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|                                                                                                                              |                        |                     |
|------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|
| <b>UTILITY<br/>PATENT APPLICATION<br/>TRANSMITTAL</b><br><br>(Only for new nonprovisional applications under 37 CFR 1.53(b)) | Attorney Docket No.    | 090611-0431867      |
|                                                                                                                              | First Named Inventor   | Robert A. KENNEWICK |
|                                                                                                                              | Title                  | PLEASE SEE ADDENDUM |
|                                                                                                                              | Express Mail Label No. |                     |

|                                                                                                            |                                                                                             |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>APPLICATION ELEMENTS</b><br><i>See MPEP chapter 600 concerning utility patent application contents.</i> | <b>Commissioner for Patents</b><br><b>P.O. Box 1450</b><br><b>Alexandria, VA 22313-1450</b> |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>1.</b> <input type="checkbox"/> <b>Fee Transmittal Form</b><br>(PTO/SB/17 or equivalent)                                                                                                                                                                                                                                                                                                                                    | <b>ACCOMPANYING APPLICATION PAPERS</b> |
| <b>2.</b> <input checked="" type="checkbox"/> <b>Applicant asserts small entity status.</b><br>See 37 CFR 1.27                                                                                                                                                                                                                                                                                                                 |                                        |
| <b>3.</b> <input type="checkbox"/> <b>Applicant certifies micro entity status.</b> See 37 CFR 1.29.<br>Applicant must attach form PTO/SB/15A or B or equivalent.                                                                                                                                                                                                                                                               |                                        |
| <b>4.</b> <input checked="" type="checkbox"/> <b>Specification</b> [Total Pages <u>55</u> ]<br>Both the claims and abstract must start on a new page.<br>(See MPEP § 608.01(a) for information on the preferred arrangement)                                                                                                                                                                                                   |                                        |
| <b>5.</b> <input checked="" type="checkbox"/> <b>Drawing(s)</b> (35 U.S.C. 113) [Total Sheets <u>7</u> ]                                                                                                                                                                                                                                                                                                                       |                                        |
| <b>6.</b> <input type="checkbox"/> <b>Inventor's Oath or Declaration</b> [Total Pages _____]<br>(including substitute statements under 37 CFR 1.64 and assignments<br>serving as an oath or declaration under 37 CFR 1.63(e))<br>a. <input type="checkbox"/> Newly executed (original or copy)<br>b. <input type="checkbox"/> A copy from a prior application (37 CFR 1.63(d))                                                 |                                        |
| <b>7.</b> <input checked="" type="checkbox"/> <b>Application Data Sheet</b> * See note below.<br>See 37 CFR 1.76 (PTO/AIA/14 or equivalent)                                                                                                                                                                                                                                                                                    |                                        |
| <b>8.</b> <b>CD-ROM or CD-R</b><br>in duplicate, large table, or Computer Program (Appendix)<br><input type="checkbox"/> Landscape Table on CD                                                                                                                                                                                                                                                                                 |                                        |
| <b>9.</b> <b>Nucleotide and/or Amino Acid Sequence Submission</b><br>(if applicable, items a. - c. are required)<br>a. <input type="checkbox"/> Computer Readable Form (CRF)<br>b. <input type="checkbox"/> Specification Sequence Listing on:<br>i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or<br>ii. <input type="checkbox"/> Paper<br>c. <input type="checkbox"/> Statements verifying identity of above copies |                                        |
| <b>10.</b> <input type="checkbox"/> <b>Assignment Papers</b><br>(cover sheet & document(s))<br>Name of Assignee _____                                                                                                                                                                                                                                                                                                          |                                        |
| <b>11.</b> <input type="checkbox"/> <b>37 CFR 3.73(c) Statement</b><br>(when there is an assignee) <input type="checkbox"/> <b>Power of Attorney</b>                                                                                                                                                                                                                                                                           |                                        |
| <b>12.</b> <input type="checkbox"/> <b>English Translation Document</b><br>(if applicable)                                                                                                                                                                                                                                                                                                                                     |                                        |
| <b>13.</b> <input type="checkbox"/> <b>Information Disclosure Statement</b><br>(PTO/SB/08 or PTO-1449)<br><input type="checkbox"/> Copies of citations attached                                                                                                                                                                                                                                                                |                                        |
| <b>14.</b> <input type="checkbox"/> <b>Preliminary Amendment</b>                                                                                                                                                                                                                                                                                                                                                               |                                        |
| <b>15.</b> <input type="checkbox"/> <b>Return Receipt Postcard</b><br>(MPEP § 503) (Should be specifically itemized)                                                                                                                                                                                                                                                                                                           |                                        |
| <b>16.</b> <input type="checkbox"/> <b>Certified Copy of Priority Document(s)</b><br>(if foreign priority is claimed)                                                                                                                                                                                                                                                                                                          |                                        |
| <b>17.</b> <input type="checkbox"/> <b>Nonpublication Request</b><br>Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35<br>or equivalent.                                                                                                                                                                                                                                                                   |                                        |
| <b>18.</b> <input type="checkbox"/> <b>Other:</b> _____<br>_____<br>_____                                                                                                                                                                                                                                                                                                                                                      |                                        |

\*Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 must be included in an Application Data Sheet (ADS).  
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

|                                                                                                                                                        |  |                 |  |                                   |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|--|-----------------------------------|--|
| <b>19. CORRESPONDENCE ADDRESS</b>                                                                                                                      |  |                 |  |                                   |  |
| <input checked="" type="checkbox"/> The address associated with Customer Number: <u>00909</u> OR <input type="checkbox"/> Correspondence address below |  |                 |  |                                   |  |
| Name _____                                                                                                                                             |  |                 |  |                                   |  |
| Address _____                                                                                                                                          |  |                 |  |                                   |  |
| City _____                                                                                                                                             |  | State _____     |  | Zip Code _____                    |  |
| Country _____                                                                                                                                          |  | Telephone _____ |  | Email _____                       |  |
| Signature                                                                                                                                              |  | /Ngai B. Zhang/ |  | Date                              |  |
| Name (Print/Type)                                                                                                                                      |  | Ngai B. Zhang   |  | May 15, 2014                      |  |
|                                                                                                                                                        |  |                 |  | Registration No. (Attorney/Agent) |  |
|                                                                                                                                                        |  |                 |  | 65,473                            |  |

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**ADDENDUM**

**SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES**

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                              |                               |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------|----------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                              | <b>Attorney Docket Number</b> | 090611-0431867 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                              | <b>Application Number</b>     |                |
| <b>Title of Invention</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                               |                |
| <p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p> |                                                              |                               |                |

**Secrecy Order 37 CFR 5.2**

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

**Inventor Information:**

|                                                                                                                                                                                 |                        |                       |                    |                               |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|--------------------|-------------------------------|------------------------|
| <b>Inventor 1</b>                                                                                                                                                               |                        |                       |                    |                               | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                        |                       |                    |                               |                        |
| <b>Prefix</b>                                                                                                                                                                   | <b>Given Name</b>      | <b>Middle Name</b>    | <b>Family Name</b> | <b>Suffix</b>                 |                        |
|                                                                                                                                                                                 | ROBERT                 | A.                    | KENNEWICK          |                               |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                        |                       |                    |                               |                        |
| <b>City</b>                                                                                                                                                                     | BELLEVUE               | <b>State/Province</b> | WA                 | <b>Country of Residence i</b> | US                     |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                        |                       |                    |                               |                        |
| <b>Address 1</b>                                                                                                                                                                | 13660 NE 42ND STREET   |                       |                    |                               |                        |
| <b>Address 2</b>                                                                                                                                                                |                        |                       |                    |                               |                        |
| <b>City</b>                                                                                                                                                                     | BELLEVUE               | <b>State/Province</b> | WA                 |                               |                        |
| <b>Postal Code</b>                                                                                                                                                              | 98005                  | <b>Country i</b>      | US                 |                               |                        |
| <b>Inventor 2</b>                                                                                                                                                               |                        |                       |                    |                               | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                        |                       |                    |                               |                        |
| <b>Prefix</b>                                                                                                                                                                   | <b>Given Name</b>      | <b>Middle Name</b>    | <b>Family Name</b> | <b>Suffix</b>                 |                        |
|                                                                                                                                                                                 | DAVID                  |                       | LOCKE              |                               |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                        |                       |                    |                               |                        |
| <b>City</b>                                                                                                                                                                     | REDMOND                | <b>State/Province</b> | WA                 | <b>Country of Residence i</b> | US                     |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                        |                       |                    |                               |                        |
| <b>Address 1</b>                                                                                                                                                                | 11315 196TH AVENUE, NE |                       |                    |                               |                        |
| <b>Address 2</b>                                                                                                                                                                |                        |                       |                    |                               |                        |
| <b>City</b>                                                                                                                                                                     | REDMOND                | <b>State/Province</b> | WA                 |                               |                        |
| <b>Postal Code</b>                                                                                                                                                              | 98053                  | <b>Country i</b>      | US                 |                               |                        |
| <b>Inventor 3</b>                                                                                                                                                               |                        |                       |                    |                               | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                        |                       |                    |                               |                        |
| <b>Prefix</b>                                                                                                                                                                   | <b>Given Name</b>      | <b>Middle Name</b>    | <b>Family Name</b> | <b>Suffix</b>                 |                        |
|                                                                                                                                                                                 | MICHAEL                | R.                    | KENNEWICK          | Sr.                           |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                        |                       |                    |                               |                        |

|                                                                                                                                                                                 |                                                              |                        |             |                        |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------|-------------|------------------------|------------------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                                                                                       |                                                              | Attorney Docket Number |             | 090611-0431867         |                        |
|                                                                                                                                                                                 |                                                              | Application Number     |             |                        |                        |
| Title of Invention                                                                                                                                                              | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |             |                        |                        |
| City                                                                                                                                                                            | BELLEVUE                                                     | State/Province         | WA          | Country of Residence i | US                     |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                                                              |                        |             |                        |                        |
| Address 1                                                                                                                                                                       | 13407 NE 37TH PLACE                                          |                        |             |                        |                        |
| Address 2                                                                                                                                                                       |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | BELLEVUE                                                     | State/Province         | WA          |                        |                        |
| Postal Code                                                                                                                                                                     | 98075                                                        | Country i              | US          |                        |                        |
| Inventor 4                                                                                                                                                                      |                                                              |                        |             |                        | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                                                              |                        |             |                        |                        |
| Prefix                                                                                                                                                                          | Given Name                                                   | Middle Name            | Family Name | Suffix                 |                        |
|                                                                                                                                                                                 | MICHAEL                                                      | R.                     | KENNEWICK   | Jr.                    |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | BELLEVUE                                                     | State/Province         | WA          | Country of Residence i | US                     |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                                                              |                        |             |                        |                        |
| Address 1                                                                                                                                                                       | 13407 NE 37TH PLACE                                          |                        |             |                        |                        |
| Address 2                                                                                                                                                                       |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | BELLEVUE                                                     | State/Province         | WA          |                        |                        |
| Postal Code                                                                                                                                                                     | 98075                                                        | Country i              | US          |                        |                        |
| Inventor 5                                                                                                                                                                      |                                                              |                        |             |                        | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                                                              |                        |             |                        |                        |
| Prefix                                                                                                                                                                          | Given Name                                                   | Middle Name            | Family Name | Suffix                 |                        |
|                                                                                                                                                                                 | RICHARD                                                      |                        | KENNEWICK   |                        |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | WOODINVILLE                                                  | State/Province         | WA          | Country of Residence i | US                     |
| <b>Mailing Address of Inventor:</b>                                                                                                                                             |                                                              |                        |             |                        |                        |
| Address 1                                                                                                                                                                       | 14222 227TH AVENUE, NE                                       |                        |             |                        |                        |
| Address 2                                                                                                                                                                       |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | WOODINVILLE                                                  | State/Province         | WA          |                        |                        |
| Postal Code                                                                                                                                                                     | 98072                                                        | Country i              | US          |                        |                        |
| Inventor 6                                                                                                                                                                      |                                                              |                        |             |                        | <a href="#">Remove</a> |
| <b>Legal Name</b>                                                                                                                                                               |                                                              |                        |             |                        |                        |
| Prefix                                                                                                                                                                          | Given Name                                                   | Middle Name            | Family Name | Suffix                 |                        |
|                                                                                                                                                                                 | TOM                                                          |                        | FREEMAN     |                        |                        |
| <b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service |                                                              |                        |             |                        |                        |
| City                                                                                                                                                                            | MERCER ISLAND                                                | State/Province         | WA          | Country of Residence i | US                     |

|                                                                                                                                                                                           |                                                              |                        |                |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------|----------------|----|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                                                                                                 |                                                              | Attorney Docket Number | 090611-0431867 |    |
|                                                                                                                                                                                           |                                                              | Application Number     |                |    |
| Title of Invention                                                                                                                                                                        | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |                |    |
|                                                                                                                                                                                           |                                                              |                        |                |    |
| <b>Mailing Address of Inventor:</b>                                                                                                                                                       |                                                              |                        |                |    |
| Address 1                                                                                                                                                                                 |                                                              | 6735 83RD AVENUE, SE   |                |    |
| Address 2                                                                                                                                                                                 |                                                              |                        |                |    |
| City                                                                                                                                                                                      | MERCER ISLAND                                                |                        | State/Province | WA |
| Postal Code                                                                                                                                                                               | 98040                                                        |                        | Country        | US |
| All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button. <span style="float: right;"><b>Add</b></span> |                                                              |                        |                |    |

### Correspondence Information:

|                                                                                                                                       |                            |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|
| Enter either Customer Number or complete the Correspondence Information section below.<br>For further information see 37 CFR 1.33(a). |                            |                                      |
| <input type="checkbox"/> An Address is being provided for the correspondence information of this application.                         |                            |                                      |
| Customer Number                                                                                                                       | 00909                      |                                      |
| Email Address                                                                                                                         | Docket_ip@pillsburylaw.com | <b>Add Email</b> <b>Remove Email</b> |

### Application Information:

|                                         |                                                              |                                           |                                     |
|-----------------------------------------|--------------------------------------------------------------|-------------------------------------------|-------------------------------------|
| Title of the Invention                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                                           |                                     |
| Attorney Docket Number                  | 090611-0431867                                               | Small Entity Status Claimed               | <input checked="" type="checkbox"/> |
| Application Type                        | Nonprovisional                                               |                                           |                                     |
| Subject Matter                          | Utility                                                      |                                           |                                     |
| Total Number of Drawing Sheets (if any) | 7                                                            | Suggested Figure for Publication (if any) |                                     |

### Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

|                                                        |                          |                                            |
|--------------------------------------------------------|--------------------------|--------------------------------------------|
| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
|                                                        |                          |                                            |

### Publication Information:

|                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Request Early Publication (Fee required at time of Request 37 CFR 1.219)                                                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> <b>Request Not to Publish.</b> I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application <b>has not and will not</b> be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing. |

|                                           |                                                              |                        |                |
|-------------------------------------------|--------------------------------------------------------------|------------------------|----------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                                              | Attorney Docket Number | 090611-0431867 |
|                                           |                                                              | Application Number     |                |
| Title of Invention                        | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |                |

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

|                    |                                                  |                                              |                                                         |
|--------------------|--------------------------------------------------|----------------------------------------------|---------------------------------------------------------|
| Please Select One: | <input checked="" type="radio"/> Customer Number | <input type="radio"/> US Patent Practitioner | <input type="radio"/> Limited Recognition (37 CFR 11.9) |
| Customer Number    | 00909                                            |                                              |                                                         |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

|                                                                                                                                |                 |                               |                          |                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|--------------------------|--------------------------|--------------------------|
| Prior Application Status                                                                                                       |                 | Pending                       |                          | <a href="#">Remove</a>   |                          |
| Application Number                                                                                                             |                 | Continuity Type               |                          | Prior Application Number | Filing Date (YYYY-MM-DD) |
|                                                                                                                                |                 | Continuation of               |                          | 12365516                 | 2009-02-04               |
| Prior Application Status                                                                                                       |                 | Patented                      |                          | <a href="#">Remove</a>   |                          |
| Application Number                                                                                                             | Continuity Type | Prior Application Number      | Filing Date (YYYY-MM-DD) | Patent Number            | Issue Date (YYYY-MM-DD)  |
| 12365516                                                                                                                       | Continuation of | 11747547                      | 2007-05-11               | 7502738                  | 2009-03-10               |
| Prior Application Status                                                                                                       |                 | Patented                      |                          | <a href="#">Remove</a>   |                          |
| Application Number                                                                                                             | Continuity Type | Prior Application Number      | Filing Date (YYYY-MM-DD) | Patent Number            | Issue Date (YYYY-MM-DD)  |
| 11747547                                                                                                                       | Division of     | 10452147                      | 2003-06-03               | 7398209                  | 2008-07-08               |
| Prior Application Status                                                                                                       |                 | Expired                       |                          | <a href="#">Remove</a>   |                          |
| Application Number                                                                                                             |                 | Continuity Type               |                          | Prior Application Number | Filing Date (YYYY-MM-DD) |
| 10452147                                                                                                                       |                 | Claims benefit of provisional |                          | 60384388                 | 2002-06-03               |
| Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the <a href="#">Add</a> button. |                 |                               |                          |                          |                          |

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

|                                           |                                                              |                        |                |
|-------------------------------------------|--------------------------------------------------------------|------------------------|----------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                                              | Attorney Docket Number | 090611-0431867 |
|                                           |                                                              | Application Number     |                |
| Title of Invention                        | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |                |

|                    |                      |                          |                                                                                                                                                   |
|--------------------|----------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Number | Country <sup>i</sup> | Filing Date (YYYY-MM-DD) | <div style="text-align: right;"><span style="border: 1px solid black; padding: 2px;">Remove</span></div> Access Code <sup>j</sup> (if applicable) |
|                    |                      |                          |                                                                                                                                                   |

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Add

## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.<br>NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA. |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Authorization to Permit Access:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                               |
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| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Authorization to Permit Access to the Instant Application by the Participating Offices</b> |
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|-------------------------------------------|--------------------------------------------------------------|------------------------|----------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                                              | Attorney Docket Number | 090611-0431867 |
|                                           |                                                              | Application Number     |                |
| Title of Invention                        | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |                |

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| <b>Applicant 1</b> <span style="float: right; border: 1px solid black; padding: 2px 5px;">Remove</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                        |                                      |       |
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| <span style="border: 1px solid black; padding: 2px 5px;">Clear</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        |                                      |       |
| <input checked="" type="radio"/> Assignee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="radio"/> Legal Representative under 35 U.S.C. 117         | <input type="radio"/> Joint Inventor |       |
| <input type="radio"/> Person to whom the inventor is obligated to assign.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="radio"/> Person who shows sufficient proprietary interest |                                      |       |
| If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                        |                                      |       |
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| Name of the Deceased or Legally Incapacitated Inventor : <span style="border: 1px solid black; display: inline-block; width: 300px; height: 1.2em; vertical-align: middle;"></span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |                                      |       |
| If the Applicant is an Organization check here. <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |                                      |       |
| Organization Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VOICEBOX TECHNOLOGIES CORPORATION                                      |                                      |       |
| <b>Mailing Address Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |                                      |       |
| Address 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11980 NE 24TH STREET                                                   |                                      |       |
| Address 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SUITE 100                                                              |                                      |       |
| City                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | BELLEVUE                                                               | State/Province                       | WA    |
| Country <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US                                                                     | Postal Code                          | 98005 |
| Phone Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                        | Fax Number                           |       |
| Email Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                        |                                      |       |
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| <b>Application Data Sheet 37 CFR 1.76</b> |                                                              | Attorney Docket Number | 090611-0431867 |
|                                           |                                                              | Application Number     |                |
| Title of Invention                        | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |                        |                |

|                   |                                   |
|-------------------|-----------------------------------|
| Organization Name | VOICEBOX TECHNOLOGIES CORPORATION |
|-------------------|-----------------------------------|

**Mailing Address Information For Assignee including Non-Applicant Assignee:**

|               |                      |                |       |
|---------------|----------------------|----------------|-------|
| Address 1     | 11980 NE 24TH STREET |                |       |
| Address 2     | SUITE 100            |                |       |
| City          | BELLEVUE             | State/Province | WA    |
| Country i     | US                   | Postal Code    | 98005 |
| Phone Number  |                      | Fax Number     |       |
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| Signature  | /NGAI B. ZHANG/ |           | Date (YYYY-MM-DD) | 2014-05-15          |
| First Name | NGAI            | Last Name | ZHANG             | Registration Number |
|            |                 |           |                   | 65473               |

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## **SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES**

### Cross-Reference to Related Applications

[01] This application is a continuation of U.S. Patent Application Serial No. 12/365,516, entitled “Agent Architecture for Determining Meanings of Natural Language Utterances,” filed February 4, 2009, which is a continuation of U.S. Patent Application Serial No. 11/747,547, entitled “Systems and Methods for Responding to Natural Language Speech Utterance,” filed May 11, 2007, which is a divisional of U.S. Patent Application Serial No. 10/452,147, entitled “Systems and Methods for Responding to Natural Language Speech Utterance,” which issued as U.S. Patent No. 7,398,209 on July 8, 2008, and which claims priority from U.S. Provisional Patent Application Serial No. 60/384,388, filed June 3, 2002, the disclosures of which are hereby incorporated by reference in their entirety.

### Field of the Invention

[02] The present invention relates to the retrieval of online information or processing of commands through a speech interface. More specifically, the invention is a fully integrated environment allowing users to submit natural language speech questions and commands. Information that is sought may be obtained from a wide range of disciplines, making local and network queries to obtain the information, and presenting results in a natural manner even in cases where the question asked or the responses received are incomplete, ambiguous or subjective. The invention may further allow users to control devices and systems either locally or remotely using natural language speech commands.

Background of the Related Art

[03] A machine's ability to communicate with humans in a natural manner remains a difficult problem. Cognitive research on human interaction shows that a person asking a question or giving a command typically relies heavily on context and the domain knowledge of the person answering. On the other hand, machine-based queries (e.g., questions, commands, requests, and/or other types of communications) may be highly structured and are not inherently natural to the human user. Thus, human questions and machine processing of queries may be fundamentally incompatible. Yet the ability to allow a person to make natural language speech-based queries remains a desirable goal.

[04] Much work covering multiple methods has been done in the fields of natural language processing and speech recognition. Speech recognition has steadily improved in accuracy and today is successfully used in a wide range of applications. Natural language processing has previously been applied to the parsing of speech queries. Yet, current systems are generally unable to provide a complete environment for users to make natural language speech queries and receive natural sounding responses. There remains a number of significant barriers to creation of a complete natural language speech-based query and response environment.

**SUMMARY OF THE INVENTION**

[05] According to an aspect of the invention, one object of the invention is to overcome these and other drawbacks of prior systems.

[06] According to one aspect of the invention, in order for machines (e.g., computer devices) to properly respond to a question and/or a command that is in a natural language

form, machine processable queries and commands may be formulated after the natural language question and/or command has been parsed and interpreted.

[07] In another aspect of the invention, systems are provided which may overcome the deficiencies of prior systems through the application of a complete speech-based information query, retrieval, presentation and command environment. This environment makes maximum use of context, prior information, domain knowledge, and user specific profile data to achieve a natural environment for one or more users making queries or commands in multiple domains. Through this integrated approach, a complete speech-based natural language query and response environment may be created. Further, at each step in the process, accommodation may be made for full or partial failure and graceful recovery. The robustness to partial failure is achieved through the use of probabilistic and fuzzy reasoning at several stages of the process. This robustness to partial failure promotes the feeling of a natural response to questions and commands.

[08] According to another aspect of the invention, the system comprises a speech unit interface device that receives spoken natural language queries, commands and/or other utterances from a user, and a computer device or system that receives input from the speech unit and processes the input (e.g., retrieves information responsive to the query, takes action consistent with the command and performs other functions as detailed herein). The system may further generate a natural language speech response in response to the user and/or generate a natural language speech message without any prompting from a user such as an alert message.

[09] According to another aspect of the invention, the speech unit may be incorporated into the computer device or system, or may be a separate structure. If a separate structure,

the speech unit may be connected to the computer device via a wired or wireless connection. If a wireless connection, a base unit may be connected to the computer, internally or externally, to communicate with the speech unit.

[10] According to another aspect of the invention, the computer device or system may comprise a stand alone or networked PC, a PDA or other portable computer device, or other computer device or system. For convenience, these and other computer alternatives shall be referred to simply as a computer. One aspect of the invention comprises software that is installed onto the computer, where the software comprises one or more of the following modules: a speech recognition module for capturing the user input; a parser for parsing the input, a text to speech engine module for converting text to speech; a network interface for enabling the computer to interface with one or more networks; a graphical user interface module; and an event manager for managing events. Preferably, the event manager is in communication with a dictionary and phrases module, a user profile module that enables user profiles to be created, modified, and accessed, a personality module that enables various personalities to be created and used, an agent module, an update manager, and one or more databases.

[11] According to another aspect of the invention domain specific behavior and information is organized into agents. Agents are autonomous executables that receive, process and respond to user questions, queries, and commands. The agents provide complete, convenient and re-distributable packages or modules of functionality, typically for a specific domain or application. Agents can be complete packages of executable code, scripts, links to information, and other forms of communication data, required to provide a specific package of functionality, usually in a specific domain. In other words,

an agent includes everything that is needed to extend the functionality of the invention to a new domain. Further, agents and their associated data can be updated remotely over a network as new behavior is added or new information becomes available. Agents can use system resources and the services of other, typically more specialized, agents. Agents can be distributed and redistributed in a number of ways including on removable storage media, transfer over networks or attached to emails and other messages. An update manager is used to add new agents to the system or update existing agents.

[12] According to another aspect of the invention, license management capabilities allowing the sale of agents by third parties to one or more users on a one time or subscription basis may be provided. In addition, users with particular expertise may create agents, update existing agents by adding new behaviors and information, and making these agents for other users.

[13] In order to enhance the natural query and response environment, the system may format results in a manner enhancing the understandability to the user. The optimal formatting and presentation depends on the context of the questions, the contents of the response being presented, the history of the interaction with the user, the user's preferences and interests and the nature of the domain. Information presented in a rigid, highly formatted, or structured manner seems unnatural to most people. Thus a system simulates some aspects of human "personality". In some cases, the presentation of the response and the terms used are randomized so they do not appear rigidly formatted or mechanical. The use of other simulated personality characteristics is also desirable. For example, a response that may be upsetting to the user is best presented in a sympathetic manner. Finally, the results of many queries are long text strings, lists, tables or other

lengthy sets of data. Natural presentation of this type of information presents particular challenges. Simply reading the long response is generally not preferred. Therefore the system parses the most important sections from the response and, at least initially, only reports these. Determining what parts of a long response are presented depends on the context of the questions, the contents of the response being presented, the history of the interaction with the user, the user's preferences and interests and the nature of the domain. At the same time the system gives the user interactive control over what information and how much information is being presented, to stop the response all together, or to take other actions.

[14] According to another aspect of the invention, the system may process and respond to both questions or queries and commands. Keywords or context are used to determine if the user's utterance is a command or query. Some utterances can include both aspects of a command and a query or question. For example, a user may say, "record my favorite TV program". A query is required to determine the name, the channel, and time for the users favorite TV program. A command must be executed to set a video recorder to capture this program.

[15] For each user utterance including a question or query or set of questions or queries, the system may perform multiple steps possibly including:

- capture of the user's question or query through accurate speech recognition operating in a variety of real-world environments;
- parse and interpret the question or query;
- determine the domain of expertise required and context, invoking the proper resources, including agents;

- formulate one or more queries to one or more local and/or network data sources or sending appropriate commands to local or remote devices or the system itself;
- perform required formatting, variable substitutions and transformations to modify the queries to a form most likely to yield desired results from the available sources;
- execute the multiple queries or commands in an asynchronous manner and dealing gracefully with failures;
- extract or scrape the desired information from the one or more results, which may be returned in any one of a number of different formats;
- evaluate and interpret the results, including processing of errors, gathered and combine them into a single best result judged to be “best” even if the results are ambiguous, incomplete, or conflicting;
- perform required formatting, variable substitutions and transformations to modify the results to a form most easily understood by the user; and
- present the compound result, through a text to speech engine, to the user in a useful and expected manner.

