfer from Delaware to N.D. Cal. *See* Ex-1010, 2. Median time to trial in Delaware is 32.9 months. *See* Ex-1011, 14. Median time to trial in N.D. Cal. is 48.9 months. *See* Ex-1011, 66.

3. Litigation Progress

District-court activity has been minimal, with no rulings on Petitioner’s Motion to Dismiss or Motion to transfer. *See* Ex-1010. There has been no exchange of contentions, claim construction activity, or decisions on the merits. *Samsung Elecs. v. Netlist, Inc.*, IPR2022-00063, Paper 13, at 8 (May 5, 2022) (granting institution where no “claim construction and merits determinations” had occurred).

4. Issue Overlap

Given its early stage, the validity issues in the litigation are unknown. However, Petitioner challenges all claims, whereas Metarail’s complaint only identifies one asserted claim. Ex-1012, ¶55. This weighs against denial. *Markforged Inc. v. Continuous Composites*, IPR2022-00679, Paper 7, at 32-33 (Oct. 25, 2022).

5. Litigation Defendants

That Petitioner is the defendant in the district-court proceeding “is far from an unusual circumstance.” *Sand Revolution II*, at 12-13. This factor is neutral.

6. Other Circumstances

The Petition’s “strong showing on the merits” weighs against denial. Interim Procedure, 3-5.

B. Section 325(d)

No basis exists for denial under Section 325(d). Neither Oldham, Halevy, nor Rousso were cited or applied during prosecution of the '734 and '378 patents, nor were any references cumulative to it considered. Specifically, none of references cited during prosecution relied on Oldham's teaching of a parameter-based advertising system modified by querying Halevy's form database for deep-links. *See* Ex-1002, 45-48; Ex-1017, 48-51. Accordingly, the combination of Oldham/Halevy and the combination of Oldham/Halevy/Rousso applied here are not cumulative to the prosecution record. Thus, this Petition provides new art and arguments not previously considered and no basis exists for discretionary denial. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential).

XI. CONCLUSION

The Board should institute review and cancel claims 1-20.

Dated: October 2, 2024

Respectfully submitted,
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XII. CLAIM LISTING

The following claim listing assigns element labels (e.g., [1A], [1B], etc.) to certain claims for clarity.

Claim 1
[1PRE] A method, comprising:
[1A] in response to a user interacting with a user interface of a networked data source on a user device, accessing a universal variable data database, the universal variable data database representing a universal variable map of searchable classes and attributes of products or services on the Internet the accessing performed by a computer having a processor and a non-transitory computer-readable medium, the universal variable data database maintained by the computer;
[1B] determining, by the computer based on dynamic data collected through the user interface while the user is interacting with the user interface of the networked data source, field identifiers of the networked data source stored in the universal variable data database, the dynamic data containing user-specified values pertaining to a product or service;
[1C] determining, by the computer, field identifiers of a networked data target that are mapped to the field identifiers of the networked data source in the universal variable data database;
[1D] automatically generating, by the computer using the universal variable data database, a deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target;
[1E] presenting the deep-linked ad through the user interface of the networked data source on the user device; and
[1F] responsive to the user selecting the deep-linked ad through the user interface of the networked data source on the user device, passing the user-specified values pertaining to the product or service to the networked data target using the deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target such that, without necessitating any pre-existing relationship between the networked data source and the networked data target, an electronic product or service order form at the networked data target is automatically filled in or acted upon with the user-specified values pertaining to the product or service and presented on the user device.
Claim 2

The method according to claim 1, wherein the dynamic data includes location information of the networked data source or the networked data target.
Claim 3
The method according to claim 1, wherein the networked data source or the networked data target is embodied on a mobile device and wherein the dynamic data comprises location information of the mobile device.
Claim 4
The method according to claim 3, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the mobile device embodying the networked data source.
Claim 5
The method according to claim 1, wherein the networked data target is embodied on a mobile device and wherein the field identifiers of the networked data target include a field identifier for a location of the networked data target.
Claim 6
The method according to claim 1, wherein the networked data source is embodied on a first mobile device, wherein the networked data target is embodied on a second mobile device.
Claim 7
The method according to claim 6, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the first mobile device embodying the networked data source, the second mobile device embodying the networked data target, or both.