[16] The above steps preferably are performed while accounting for the domain of expertise required, the context for the question or command, domain specific information, the history of the user’s interaction, user preferences, information sources or commands available, and responses obtained from the sources. At each stage probabilistic or fuzzy set decision and matching methods can be applied to deal with inconsistent, ambiguous, conflicting and incomplete information or responses. In addition, the use of

asynchronous queries that may result in rapid and graceful failure of some queries or commands may allow the system to robustly return results quickly and in a manner that seems natural to the user.

[17] Many everyday questions are inherently subjective and result in answers that are a matter of option or consensus as much as fact. Such questions are often ad hoc in their nature, as well. The system, according to another aspect of the invention, may use probabilistic and fuzzy set decision and matching methods to first identify the subjective nature of the question and to evaluate a range of possible answers, selecting the one answer or few answers that best represent the type of result desired by the user.

The context and expected results from a particular question may be highly dependent on the individual asking the question. Therefore, the system may create, store and use extensive personal profile information for each user. Information in the profile may be added and updated automatically as the user uses the system or may be manually added or updated by the user or by others. Domain specific agents may collect, store and use specific profile information, as may be required for optimal operations. Users can create commands for regularly used reports, automatically generated alerts, and other queries and for the formatting and presentation of results. The system may use profile data in interpreting questions, formulating queries, interpreting results of queries and presenting answers to the user. Examples of information in a user profile includes, history of questions asked, session histories, formatting and presentation preferences, special word spelling, terms of interest, special data sources of interest, age, sex, education, location or address, place of business, type of business, investments, hobbies, sports interests, news interests and other profile data.

[18] To create a natural question and response environment, the system according to one aspect of the invention, may attempt to provide rapid responses without requiring any additional information. The system may determine the mostly likely context or domain for a user's question or command, for example, by using a real-time scoring system or other technique. Based on this determination, the system may invoke the correct agent. The agent makes one or more queries and rapidly returns a formatted response. Thus, a user can receive a direct response to a set of questions, each with a different response or context. In some cases, the available information, including the query results, may not adequately answer the question. In such a situation, the user may be asked one or more questions to resolve the ambiguity. Additional queries may then be made before an adequate response is made. In these cases, the system may use context information, user profile information and domain specific information to minimize the interaction with the user required to deliver a response.

[19] If the confidence level of the domain or context score is not high enough to ensure a reliable response, the system can request that the user verify the question or command is correctly understood. In general, the question may be phrased to indicate the context of the question including all criteria or parameters. If the user confirms that the question is correct the system may proceed to produce a response. Otherwise, either the user can rephrase the original question, perhaps adding additional information to remove ambiguity, or the system may ask one or more questions to attempt to resolve the ambiguity or other actions may taken.

[20] Although the system, according to another aspect of the invention, is intended to be able to accept most any natural language question or command, ambiguity can still be

a problem. To assist users formulate concise questions and commands the system may support a voice query language. The language may help users clearly specify the keywords or contexts of the question or command along with the parameters or criteria. The system may provide built in training capabilities to help the user learn the best methods to formulate their questions and commands.

[21] In order to make the responses to user's questions and commands seem more natural, the system may employ one or more dynamically invokeable personalities. Personalities have specific characteristics, which simulate the behavioral characteristics of real humans. Examples of these characteristics include, sympathy, irritation, and helpfulness. The personality also randomizes aspects of responses, just as a real human would do. This behavior includes randomization of terms used and the order of presentation of information. Characteristics of the personality are invoked using probabilistic or fuzzy set decision and matching methods, and using criteria including the context for the question, the history of the user's interaction, user preferences, information sources available, responses obtained from the sources.

[22] According to another aspect of the invention, special procedures to present information that is in the form of long text strings, tables, lists or other long response sets may be employed. Simply presenting a long set of information in an ordered manner is not natural nor what most users have in mind. The system, using for example, probabilistic or fuzzy set matching methods, may extract the most relevant information to the user and presents these subsets first. Further the system may provide commands allowing the user to skip through the list, find keywords or key information in the list or stop processing the list altogether.

[23] In addition to the ability to process user questions and commands, the invention may provide local or remote control functions for the system or for other devices. Users may initiate commands locally or remotely. Several techniques for executing remote operations are possible, for example, the use of a telephone or other audio connection. Other remote command techniques may be used. The processing of these commands is performed in a nearly identical manner to a question. One difference being that the result of the command is generally an action rather than a response. Examples of control operations supported by the invention include, finding and playing music, film, games or other entertainment media, control of the appliances or other electronic or electro-mechanical devices, security systems control, audio, text and video conferencing (including Voice over IP conferencing), operating integrated messaging environments and other control operations. By using an optional analog or digital telephone interface or a data network interface, the invention can provide remote control capability of the computer or and auxiliary devices connected to the computer. For example, if the computer is connected via an interface to one or more auxiliary devices, a remote user can use this capability to remotely control or program the operation of the auxiliary device. For example, this enables recording of a television program, checking the status of a home security system, checking voice mail messages, hearing and responding to email messages, and much more. For each user command utterance the system may execute a number of steps possibly including:

- capture the user's command through accurate speech recognition operating in a variety of real-world environments;
- parse and interpret the command;

- determine the domain for the command and context, invoking the proper resources, including agents;
- formulate device specific commands for the system or external devices;
- route command to system, or external devices, including external devices connected to data networks;
- receive and process results of command, including errors; and
- optionally, provide response to user indicating the success or failure of the command, and possibly including state information.

[24] The system may be used in conjunction with a wide range of platform environments. These environments include, as a peripheral to a PC, a portable or wearable computer or other computer, embedded in a PC or other computer, on a personal digital assistant (e.g., a PDA with wireless networking capability, in a specialized device such as a bar code scanner or payment terminal, on a wireless telephone, or other platforms). If the invention is used with a mobile or portable device that has position location capability, the location data can be used by the invention as part of the context for user questions. A user may use the system on one or more devices. In this case history and profile information for the user may be synchronized between the multiple devices on a periodic basis or other basis.

[25] According to another aspect of the invention, the system may be deployed in a network of devices using common base of agents, data, information, user profiles and histories. Each user can then interact with, and receive the same services and applications at any location equipped with the required device on the network. For example, multiple devices on which the invention is deployed, and connected to a

network, can be placed at different locations throughout a home, place of business or other location. In such a case, the system may use the location of the particular device addressed by the user as part of the context for the questions asked.

[26] Multiple users may use the system at different times or during interleaved or overlapping sessions. The system recognizes the user either by name or voice. Once the user is recognized, the system invokes the correct profile. If multiple users are addressing the system in overlapping or interleaved sessions, the system determines which user is stating each question or command and applies the correct profile and context. For applications requiring security, the user is verified, typically by using voiceprint matching or requesting a password or pass-phrase from the user. When multiple users are engaged in interleaved sessions, the system gracefully resolves conflicts using a probabilistic or fuzzy set decision method. This process simulates the manner in which a human would address multiple questions. For example, the system may answer short questions first at times, while answering questions in the order received at other times.

[27] Given the desire for domain specific behavior, user specific behavior and domain specific information, the system, according to another aspect of the invention, may allow both users and content providers to extend the system capabilities, add data to local data sources, and add references to network data sources. To allow coverage of the widest possible range of topics, the system allows third party content developers to develop, distribute and sell specialized or domain specific system programs and information. Content is created through creation of new agents, scripting existing agents, adding new data to agents or databases and adding or modifying links to information sources.

Distribution of this information is sensitive to the users interests and use history and to their willingness to pay or not.

[28] According to another aspect of the invention, the system may allow users to disseminate their knowledge without programming. The system may include mechanisms that allow users to post and distribute agents and information in their particular areas of expertise, to improve system capability. Further, users can extend the system and configure it to their own preferences, add information to their profile to define new questions or queries, extend and modify existing questions and queries, add new data sources, update data sources, set preferences and specify presentation parameters for results.

[29] Since the invention may operate in many environments, including environments with background noise, point noise sources and people holding conversations, filtering of speech input may be performed. The invention may use, for example, either one-dimensional or two-dimensional array microphones to receive human speech. The array microphones can be use fixed or employ dynamic beam forming techniques. The array pattern may be adjusted to maximize gain in the direction of the user and to null point noise sources. Speech received at the microphones may then be processed with analog or digital filters to optimize the bandwidth, cancel echoes, and notch-out narrow band noise sources. Following filtering, the system may use variable rate sampling to maximize the fidelity of the encoded speech, while minimizing required bandwidth. This procedure may be particularly useful in cases where the encoded speech is transmitted over a wireless network or link.

[30] Some example applications for the invention include but are not limited to the following:

- white pages and yellow pages lookups to find email addresses, telephone numbers, street addresses and other information for businesses and individuals;
- personal address book, calendars and reminders for each user;
- automatic telephone dialing, reading and sending emails and pages by voice and other communications control functions;
- map, location and direction applications;
- movie or other entertainment locator, review information and ticket purchasing;
- television, radio or other home entertainment schedule, review information and device control from a local or remote user;
- weather information for the local area or other locations;
- stock and other investment information including, prices, company reports, profiles, company information, business news stories, company reports, analysis, price alerts, news alerts, portfolio reports, portfolio plans, etc.;
- flight or other scheduled transportation information and ticketing;
- reservations for hotels, rental cars and other travel services;
- local, national and international news information including headlines of interest by subject or location, story summaries, full stories, audio and video retrieval and play for stories;

- sports scores, news stories, schedules, alerts, statistics, back ground and history information, etc.;
- ability to subscribe interactively to multimedia information channels, including sports, news, business, different types of music and entertainment, applying user specific preferences for extracting and presenting information;
- rights management for information or content used or published;
- horoscopes, daily jokes and comics, crossword puzzle retrieval and display and related entertainment or diversions;
- recipes, meal planning, nutrition information and planning, shopping lists and other home organization related activities;
- as an interface to auctions and online shopping, and where the system can manage payment or an electronic wallet;
- management of network communications and conferencing, including telecommunications, email, instant messaging, Voice over IP communications and conferencing, local and wide area video and audio conferencing, pages and alerts;
- location, selection, management of play lists and play control of interactive entertainment from local or network sources including, video on demand, digital audio, such as MP3 format material, interactive games, web radio and video broadcasts;

- organization and calendar management for families, businesses and other groups of users including the management of, meetings, appointments, and events; and
- interactive educational programs using local and network material, with lesson material level set based on user's profile, and including, interactive multimedia lessons, religious instruction, calculator, dictionary and spelling, language training, foreign language translation and encyclopedias and other reference material.

[31] It will be appreciated that the foregoing statements of the features of the invention are not intended as exhaustive or limiting, the proper scope thereof being appreciated by reference to this entire disclosure and reasonably apparent variations and extensions thereof.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

[32] The invention will be described by reference to the preferred and alternative embodiments thereof in conjunction with the drawings in which:

[33] **FIG. 1** is an overall diagrammatic view according to one embodiment of the invention;

[34] **FIG. 2** is a schematic block diagram showing the agent architecture according to one embodiment of the invention;

[35] **FIG. 3** is a high level process for receiving natural language speech-based queries and/or commands and generating a response according to one embodiment of the invention;

[36] **FIG. 4A** is a process for receiving natural language speech-based queries and/or commands and generating a response according to one embodiment of the invention;

[37] **FIG. 4B** is a process for receiving natural language speech-based commands in order to locally or remotely control functions of devices according to one embodiment of the invention;

[38] **FIG. 5** is a process for correctly interpreting a user's utterance according to one embodiment of the invention; and

[39] FIG. 6 is a process for determining the proper domain agents to invoke and the properly formatted queries and/or commands that is to be submitted to the agents according to one embodiment of the invention.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

[40] The fact that most natural language queries are incomplete in their definition is a significant barrier to natural human query-response interaction between humans and machines. Further, some questions can only be interpreted in the context of previous questions, knowledge of the domain, or the user's history of interests and preferences. Thus, some natural language questions may not be easily transformed to machine processable form. Compounding this problem, many natural language questions are ambiguous or subjective. In these cases, the formation of a machine processable query and returning of a natural language response is difficult at best.

[41] In order for machines (e.g., computer devices) to properly respond to a question or a command that is in a natural language form, machine processable queries and commands may be formulated after the natural form question or command has been parsed and interpreted. Depending on the nature of the question or command, there may not be a simple set of queries and commands that will return an adequate response. Several queries and commands may need to be initiated and even these queries and commands may need to be chained or concatenated to achieve a complete result. Further, no single available source may contain the entire set of results required. Thus multiple queries and/or commands, perhaps with several parts, may be needed for multiple data sources, which can be both local or on a network. Not all of these sources, queries and/or commands will return useful results or any results at all. Useful results that are returned

are often embedded in other information, and from which they may need to be extracted. For example, a few key words or numbers often need to be “scraped” from a larger amount of other information in a text string, table, list, page or other information. At the same time, other extraneous information such as graphics or pictures needs to be removed to process the response. In any case, the multiple results must be evaluated and combined to form the best possible answer, even in the case where some queries do not return useful results or fail entirely. In cases where the question is ambiguous or the result inherently subjective, determining the best result to present is a complex process. Finally, to maintain a natural interaction, responses need to be returned rapidly to the user. Managing and evaluating complex and uncertain queries while maintaining real-time performance is a significant challenge.

[42] The following detailed description refers to the accompanying drawings, and describes exemplary embodiments of the present invention. Other embodiments are possible and modifications may be made to the exemplary embodiments without departing from the spirit, functionality and scope of the invention. Therefore, the following detailed descriptions are not meant to limit the invention.

[43] The present invention provides a complete speech-based information query, retrieval, processing and presentation environment. In addition, the invention may be useful for control of the system itself and/or external devices. This integrated environment makes maximum use of context, prior information and domain and user specific profile data to achieve a natural environment for one or more users making queries or stating commands in multiple domains. Through this integrated approach, a complete speech-based natural language query, command and response environment may

be created. **FIG. 1** shows a schematic diagram view of a system **90** according to an embodiment of the invention.

[44] The system **90** may include a main unit **98** and a speech unit **128**. Alternatively, the system **98** may only comprise of the main unit **98**, the speech unit **128** being a completely separate system. The event manager **100** may mediate interactions between other components of the main unit **98**. The event manager **100** provides a multi-threaded environment allowing the system **98** to operate on multiple commands or questions from multiple user sessions without conflict and in an efficient manner, maintaining real-time response capabilities.

[45] Agents **106** contain packages of both generic and domain specific behavior for the system **98**. Agents **106** may use nonvolatile storage for data, parameters, history information, and locally stored content provided in the system databases **102** or other local sources. User specific data, parameters, and session and history information that may determine the behavior of agents **106** are stored in one or more user profiles **110**. Data determining system personality characteristics for agents are stored in the one or more personality module **108**. The update manager **104** manages the automatic and manual loading and updating of agents **106** and their associated data from the Internet **136** or other network through the network interface **116**.

[46] The main user interface for the system **90**, according to an embodiment of the invention, is through one or more speech units **128**. The speech unit **128** includes one or more microphones, for example array microphone **134**, to receive the utterances of the user. The speech received at the microphone **134** may be processed by filter **132** and passed to the speech coder **138** for encoding and compression. In one embodiment, a

transceiver module **130** transmits the coded speech to the main unit **98**. Coded speech received from the main unit **98** is detected by the transceiver **130**, then decoded and decompressed by the speech coder **138** and annunciated by the speaker **136**.

[47] The one or more speech units **128** and the main unit **98** may communicate over a communication link. The communication link can include a wired or wireless link. According to one embodiment, the communication link comprises an RF link. The transceiver **130** on the speech unit communicates coded speech data bi-directionally over the communication link with the transceiver **126** on the main unit **98**. According to another embodiment, RF link may use any standard local area wireless data protocols including the IEEE 802.11, Bluetooth or other standards. Alternatively, an infrared data link conforming to any suitable standard such as IrDA or other infrared standards can be used. In an alternative embodiment, wires connect the speech unit **128** and the main unit **98**, eliminating the need for one speech coder **138**. Other wired or wireless analog or digital transmission techniques can be used.

[48] Coded speech received at the transceiver **126** on the main unit **98** is passed to the speech coder **122** for decoding and decompression. The decoded speech is processed by the speech recognition engine **120** using data in the dictionary and phrases module **112** and received from the agents **106**. The recognized words and phrases are processed by the parser **118**, which transforms them into complete commands and questions using data supplied by an agent[s] **106**. The agent[s] **106** then process the commands or questions. The agent[s] **106** create queries to local databases **102** or through the network interface **116** to data sources on the Internet **136** or other networks. Commands typically result in actions taken by the system **90** itself (i.e., pause or stop), or to a remote device or data

source (i.e., download data or program, or control a remote device), through the network interface to the Internet or other data interface.

[49] The agents **106** return results of questions as responses to users. The response may be created using the results of information queries, the system personality **108** and the user preferences or other data in the user profile **110**. The agents **106** generally present these results using the speech unit **128**. The agents **106** create a response string, which is sent to the text to speech engine **124**. The text to speech engine **124** creates the required utterances, which may be encoded and compressed by the speech coder **122**. Once coded, the utterances are transmitted from the main unit **98** by the transceiver **126** to the transceiver **130** on the speech unit **128**. The utterance is then decoded and decompressed by the speech coder **138** and output by the speaker **136**.

[50] The graphical user interface **114** can be used as a substitute or complement to the speech interface. For example, the graphical user interface **114** can be used to view and interact with graphical or tabular information in a manner more easily digested by the user. The graphical user interface can show system state and history in a more concise manner than the speech interface. Users can use the graphical user interface to create or extend agents **106**. These operations can include scripting of agents, adding data to the agent or databases **102** used by the agent, adding links to information sources.

[51] The system **90** may comprise of different types of agents. In one embodiment of the invention, generic and domain specific behavior and information may be organized into domain agents. A system agent, on the other hand, provides default functionality and basic services. The domain specific agents provide complete, convenient and re-distributable packages or modules for each application area. In other words, a domain

agent includes everything needed to extend or modify the functionality of the system **90** in a current or new domain. Further, domain agents and their associated data can be updated remotely over a network as new behavior is added or new information becomes available. Domain agents may use the services of other, typically more specialized, agents and the system agent. Agents are distributed and redistributed in a number of ways including on removable storage media, transfer over networks or attached to emails and other messages. The invention may provide license management capability allowing the sale of agents by third parties to one or more users on a one time or subscription basis. In addition, users with particular expertise may create agents, update existing agents by adding new behaviors and information and making these agents to other users. A block diagram of an agent architecture according to an embodiment of the invention is shown in **FIG. 2**.

[52] Agents **106** receive and return events to the event manager **100**. Both system agents **150** and domain agents **156** receive questions and commands from the parser **118**. Based on keywords in the questions and commands and the structures of the questions and commands, the parser invokes the required agent[s]. Agents use the nonvolatile storage for data, parameters, history information and local content provided in the system databases **102**. When the system starts-up or boots-up the agent manager **154** may load and initialize the system agent **150** and the one or more domain agents **156**. At shutdown the agent manager unloads the agents. The agent manager **154** also performs license management functions for the domain agents **156** and content in the databases **102**.

[53] The system agent **150** manages the criteria handlers **152**, which handle specific parameters or values (criteria) used to determine context for questions and commands. Both the system agent **150** and the domain agents **156** use the criteria handlers **152**. The various domain agents **156** can use the services of the system agent **150** and of other, typically more specialized, domain agents **156**. The system agent **150** and the domain agents **156** use the services of the agent library **158**, which contains utilities for commonly used functions. The library may include utilities for text and string handling, network communications, database lookup and management, fuzzy and probabilistic evaluation, text to speech formats, and other utilities.

[54] Domain agents **156** can be data-driven, scripted or created with compiled code. A base of generic agent is used as the starting point for data-driven or scripted agents. Agents created with compiled code are typically built into dynamically linkable or loadable libraries. Developers of agents can add new functionality to the agent library **158** as required. Details of agent distribution and update, and agent creation or modification are discussed in sections below.

[55] The invention, according to another embodiment of the invention, may provide capabilities to distribute and update system agents **150**, domain agents **156**, agent library components **158**, databases **102**, and dictionary and phrase entries **112** over wireless or wired networks **136**, including dial-up networks using the update manager **104**. The network interface **116** may provide connections to one or more networks. The update manager **104** may also manages the downloading and installation of core system updates. The agent manager **154** may perform license management functions for the domain agents and the databases. The update manager **104** and agent manager **154** may perform

these functions for all agents and database content including, agents and content available to all users or agents and content only available to certain users. Examples of agent and database components added or updated on a periodic basis include:

- agents for new domains;
- additional domain knowledge for agents;
- new keywords for a domain, which can include names of politicians, athletes, entertainers, names of new movies or songs, etc. who have achieved recent prominence;
- links to a preferred set of information sources for the domains covered including links for, entertainment, news, sports, weather, etc.;
- updates to domain information based on, for example, changes to tax laws, company mergers, changing political boundaries; and
- updates to content, including dictionaries, encyclopedias and almanacs; and
- other content and database components.

[56] When a user requires or selects a new domain agent **156** or database element **102**, the update manager **104** may connect to their source on the network **136** through the network interface **116**, download and install the agent or data. To save system resources and to comply with any license conditions, the update manager **104** may uninstall agents that are no longer in use. In one embodiment of the invention, the update manager **104** periodically queries one or more sources of the licensed agents and database components to locate and download updates to agent executables, scripts or data as they become

available. Alternatively, the agent sources may initiate the downloading of agent updates of the registered or licensed agents to the update manager as they become available.

[57] The agent manager **154** may provide a license management client capable of executing most any license terms and conditions. When a particular agent **106** and/or database element **102** is required by a command, the agent manager **154** verifies that the use of the agent or data element is within the allowed terms and conditions, and if so, invokes the agent or allows access to the data element. License management schemes that can be implemented through the agent manager **154** include outright purchase, subscription for updates, one time or limited time use. Use of shared agents and data elements (such as those downloaded from web sites maintained by groups of domain experts) may also be managed by the agent manager **154**.

[58] If a question or command requires an agent, currently not loaded on the system, the agent manager **154** may search the network **136** through the network interface **116** to find a source for a suitable agent. Once located, the agent can be loaded under the control of the update manager **104**, within the terms and conditions of the license agreement as enforced by the agent manger.

[59] New commands, keywords, information, or information sources can be added to any domain agent **156** by changing agent data or scripting. These configuration capabilities may allow users and content developers to extend and modify the behavior of existing domain agents **156** or to create new domain agents **156** from a generic agent without the need to create new compiled code. Thus, the modification of the domain agents **156** may range from minor data-driven updates by even the most casual users, such as specifying the spelling of words, to development of complex behavior using the

scripting language as would typically be done by a domain expert. The user can create and manage modifications to domain agents **156** through speech interface commands or using a graphical user interface **114**. User-specific modifications of domain agents **156** are stored in conjunction with the user's profile **110** and accessed by the domain agent **156** at run-time.

[60] The data used to configure data driven agents **156** are structured in a manner to facilitate efficient evaluation and to help developers with organization. These data are used not only by the agents **156**, but also by the speech recognition engine **120**, the text to speech engine **124**, and the parser **118**. Examples of some major categories of data include:

1. Content packages include questions or commands. Each command or question or group of commands or questions includes contexts used for creation of one or more queries. The agent **156** passes a regular grammar expression to the parser **118** for evaluation of a context or question. An initial or default context is typically supplied for each command or question. The command or question includes a grammar for the management and evaluation of the context stack.
2. Page lists or pointers to other local or network content sources. For each page or content source there is a pointer (e.g. URL, URI, or other pointer) to the page or source. Each page has specific scraping information used to extract the data of interest. The scraping information includes matching patterns, HTML or other format parsing information.

3. A response list, determining the response of the agent 156 to a particular command or question given the context, the user profile and the information retrieved. Responses can include diagnostic error messages or requests for more information if the question or command cannot yet be resolved from the known information. Responses can be based on or dependent on thresholds or probabilistic or fuzzy weights for the variables.
4. Substitution lists containing variable substitutions and transformations, often applied by the agents **150**, **156** in the formatting of queries and results. For example, a stock domain specific agent **156** would use a substitution list of company trading symbols, company names and commonly used abbreviations. Substitutions and transformations can be performed on commands and questions to create precise queries, which can be applied against one or more information sources or to results for creating more meaningful output to the user. Substitution lists also include information for optimally dealing with structured information, such as HTTP formatted page parsing and evaluation.
5. Personalities used for responses. Personalities are constructed by combining multiple traits in a weighted manner. Weights can be specified for each agent's domain area to create one or more specific personalities. Examples of personality traits include, sarcasm, humor, irritation, and sympathy, and other traits.
6. Public and user specific parameters for sources, substitutions, transformations, variables or criteria. The public parameter lists are part of the

agent package **156**. The user specific parameters are contained in the user profile **110**.

[61] Commands and questions are interpreted, queries formulated, responses created and results presented based on the users personal or user profile **110** values. Personal profiles may include information specific to the individual, their interests, their special use of terminology, the history of their interactions with the system, and domains of interest. The personal profile data may be used by the agents **106**, the speech recognition engine **120**, the text to speech engine **124**, and the parser **118**. Preferences can include, special (modified) commands, past behavior or history, questions, information sources, formats, reports, and alerts. User profile data can be manually entered by the user and/or can be learned by the system **90** based on user behavior. User profile values may include:

- spelling preferences;
- date of birth for user, family and friends;
- income level;
- gender;
- occupation;
- location information such as, home address, neighborhood, and business address;
- car type;
- telecommunications and other service providers and services;
- financial and investment information;
- synonyms (i.e., a nick name for someone);

- special spelling;
- keywords;
- transformation or substitution variables;
- domains of interest; and
- other values.

[62] End users may use the data driven agent **156** extension and modification facilities and values stored in user profiles **110** to create special reports, packages of queries, alerts and output formats. A single alert or report can be configured to use multiple data sources, values, and other variables (i.e., time, location, etc.) to condition or otherwise determine when an alert should be sent. For example, an alert can be generated by sampling a stock price every fifteen minutes and sending an alert if the price drops below some value. To create a report, the user first specifies a set of commands or questions. Next, the user creates or selects a format for the report. Finally the user may name the report. A report can have variable parameters. For example, a user may create a company stock report, and execute the report by stating its name and the company name, which gives the user selected information and in a specified format for that company. In another example, a user can create a “morning” report, which presents selected multimedia information from different sources (news, sports, traffic, weather) in the order and formats desired. Alerts and reports can be created using only voice commands and responses, commands and responses through the graphical user interface **114**, or a combination of the two. To create a report, alert, or other specialized behavior, the user performs a number of steps including:

- specify the command to run a report or alert;

- specify the question or questions, including keywords, used for a query;
- set the criteria for running the report such as on command or when a particular condition is met;
- define preferred information sources;
- define preferences for order of result evaluation by source, value, etc.;
- specify the presentation medium for a report or alert, such as an email, the text to speech engine, a message to a pager, or a text and graphics display; and
- specify the preferred format for the report, such as information to be presented, order of information to be presented, preferred abbreviations or other variable substitutions.

[63] Filtering and noise elimination may be important in facilitating the various functionalities of the system **90**. The accurate recognition and parsing of the user's speech requires the best possible signal to noise ratio at the input to the speech recognition engine **120**. To accomplish the required improvements an array microphone **134** and a filter **132** are employed. According to an embodiment of the invention, the microphone array, filters and speech coder **138** are physically separated from the main unit **98** into a speech unit **128**, and connected using a wireless link. Since bandwidth on a wireless connection is at a premium, the speech coder dynamically adapts the digitization rate and compression of the captured speech.

[64] The speech unit **128** may use an array of microphones **134** to provide better directional signal capture and noise elimination than can be achieved with a single microphone. The microphone array can be one-dimensional (a linear array) or two-

dimensional (a circle, square, triangle or other suitable shape). The beam pattern of the array can be fixed or made adaptive through use of analog or digital phase shifting circuitry. The pattern of the active array is steered to point in the direction of the one or more users speaking. At the same time nulls can be added to the pattern to notch out point or limited area noise sources. The use of the array microphone also helps reduce the cross talk between output from the text to speech engine **124** through the speaker **136** and detection of the user's speech.

[65] The microphone can be complemented with an analog or digital (i.e., Voice over IP) speech interface. This interface allows a remote user to connect to the system and interact with it in the same manner possible if they were physically present.