Claim 8
[8PRE] A system, comprising: a processor; a non-transitory computer-readable medium; and stored instructions translatable by the processor to perform:
[8A] in response to a user interacting with a user interface of a networked data source on a user device, accessing a universal variable data database, the universal variable data database representing a universal variable map of searchable classes and attributes of products or services on the Internet, the universal variable data database maintained by the system;
[8B] determining, based on dynamic data collected through the user interface while the user is interacting with the user interface of the networked data source, field identifiers of the networked data source stored in the universal variable data database, the dynamic data containing user-specified values pertaining to a product or service;
[8C] determining field identifiers of a networked data target that are mapped to the field identifiers of the networked data source in the universal variable data database;
[8D] automatically generating, using the universal variable data database, a deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target;
[8E] presenting the deep-linked ad through the user interface of the networked data source on the user device; and
[8F] responsive to the user selecting the deep-linked ad through the user interface of the networked data source on the user device, passing the user-specified values pertaining to the product or service to the networked data target using the deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target such that, without necessitating any pre-existing relationship between the networked data source and the networked data target, an electronic product or service order form at the networked data target is automatically filled in or acted upon with the user-specified values pertaining to the product or service and presented on the user device.
Claim 9
The system of claim 8, wherein the dynamic data includes location information of the networked data source or the networked data target.
Claim 10
The system of claim 8, wherein the networked data source or the networked data target is embodied on a mobile device and wherein the dynamic data comprises location information of the mobile device.
Claim 11

The system of claim 10, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the mobile device embodying the networked data source.
Claim 12
The system of claim 8, wherein the networked data target is embodied on a mobile device and wherein the field identifiers of the networked data target include a field identifier for a location of the networked data target.
Claim 13
The system of claim 8, wherein the networked data source is embodied on a first mobile device, wherein the networked data target is embodied on a second mobile device.
Claim 14
The system of claim 13, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the first mobile device embodying the networked data source, the second mobile device embodying the networked data target, or both.
Claim 15
[15PRE] A computer program product comprising a non-transitory computer-readable medium storing instructions translatable by a processor of a computer system to perform:
[15A] in response to a user interacting with a user interface of a networked data source on a user device, accessing a universal variable data database, the universal variable data database representing a universal variable map of searchable classes and attributes of products or services on the Internet, the universal variable data database maintained by the system;
[15B] determining, based on dynamic data collected through the user interface while the user is interacting with the user interface of the networked data source, field identifiers of the networked data source stored in the universal variable data database, the dynamic data containing user-specified values pertaining to a product or service;
[15C] determining field identifiers of a networked data target that are mapped to the field identifiers of the networked data source in the universal variable data database;
[15D] automatically generating, using the universal variable data database, a deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target;

[15E] presenting the deep-linked ad through the user interface of the networked data source on the user device; and

[15F] responsive to the user selecting the deep-linked ad through the user interface of the networked data source on the user device, passing the user-specified values pertaining to the product or service to the networked data target using the deep-linked ad that links the field identifiers of the networked data source and the field identifiers of the networked data target such that, without necessitating any pre-existing relationship between the networked data source and the networked data target, an electronic product or service order form at the networked data target is automatically filled in or acted upon with the user-specified values pertaining to the product or service and presented on the user device.

Claim 16

The computer program product of claim 15, wherein the dynamic data includes location information of the networked data source or the networked data target.

Claim 17

The computer program product of claim 15, wherein the networked data source or the networked data target is embodied on a mobile device and wherein the dynamic data comprises location information of the mobile device.

Claim 18

The computer program product of claim 17, wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the mobile device embodying the networked data source.

Claim 19

The computer program product of claim 15, wherein the networked data target is embodied on a mobile device and wherein the field identifiers of the networked data target include a field identifier for a location of the networked data target.

Claim 20

The computer program product of claim 15, wherein the networked data source is embodied on a first mobile device, wherein the networked data target is embodied on a second mobile device, and wherein, in addition to the user-specified values pertaining to the product or service, the electronic product or service order form at the networked data target is automatically filled in or acted upon with the location information of the first mobile device embodying the networked data source, the second mobile device embodying the networked data target, or both.

CERTIFICATE OF SERVICE UNDER 37 C.F.R. §42.6 (E)(4)

I certify that on October 2, 2024, I will cause a copy of the foregoing document, including any exhibits or appendices filed therewith, to be served via Overnight FedEx at the following correspondence address of record for the patent:

Metarail, Inc.
1901 Central Drive, #716
Bedford, TX 76021

Date: October 2, 2024

/MacAulay Rush/
MacAulay Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24, the undersigned certifies that the foregoing Petition for *Inter Partes* Review contains 13,043 words excluding a table of contents, a table of authorities, Mandatory Notices under §42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioner has relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: October 2, 2024

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