[66] The speech unit **128**, according to an embodiment of the invention, may use an analog or digital filter **132** between the array microphone **134** and the speech coder **138**. The pass band of the filter is set to optimize the signal to noise ratio at the input to the speech recognition engine **120**. In some embodiments, the filter is adaptive, using band shaping combined with notch filtering to reject narrow-band noise. In one embodiment of the invention, the system **90** may employ adaptive echo cancellation in the filter. The echo cancellation helps prevent cross talk between output from the text to speech engine and detection of the user's speech as well as suppression of environmentally caused echoes. Algorithms comparing the background noise to the signal received from the user's speech are used to optimize the band-shaping parameters of the adaptive filter. Those skilled in the art will be familiar with multiple techniques used to construct suitable digital and analog filters.

[67] The speech received by the array microphone **134** and passed through the filter **132** may be sent to the speech digitizer or coder **138**. The speech coder **138** may use adaptive lossy audio compression to optimize bandwidth requirements for the transmission of the coded speech to the speech recognition engine **120** over a wireless link. The lossy coding may be optimized to preserve only the components of the speech signal required for optimal recognition. Further, the lossy compression algorithms that may be used may be designed to prevent even momentary gaps in the signal stream, which can cause severe errors in the speech recognition engine. The digitized speech may be buffered in the coder and the coder may adapt the output data rate to optimize the use of the available bandwidth. The use of the adaptive speech coder is particularly advantageous when a band-limited wireless link is used between the coder and the speech recognition engine.

[68] In an alternative embodiment, the array microphone can be replaced by a set of physically distributed microphones or a headset worn by the user. The distributed microphones can be placed in different parts of a room or in different rooms. The distributed microphones can create a three-dimensional array to improve signal to noise ratio. The headset may use a wireless or wired connection.

[69] While the invention is intended to be able to accept most any natural language question or command, ambiguity can still be a problem. To assist users formulate concise questions and commands the system **90** may support a voice query language. The language is structured to allow a variety of queries with minimal ambiguity. Thus, the voice query language helps users clearly specify the keywords or contexts of the question or command along with the parameters or criteria. The language provides a grammar to

clearly specify the keyword used to determine the context and a set of one or criteria or parameters. A user asking a question or stating a command in the voice query language is nearly always guaranteed to receive a response.

[70] The voice query language may be sensitive to the contents of the context stack. Thus, a following-on question can be asked using an abbreviated grammar, since keywords and criteria can be inherited from the stack. For example, the user can simply ask about another keyword if the criteria of the question remain constant.

[71] The system **90**, may provide built in training capabilities to help the user learn the best methods to formulate their questions and commands. The interactive training allows the user to audibly or visibly see the machine interpretation of their queries and provides suggestions on how to better structure a query. Using the interactive training a user can quickly become comfortable with the voice query language and at the same time learn how to optimize the amount of information required with each step of a dialog.

[72] The output of the speech coder **122** may be fed to the speech recognition engine **120**. The speech recognition engine **120** recognizes words and phrases, using information in the dictionary and phrase tables **112**, and passes these to the parser **118** for interpretation. The speech recognition engine **120** may determine the user's identity by voice and name for each utterance. Recognized words and phrases may be tagged with this identity in all further processing. Thus, as multiple users engage in overlapping sessions, the tags added by the speech recognition engine **120** to each utterance allows other components of the system **90** to tie that utterance to the correct user and dialog. The user recognition capability may further be used as a security measure for

applications, such as auctions or online shopping, where this is required. Voice characteristics of each user may be contained in the user profile **110**.

[73] A user may start a dialog with the system **90** when they first address it. This can be done by speaking a generic word (“computer”) or addressing a specific name (“Fred”), which may be generally tied to a system personality **108**. Once the user starts the dialog, it may be recognized by the speech recognition engine **120**, using unique characteristics of the user’s speech. At the end of a dialog or to interrupt a dialog, the user may utter a dismissal word (“good bye”).

[74] According to another embodiment of the invention, the system **90** may employ a speech recognition engine **120** seeding for improved word recognition accuracy, using data from the dictionary and phrase tables **112**, user profiles **110**, and the agents **106**. At the same time, the fuzzy set possibilities or prior probabilities for the words in the dictionary and phrase tables may be dynamically updated to maximize the probability of correct recognition at each stage of the dialog. The probabilities or possibilities may be dynamically updated based on a number of criteria including the application domain, the questions or commands, contexts, the user profile and preferences, user dialog history, the recognizer dictionary and phrase tables, and word spellings.

[75] For uncommon words or new vocabulary words, a user may be given the option to spell the words. The spelling may be done by saying the names or the letters or using a phonetic alphabet. The phonetic alphabet can be a default one or one of the user’s choosing.

[76] Alternatively, when a user uses a word that is not recognized at all or is not correctly recognized by the speech recognition engine **120** then the user may be asked to

spell the word. The speech recognition engine **120** determines this condition based on confidence level for the scoring process. The word is looked up in the dictionary **112** and the pronunciation for the word is added to either the dictionary, the agent **106**, or the user's profile **110**. The word pronunciation can then be associated with the domain, the question, the context and the user. Though this process the speech recognition engine learns with time and improves accuracy. To assist users in spelling words an individualized phonetic alphabet can be used. Each user can modify the standard phonetic alphabets with words, which they can remember more easily.

[77] Once the words and phrases have been recognized by the speech recognition engine **120**, the tokens and user identification is passed to the parser **118**. The parser **118** examines the tokens for the questions or commands, context and criteria. The parser **118** determines a context for an utterance by applying prior probabilities or fuzzy possibilities to keyword matching, user profile **110**, and dialog history. The context of a question or command determines the domain and thereby, the domain agent **156**, if any, to be evoked. For example, a question with the keywords "temperature" implies a context value of weather for the question. The parser dynamically receives keyword and associated prior probability or fuzzy possibility updates from the system agent **150** or an already active domain agent **156**. Based on these probabilities or possibilities the possible contexts are scored and the top one or few are used for further processing.

[78] The parser **118** uses a scoring system to determine the mostly likely context or domain for a user's question and/or command. The score is determined from weighting a number of factors, including the user profile **110**, the domain agent's data content, and previous context. Based on this scoring, the system **90** invokes the correct agent. If the

confidence level of the score is not high enough to ensure a reliable response, the system 90 may ask the user to verify whether the question and/or command is correctly understood. In general, the question that is asked by the system 90 may be phrased to indicate the context of the question including all criteria or parameters. For example, the question can be in the form of: "Did I understand that you want such-and-such?" If the user confirms that the question is correct the system proceeds to produce a response. Otherwise, the user can rephrase the original question, perhaps adding additional information to remove ambiguity, or the system can ask one or more questions to attempt to resolve the ambiguity.

[79] Once the context for the question or command has been determined, the parser 118 can invoke the correct agent 156, 150. To formulate a question or command in the regular grammar used by agents, the parser 118 may determine required and optional values for the criteria or parameters. These criteria may have been explicitly supplied by the user or may need to be inferred. The parser 118 makes use of the criteria handlers 152 supplied by the system agent 150. The criteria handlers 152 provide context sensitive procedures for extracting the criteria or parameters from the user's question or command. Some criteria are determined by executing algorithms in the agent, while others may be determined by applying probabilistic or fuzzy reasoning to tables of possible values. Prior probabilities or fuzzy possibilities and associated values are received from a number of sources including the history of the dialog, the user profile 110, and the agent. Based on user responses, the prior probabilities or fuzzy possibilities are updated as the system learns the desired behavior. For a weather context, examples of criteria include, location, date and time. Other criteria can include command criteria (i.e., yes/no, on/off,

pause, stop), and spelling. Special criteria handlers are available from the system agent for processing lists, tables, barge-in commands, long strings of text and system commands.

[80] The criteria handlers **152** operate iteratively or recursively on the criteria extracted to eliminate ambiguity. This processing helps reduce the ambiguity in the user's question or command. For example, if the user has a place name (or other proper noun) in their utterance the parser **118** can use services of the domain agent **156** to look up tables in the databases **102** for place names or can attempt to determine which word is the proper noun from the syntax of the utterance. In another example, the user asks "what about flight one hundred and twenty too?". The parser and domain agent use flight information in the database and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, and the like.

[81] Once the context and the criteria are determined, the parser **118** may form the question or command in a standard format or hierarchical data structure used for processing by the agents **150, 156**. The parser 118 may fill in all required and some optional tokens for the grammar of the context. Often the tokens must be transformed to values and forms acceptable to the agents. The parser obtains the required transformations from the agents, dialog history or user profile **110**. Examples of transformations or substitutions performed by the parser on tokens include:

- substituting a stock symbol for a company name or abbreviation;
- substituting a numerical value for a word or words;
- adding a zip code to an address; and

- changing a place or other name to a commonly used standard abbreviation.

[82] The agents **150, 156** may receive a command or question once the parser **118** has placed it in the required standard format. Based on the context, the parser **118** evokes the correct agent to process the question or command.

[83] Commands can be directed to the system **90** or to an external entity. System commands are generally directed to the system agent **150**. Commands for external entities are generally processed by a domain agent **156**, which includes the command context and behavior for the external entity.

[84] Specific questions are generally directed to one of the domain agents **156**. Based on the question or context and the parameters or criteria, the domain agent creates one or more queries to one or more local or external information sources. Questions can be objective or subjective in nature. Results for objective questions can often be obtained by structured queries to one or more local or network information sources. Even for objective questions, the system **90** may need to apply probabilistic or fuzzy set analysis to deal with cases of conflicting information or incomplete information. Information to answer subjective questions is generally obtained by one or more ad-hoc queries to local or network data sources, followed by probabilistic or fuzzy set evaluation of the one results to determine a best answer.

[85] Once the domain agent **156** has formulated the one or more queries, they may be sent to local and/or network information sources. The queries are performed in an asynchronous manner to account for the fact that sources respond at different speeds or may fail to respond at all. Duplicate queries are sent to different information sources to ensure that at least one source responds with a useful result in a timely manner. Further,

if multiple results are received in a timely manner, they can be scored by the system to determine which data is most reliable or appropriate. Examples of data sources accommodated include, HTTP data sources, sources with meta-data in various formats including XML, entertainment audio, video and game files including MP3, databases using query languages and structured responses such as SQL, and other data sources.

[86] The local information sources can be stored in one or more system databases **102** or can be on any local data storage such as a set of CDs or DVDs in a player or other local data storage. Network information sources can be connected to the Internet **136** or other network and accessed through a series of plug-ins or adaptors, known as pluggable sources, in the network interface **116**. The pluggable sources in the network interface **116** may be capable of executing the protocols and interpreting the data formats for the data sources of interest. The pluggable sources may provide information scraping data and procedures for each source to the domain agents **156**. If a new type of data source is to be used, a new plug-in or adaptor can be added to the network interface **116**.

[87] The domain agent **156** evaluates the results of the one or more queries as they arrive. The domain agent **156** scores the relevance of the results based on results already received, the context, the criteria, the history of the dialog, the user profile **110** and domain specific information using probabilistic or fuzzy scoring techniques. Part of the dialog history is maintained in a context stack. The weight of each context for the scoring is based on the relevance of one context to another and the age of the contexts. Other scoring variables can be associated through the context stack. Contexts can also be exclusive, so that previous contexts have no weight in the scoring.

[88] Based on the continuous scoring processes, the domain agent **156** may determine if a single best answer can be extracted. For most questions the desired result has a set of tokens that must be found to formulate an answer. Once a value has been found for each of these tokens the results are ready for presentation to the user. For example, for a question on weather, the tokens can include the date, day of week, predicted high temperature, predicted low temperature, chance of precipitation, expected cloud cover, expected type of precipitation and other tokens. Results processed in this manner include error messages. For subjective questions this determination is made by determining a most likely answer or answers, extracted by matching of the results received. If no satisfactory answer can be inferred from the results of the query the agent can do one of the following:

1. Ask the user for more information, typically through the speech interface, and based on the results obtained formulate new queries. This approach is applied when an irresolvable ambiguity arises in the formulation of a response.
2. Formulate new queries based on the results received from the first set of queries. This approach is typically applied in cases where the responses received do not contain all the required information. Information sources to query can be inferred from the results already obtained (i.e., links in an HTML document) or from other sources. Using this approach one or more sets of queries and responses can be chained without the need for action by the user.
3. Wait for additional queries to return results.

[89] In any case, the domain agent **156** may continue to make queries and evaluate results until a satisfactory response is constructed. In doing so, the agent can start several

overlapping query paths or threads of inquiry, typically mediated by the event manager **100**. This technique, combined with the use of asynchronous queries from multiple data sources provides the real-time response performance required for a natural interaction with the user.

[90] The domain agent **156** may apply conditional scraping operations to each query response as it is received. The conditional scraping actions depend on the context, the criteria, user profile **110**, and domain agent coding and data. For each token to be extracted, a scraping criteria **152** may be created using the services of the system agent **150**. The scraping criteria use format specific scraping methods including, tables, lists, text, and other scraping methods. One or more scraping criteria can be applied to a page or results set. Once additional results are received, the domain agent **156** can create new scraping criteria to apply to results already acquired. The conditional scraping process removes extraneous information, such as graphics, which need not be further processed or stored, improving system performance.

[91] The domain agent **156** may strongly influence how the results are presented. For instance, once the domain agent **156** has created a satisfactory response to a question, the agent **156** may format that response for presentation. Typically, the domain agent **156** formats the response into the markup format used by the text to speech engine **124**. The domain agent **156** may also format the result presentation using available format templates and based on the context, the criteria, and the user profile **110**. Variable substitutions and transformations may be performed by the agent **156** to produce a response best understood and most natural to the user. Further, the order of presentation of tokens and the exact terminology used to create a more natural response to the user

may be varied by the agent **156**. The domain agent **156** may also select the presentation personality **108** to be used.

[92] The domain agent **156**, may select the presentation template, determine order of presentation for tokens and determine variable substitutions and transformations using probabilistic or fuzzy set decision methods. The template used to form the presentation can be from the domain agent itself or from the user profile **110**. The user profile **110** can completely specify the presentation format or can be used to select and then modify an existing presentation format. Selection and formatting of presentation template can also depend on the presentation personality modules **108**. At the same time, the characteristics of the personality used for the response are dynamically determined using probabilities or fuzzy possibilities derived from the context, the criteria, the domain agent itself and the user profile **110**.

[93] The domain agent **156** may apply a number of transformations to the tokens before presentation to the user. These variable substitutions and transformations are derived from a number of sources including, domain information carried by the agent, the context, the token values, the criteria, the personality module **108** to be used, and the user profile **110**. Examples of variable substitutions and transformations include:

- substitution of words for numbers;
- substitution of names for acronyms or symbols (i.e., trading symbols);
- use of formatting information derived from the information sources (i.e., HTML tags);
- nature of the response including, text, long text, list, table;
- possible missing information or errors;

- units for measurement (i.e., English or metric); and
- preferred terminology from the user profile 110 or presentation personality

**108.**

[94] The system **90**, according to another embodiment of the invention, may provide special purpose presentation capabilities for long text strings, tables, lists and other large results sets. Domain agents **156** may use special formatting templates for such results. The system agent **150** may provide special criteria handlers **152** for presentation and user commands for large results sets. The presentation templates used by the domain agents **156** for large results sets typically include methods for summarizing the results and then allowing the user to query the result in more detail. For example, initially only short summaries, such as headlines or key numbers, are presented. The user can then query the results set further. The criteria handlers **152** provide users with the capability to browse large results sets. Commands provided by the criteria handlers **152** for large results sets include, stop, pause, skip, rewind, start, and forward.

[95] Some information, in formats such as video, pictures and graphics, may be best presented in a displayed format. The domain agents **156** may apply suitable presentation templates in these cases and present the information through the graphical user interface **114**. The system agent **150** provides special criteria handlers **152** for presentation and user commands for display presentation and control.

[96] **FIG. 3** is a high level process **300** for receiving natural language speech-based queries and/or commands and generating a response according to an embodiment of the invention. The process **300** comprises of individual steps, several of which may be repetitive in order to accommodate partial failures. The process **300** may begin when a

user's utterance is received and processed at **302**. The user utterance may be a query and/or a command and may be of a natural language speech-based form. After receiving the natural language query and/or command, the query and/or command may be processed so that the data is in a more machine understandable format such as in a digital format. Once the utterance has been converted into an understandable format, the utterance may be processed so that at least an approximate meaning of the utterance can be determined at **304**. This may be accomplished by, for example, the use of stored dictionaries, phrases, user profiles, domain agent data, and other data. Based on the approximate meaning of the utterance, one or more correctly formatted queries and/or commands may be generated. A user created query and/or command may require that multiple queries and/or commands may be needed in order to generate the desired response or action. Further, depending upon the context (e.g., who is the user, what is the subject of the query and/or command directed to, at what time or location is the query and/or command being directed to, and other parameters used in defining the query and/or command) in which the query and/or command has been submitted, a specific format for the query and/or command may be required. For instance, each of the domain agents 156 may require that queries and/or commands be formatted in a specific manner. Thus at 306, one or more properly formatted queries and/or commands may be generated. Steps **304** and **306** may be operations which may have to be repeated in order to obtain the correct interpretation of the user utterance and result in the desired response and/or action. Once the properly formatted queries and/or commands are generated, the appropriate action may be taken at **308**. This may require that the properly formatted queries and/or commands be sent to specific domain agent[s], information source[s],

device[s], or other appropriate destination[s] that can fulfill the requirements of the query and/or command. Once the appropriate action[s] have been executed, this event may be recorded to, for example, the user's profile, database and/or one or more agents at **310**. Such data may be useful for future user inquiries and commands. After the action[s] have been performed, a response, if need be, may be generated and forwarded to the user and/or third parties at **312**. In the case of a query for retrieving data, the response would contain the requested information. In the case of a command, the response may be a confirmation that a specific action[s] has been executed. The response may be in the form of a natural language format. The response may also be formatted to reflect a particular personality or tone to the response in order to make the response more "human." The response may be relayed to the user and/or third parties as an audio message and/or a visual message displayed on a user interface.

[97] **FIG. 4A** is a process **400** for receiving natural language speech-based queries and/or commands and generating a response using the system **90** according to another embodiment of the invention. The process **400** may begin when a user's utterance (i.e., user query and/or command) is captured through accurate speech recognition operating in a variety of real-world environments at **402**. Once the utterance is captured, it is parsed and interpreted to determine the query and/or command that is contained in the utterance at **404**. Next, review of the query and/or command and determine the domain of expertise required and the context of the query, invoking the proper resources including, for example, agents at **406**. The original query and/or command submitted by the user will often require that multiple queries and/or commands be generated. For instance, suppose a user is interested in retrieving the value of her stock portfolio. The user may

utter “please get the value of my stock portfolio.” The system **90** may review this request together with stored data such as the user’s profile and determine keywords such as “get the value” and “my stock portfolio.” The system **90** may then generate queries to determine the stocks in the user’s portfolio, the number of shares and the source for current pricing information. These queries may then be sent to one or more agent domains, such as a domain which may access a database containing the user’s profile and a domain which accesses stock pricing sources to determine the answers to these questions. Queries may be sent to these domain agents or sources in order to obtain the desired data. Thus, at **408** formulate one or more queries that are sent to one or more local and/or network data sources and/or send appropriate commands to local or remote devices or the system itself. The queries are then sent to the designated agent[s]. The agents may then, in turn, generate their own queries and/or commands to be sent to, for example, local or remote information sources to retrieve needed data. The agent generated queries and/or commands may be formatted according to the requirements of the target sources and variable substitutions and transformations are performed to modify the queries to a form most likely to yield desired results from the available sources at **410**. Once the queries are formatted correctly, they may be executed in an asynchronous manner and dealing gracefully with failures at **412**. As a result of the execution of the queries, results may be returned by the domain agents and/or sources. The system **90** may then extract or scrape the desired information from the one or more results, which may be returned in any one of a number of different formats at **414**. That is, the results sought by a user may be the summary or the results of further processing of information obtained from several sources for example. Next, the results may be evaluated and

interpreted including processing of errors, and gathering and combining them into a single best result judged to be “best” even if the results are ambiguous, incomplete, or conflicting at **416**. Once the best results are determined, perform any required formatting, variable substitutions and transformations to modify the results to a form most easily understood by the user at **418**. Finally, the compound results may be presented through the text to speech engine **124**, to the user in a useful and expected manner at **420**. The process **400** may be performed while accounting for the domain of expertise required, the context in which the question or command is presented, the domain specific information available, the history of the user’s interaction, the user preferences, the information sources or commands that are available, and responses obtained from the sources. At each stage of the process **400**, probabilistic or fuzzy set decision and matching methods may be applied to deal with inconsistent, ambiguous, conflicting and incomplete information or responses. In addition, the use of asynchronous queries that may result in rapid and graceful failure of some queries or commands may allow the system **90** to robustly return results quickly and in a manner that seems natural to the user.

[98] **FIG. 4B** is a process **450** for receiving natural language speech-based commands in order to locally or remotely control functions of the system **90** or for other devices according to another embodiment of the invention. The process **450** may begin when a user’s utterance (i.e., user query and/or command) is captured through accurate speech recognition operating in a variety of real-world environments at **452**. Once the utterance is captured, it is parsed and interpreted to determine the command that is contained in the utterance at **454**. Next, the command is reviewed and the domain determined for the

command and context, invoking the proper resources, including selecting of agents at **456**. The original command submitted by the user will often require that multiple queries and/or commands be generated. For instance, suppose a user is interested in recorded his favorite television program. The user may utter “please record my favorite TV program.” The system **90** may review this request together with stored data such as the user’s profile and determine keywords such as “record” and “my favorite TV program.” The system **90** may then generate queries to determine the name, the channel, and time for the user’s favorite TV program. These queries may then be sent to a domain agent, which may access a database containing the user’s profile and determine the answers to these questions. A command may then be sent to a video recorder ordering the video recorder to record the selected TV program. Thus, at **458** formulate one or more queries that are to be sent to one or more local and/or network data sources and/or send appropriate commands to local or remote devices or the system itself. Next, route the generated commands to the appropriate system[s] and/or external devices at **460**. Once the commands have been executed, results including errors may be received and processed at **462**. The results of the executed commands may be optionally presented to the user at **464**.

[99] Some of the steps depicting in **FIG. 4A** may actually require multiple steps that may also be repetitive. For instance, in step **404**, the user’s utterance is parsed and interpreted in order to determine the meaning of the utterance. The system **90** may make an initial interpretation of the utterance based on the data stored in, for example, the dictionary and phrases module **112**, user profiles **110**, agents **106** and the databases **102**. A real-time scoring system or other techniques may be applied to the interpretation

results in order to generate a domain or a context score. If the confidence level of the domain or context score is not high enough to ensure a reliable response, the system **90** can request that the user verify the question or command is correctly understood. In general, the question may be phrased to indicate the context of the question including all criteria or parameters. If the user confirms that the question is correct, the system **90** may proceed to produce a response. Otherwise, either the user can rephrase the original question, perhaps adding additional information to remove ambiguity, or the system may ask one or more questions to attempt to resolve the ambiguity or other actions may taken.

**FIG. 5** is a process **500** for correctly interpreting a user's utterance according to one embodiment of the invention. The process **500** generally represents steps **402** and **404** of process **400**. Initially the user's utterance is inputted into the system **90** at **502**. The input is then interpreted at **504** using, for example, various sources of stored data such as user profiles, agent data, dictionary and phrases, and other relevant data. The interpretation is then scored using, for instance, a weighted scoring system as described previously at **506**. Once a score is obtained, a determination is made as to whether the confidence level of the interpretation is satisfactory at **508**. In other words, the determination relates to whether the score or confidence level given to the interpretation exceeds a certain value. If the confidence level is determined to be unsatisfactory then a request may be submitted to the user requesting that the user verify the interpretation at **510** and **512**. If the user is unsatisfied with the interpretation, he/she may be asked to rephrase the utterance and/or provide additional information at **514**. Once the user provides the rephrased utterance and/or additional information, the process **500** returns to the beginning at **502**. If, on the other hand, the user is satisfied with the interpretation,

then the process **400** for receiving a natural language speech-based queries and/or commands and generating a response may continue at **516**.

[100] Once the meaning of the utterance has been determined, the appropriate domain agent[s] and the query and/or commands properly formatted for the agent[s] may be determined. Referring to **FIG. 6**, a process **600** is illustrated for determining the proper domain agent[s] to invoke and the proper formatting of queries and/or commands that are to be submitted to the agents **106**, as generally depicted in steps **406-408** of **FIG. 4A** according to one embodiment of the invention. In order to formulate a question or command in the regular grammar used by agents **106**, a determination may be made as to the required and optional values for the criteria or parameters of the queries and/or commands. These criteria may have been explicitly supplied by the user or may need to be inferred. Thus, the properly interpreted query and/or command that is generated by, for example, steps **404** and **454** of **FIGS. 4A** and **4B**, is parsed at **602**. The content of the properly interpreted query and/or command is then analyzed to determine the criteria and/or parameters of the properly interpreted query and/or command at **604**. A context sensitive procedure for extracting the criteria or parameters from the properly interpreted query and/or command may be used. Some criteria are determined by executing algorithms in the agent, while others may be determined by applying probabilistic or fuzzy reasoning to tables of possible values. Prior probabilities or fuzzy possibilities and associated values are received from a number of sources including the history of the dialog, the user profile **110**, and the agent. Based on user responses, the prior probabilities or fuzzy possibilities are updated as the system **90** learns the desired behavior. For a weather context, examples of criteria include, location, date and time.

Other criteria can include command criteria (i.e., yes/no, on/off, pause, stop), and spelling. The process for determining criteria may be iterative or recursive in order to eliminate ambiguity in the user's question or command. For example, if the user has a place name (or other proper noun) in their utterance, tables in the databases **102** may be reviewed for place names or an attempt may be made to determine which word is the proper noun from the syntax of the utterance. In another example, the user asks "what about flight one hundred and twenty too?" In such a situation, flight information in the database and network information along with context may be used to determine the most plausible interpretation among: flight one-hundred and flight twenty also, flight one-hundred and flight twenty-two, flight 122, and the like. Once the parameters and criteria for the query and/or command have been established, the proper agents **106** may be selected at **606**. After selecting the agents **106**, a properly formatted query and/or command that will be submitted to the agents **106** may be determined at **608**. The query and/or command may be in a standard format or may be a hierarchical data structure used for processing by the agent **106**. In order to submit the properly formatted query and/or command to the agent **106**, all of the required and some optional tokens for the grammar of the context may be filled in. Often the tokens must be transformed to values and forms acceptable to the agents. The required transformations may be obtained from the agents, dialog history or user profile **110**. Examples of transformations or substitutions that may be performed were provided above. Once the properly formatted queries and/or commands are generated, the process (e.g., process **400**) may continue at **610**.

**We Claim:**

1. A system responsive to a user generated natural language speech utterance, comprising:
  - an event manager, the event manager coordinating interaction between components of the system;
  - a plurality of domain agents, the domain agents being autonomous executable that receives, processes and responds to at least one of a query or a command; and
  - a parser that determines a domain for the user generated natural language utterance based on the content and context of the user utterance.

**ABSTRACT**

Systems and methods for receiving natural language queries and/or commands and execute the queries and/or commands. The systems and methods overcomes the deficiencies of prior art speech query and response systems through the application of a complete speech-based information query, retrieval, presentation and command environment. This environment makes significant use of context, prior information, domain knowledge, and user specific profile data to achieve a natural environment for one or more users making queries or commands in multiple domains. Through this integrated approach, a complete speech-based natural language query and response environment can be created. The systems and methods creates, stores and uses extensive personal profile information for each user, thereby improving the reliability of determining the context and presenting the expected results for a particular question or command.

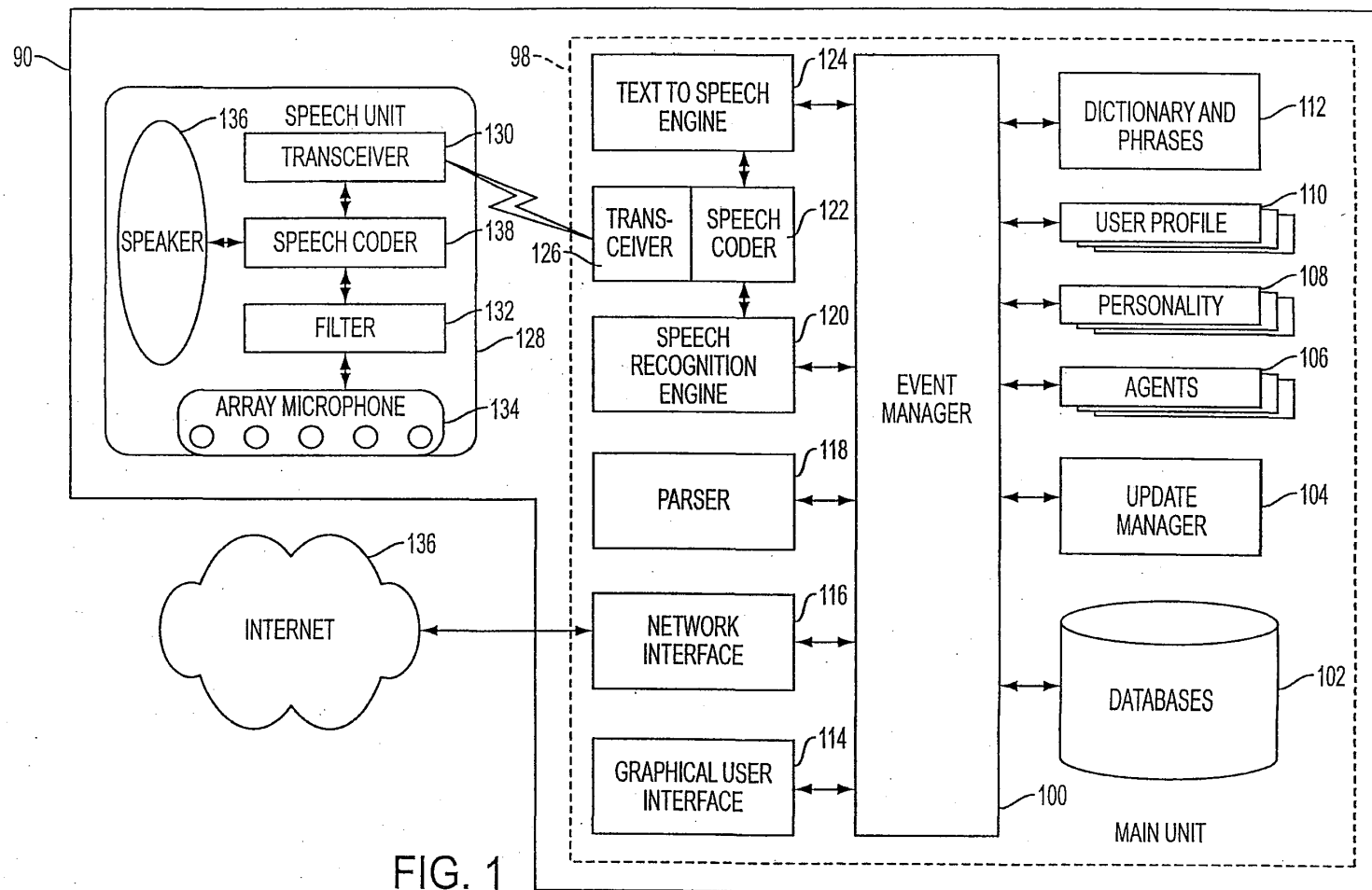


FIG. 1

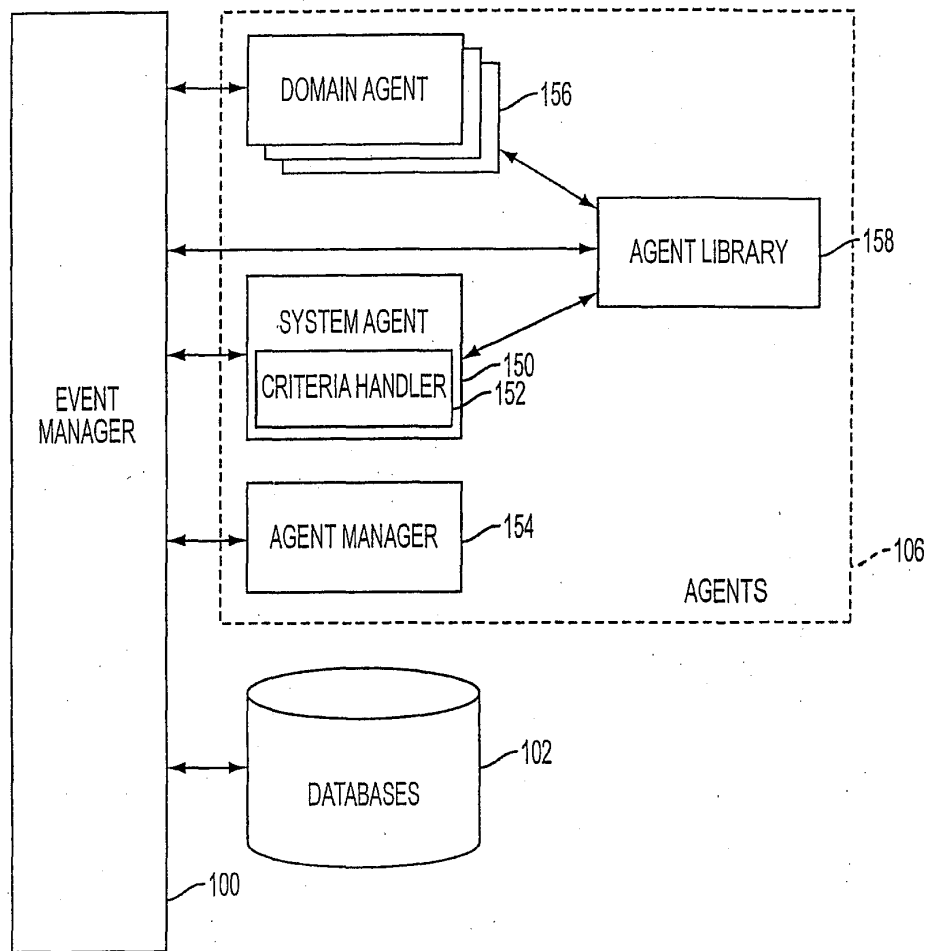


FIG. 2

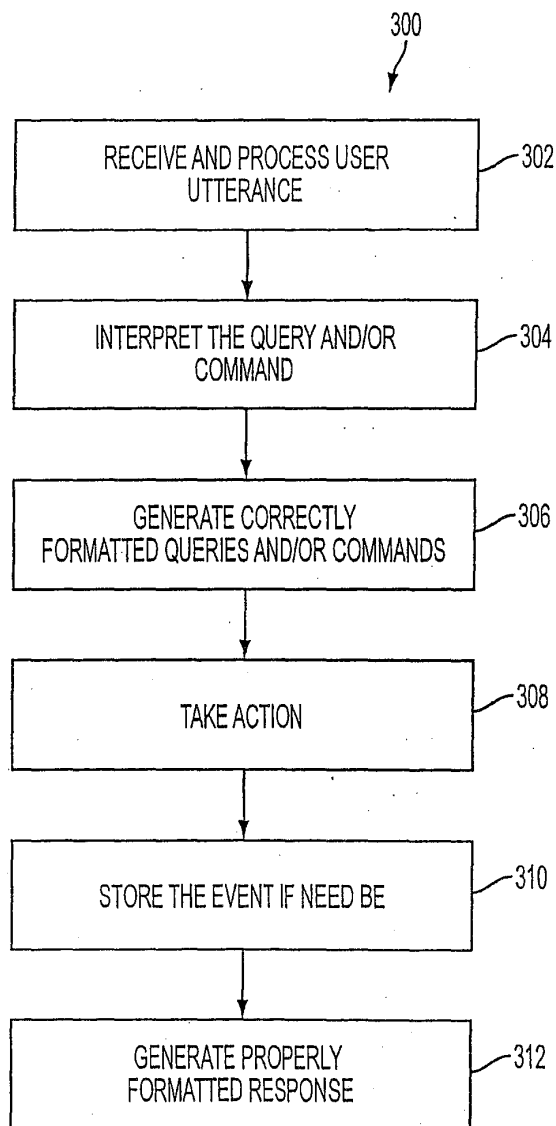


FIG. 3

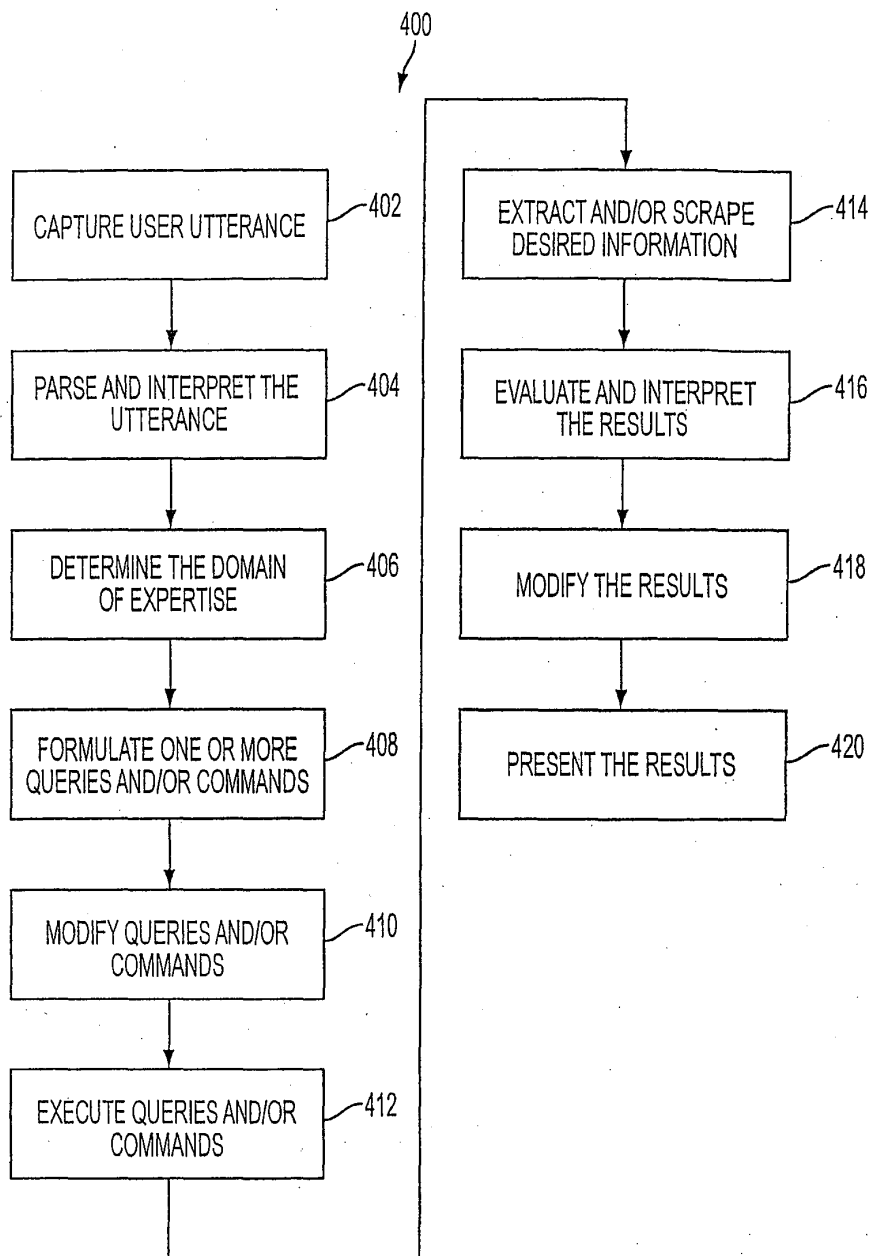


FIG. 4A

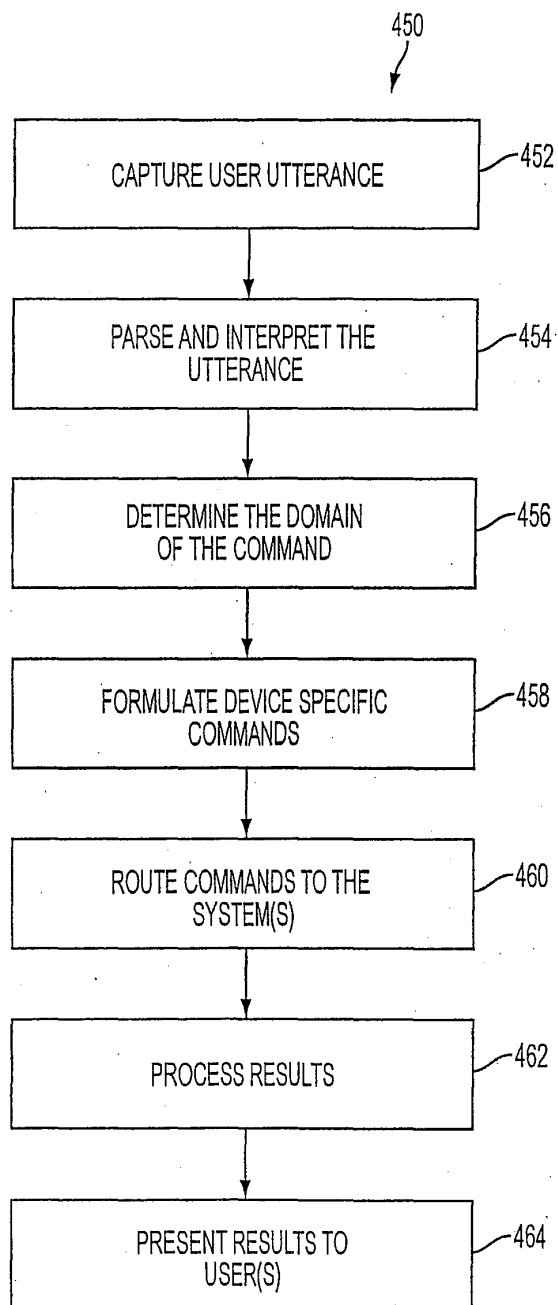


FIG. 4B

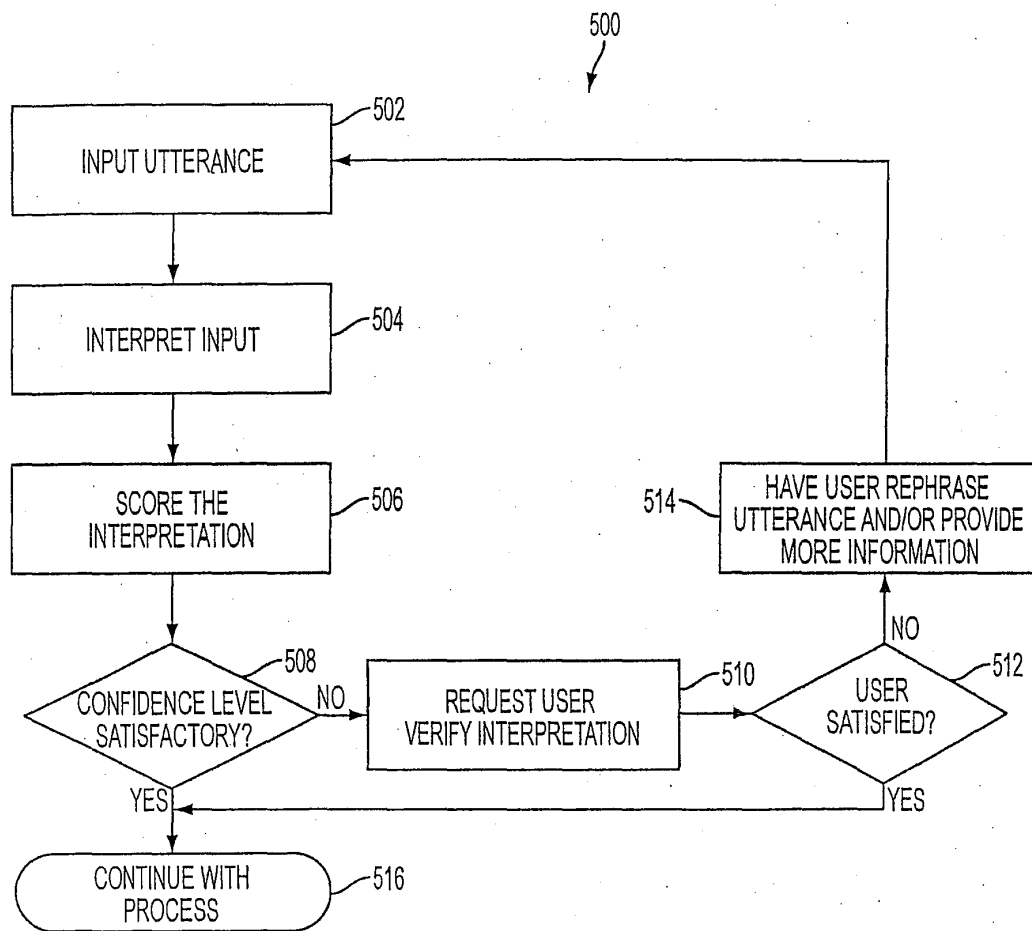


FIG. 5

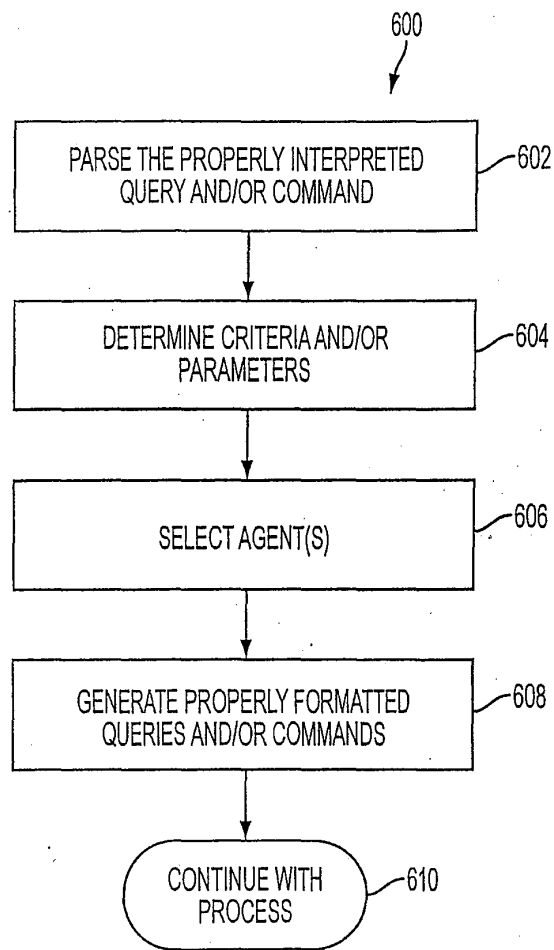


FIG. 6

| Electronic Patent Application Fee Transmittal |          |                                                              |        |                      |
|-----------------------------------------------|----------|--------------------------------------------------------------|--------|----------------------|
| Application Number:                           |          |                                                              |        |                      |
| Filing Date:                                  |          |                                                              |        |                      |
| Title of Invention:                           |          | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |        |                      |
| First Named Inventor/Applicant Name:          |          | Robert A. Kennewick                                          |        |                      |
| Filer:                                        |          | Ngai Bing Zhang/Miriam Nelsen Awan                           |        |                      |
| Attorney Docket Number:                       |          | 090611-0431867                                               |        |                      |
| Filed as Small Entity                         |          |                                                              |        |                      |
| Utility under 35 USC 111(a) Filing Fees       |          |                                                              |        |                      |
| Description                                   | Fee Code | Quantity                                                     | Amount | Sub-Total in USD(\$) |
| <b>Basic Filing:</b>                          |          |                                                              |        |                      |
| Utility filing Fee (Electronic filing)        | 4011     | 1                                                            | 70     | 70                   |
| Utility Search Fee                            | 2111     | 1                                                            | 300    | 300                  |
| Utility Examination Fee                       | 2311     | 1                                                            | 360    | 360                  |
| <b>Pages:</b>                                 |          |                                                              |        |                      |
| <b>Claims:</b>                                |          |                                                              |        |                      |
| <b>Miscellaneous-Filing:</b>                  |          |                                                              |        |                      |
| <b>Petition:</b>                              |          |                                                              |        |                      |
| <b>Patent-Appeals-and-Interference:</b>       |          |                                                              |        |                      |

| Description                              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|------------------------------------------|----------|----------|--------|----------------------|
| <b>Post-Allowance-and-Post-Issuance:</b> |          |          |        |                      |
| <b>Extension-of-Time:</b>                |          |          |        |                      |
| <b>Miscellaneous:</b>                    |          |          |        |                      |
| <b>Total in USD (\$)</b>                 |          |          |        | <b>730</b>           |

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 19041294                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | Robert A. Kennewick                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Ngai Bing Zhang/Miriam Nelsen Awan                           |
| <b>Filer Authorized By:</b>                 | Ngai Bing Zhang                                              |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 15-MAY-2014                                                  |
| <b>Filing Date:</b>                         |                                                              |
| <b>Time Stamp:</b>                          | 15:30:42                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

| Submitted with Payment |                                | no                                    |                                                   |                  |                  |
|------------------------|--------------------------------|---------------------------------------|---------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                                |                                       |                                                   |                  |                  |
| Document Number        | Document Description           | File Name                             | File Size(Bytes)/<br>Message Digest               | Multi Part /.zip | Pages (if appl.) |
| 1                      | Transmittal of New Application | 090611-0431867_UtilityTransmittal.pdf | 32372<br>ee2bf3900595b35ebf8611dd640ef3115ecff735 | no               | 2                |
| <b>Warnings:</b>       |                                |                                       |                                                   |                  |                  |
| <b>Information:</b>    |                                |                                       |                                                   |                  |                  |

|                              |                                                     |                                  |                                                     |     |    |
|------------------------------|-----------------------------------------------------|----------------------------------|-----------------------------------------------------|-----|----|
| 2                            | Application Data Sheet                              | 090611-0431867_ADS.pdf           | 1562105<br>bdf05f73a6d092bbc5e604caa25ea59966659a22 | no  | 8  |
| Warnings:                    |                                                     |                                  |                                                     |     |    |
| Information:                 |                                                     |                                  |                                                     |     |    |
| 3                            |                                                     | 090611-0431867_Specification.pdf | 583802<br>9f0f41d000d255697197c551bc1616bd5d1a347c  | yes | 55 |
|                              | Multipart Description/PDF files in .zip description |                                  |                                                     |     |    |
|                              | Document Description                                |                                  | Start                                               | End |    |
|                              | Specification                                       |                                  | 1                                                   | 53  |    |
|                              | Claims                                              |                                  | 54                                                  | 54  |    |
|                              | Abstract                                            |                                  | 55                                                  | 55  |    |
| Warnings:                    |                                                     |                                  |                                                     |     |    |
| Information:                 |                                                     |                                  |                                                     |     |    |
| 4                            | Drawings-only black and white line drawings         | 090611-0431867_Drawings.pdf      | 1111667<br>094cabb72f58fbc5cb23ae1f0335f8e77fd9bb12 | no  | 7  |
| Warnings:                    |                                                     |                                  |                                                     |     |    |
| Information:                 |                                                     |                                  |                                                     |     |    |
| 5                            | Fee Worksheet (SB06)                                | fee-info.pdf                     | 33356<br>713a6de16cee1e0e8c1b03466347c40e23fab20    | no  | 2  |
| Warnings:                    |                                                     |                                  |                                                     |     |    |
| Information:                 |                                                     |                                  |                                                     |     |    |
| Total Files Size (in bytes): |                                                     |                                  | 3323302                                             |     |    |

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**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

| Electronic Patent Application Fee Transmittal |          |                                                              |        |                      |
|-----------------------------------------------|----------|--------------------------------------------------------------|--------|----------------------|
| Application Number:                           |          | 14278627                                                     |        |                      |
| Filing Date:                                  |          |                                                              |        |                      |
| Title of Invention:                           |          | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |        |                      |
| First Named Inventor/Applicant Name:          |          | ROBERT A. KENNEWICK                                          |        |                      |
| Filer:                                        |          | Ngai Bing Zhang/Miriam Nelsen Awan                           |        |                      |
| Attorney Docket Number:                       |          | 090611-0431867                                               |        |                      |
| Filed as Small Entity                         |          |                                                              |        |                      |
| Utility under 35 USC 111(a) Filing Fees       |          |                                                              |        |                      |
| Description                                   | Fee Code | Quantity                                                     | Amount | Sub-Total in USD(\$) |
| <b>Basic Filing:</b>                          |          |                                                              |        |                      |
| Utility filing Fee (Electronic filing)        | 4011     | 1                                                            | 70     | 70                   |
| Utility Search Fee                            | 2111     | 1                                                            | 300    | 300                  |
| Utility Examination Fee                       | 2311     | 1                                                            | 360    | 360                  |
| <b>Pages:</b>                                 |          |                                                              |        |                      |
| <b>Claims:</b>                                |          |                                                              |        |                      |
| <b>Miscellaneous-Filing:</b>                  |          |                                                              |        |                      |
| <b>Petition:</b>                              |          |                                                              |        |                      |
| <b>Patent-Appeals-and-Interference:</b>       |          |                                                              |        |                      |

| Description                              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|------------------------------------------|----------|----------|--------|----------------------|
| <b>Post-Allowance-and-Post-Issuance:</b> |          |          |        |                      |
| <b>Extension-of-Time:</b>                |          |          |        |                      |
| <b>Miscellaneous:</b>                    |          |          |        |                      |
| <b>Total in USD (\$)</b>                 |          |          |        | <b>730</b>           |

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 19041764                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Ngai Bing Zhang/Miriam Nelsen Awan                           |
| <b>Filer Authorized By:</b>                 | Ngai Bing Zhang                                              |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 15-MAY-2014                                                  |
| <b>Filing Date:</b>                         |                                                              |
| <b>Time Stamp:</b>                          | 15:48:09                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

|                                                                                                                                                                                                                                                                                                                                                                                          |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Submitted with Payment                                                                                                                                                                                                                                                                                                                                                                   | yes             |
| Payment Type                                                                                                                                                                                                                                                                                                                                                                             | Deposit Account |
| Payment was successfully received in RAM                                                                                                                                                                                                                                                                                                                                                 | \$730           |
| RAM confirmation Number                                                                                                                                                                                                                                                                                                                                                                  | 2301            |
| Deposit Account                                                                                                                                                                                                                                                                                                                                                                          | 033975          |
| Authorized User                                                                                                                                                                                                                                                                                                                                                                          |                 |
| <p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)</p> |                 |

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Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

# File Listing:

| Document Number | Document Description | File Name    | File Size(Bytes)/ Message Digest                   | Multi Part /.zip | Pages (if appl.) |
|-----------------|----------------------|--------------|----------------------------------------------------|------------------|------------------|
| 1               | Fee Worksheet (SB06) | fee-info.pdf | 33410<br>98669f46ca1cc68dbae4498b9628c79f0d288d8de | no               | 2                |

## Warnings:

## Information:

|                              |       |
|------------------------------|-------|
| Total Files Size (in bytes): | 33410 |
|------------------------------|-------|

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### New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

### National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

### New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Document code: WFEE

United States Patent and Trademark Office  
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|        |      |           |                         |        |          |
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| ASAHLE | SALE | #00000025 | Mailroom Dt: 05/15/2014 | 033975 | 14278627 |
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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102

**NOTICE**



Date Mailed: 05/30/2014

**INFORMATIONAL NOTICE TO APPLICANT**

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):  
ROBERT A. KENNEWICK  
DAVID LOCKE  
MICHAEL R. KENNEWICK Sr.  
MICHAEL R. KENNEWICK Jr.  
RICHARD KENNEWICK  
TOM FREEMAN

| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                               |                                    |               |                 |                    | Application or Docket Number<br><b>14/278,627</b> |          |                               |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------|-----------------|--------------------|---------------------------------------------------|----------|-------------------------------|--|
| <b>APPLICATION AS FILED - PART I</b>                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                               |                                    |               |                 |                    |                                                   |          |                               |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                               | (Column 2)                         |               | SMALL ENTITY    |                    | OR<br>OTHER THAN SMALL ENTITY                     |          |                               |  |
| FOR                                                                                                                                                                                                                                                                                                                                                                                                        | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA                       | RATE(\$)      | FEE(\$)         |                    | RATE(\$)                                          | FEE(\$)  |                               |  |
| BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))                                                                                                                                                                                                                                                                                                                                                                 | N/A                                                                                                                                                                                                                           | N/A                                | N/A           | 70              |                    | N/A                                               |          |                               |  |
| SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m))                                                                                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                                           | N/A                                | N/A           | 300             |                    | N/A                                               |          |                               |  |
| EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))                                                                                                                                                                                                                                                                                                                                                           | N/A                                                                                                                                                                                                                           | N/A                                | N/A           | 360             |                    | N/A                                               |          |                               |  |
| TOTAL CLAIMS<br>(37 CFR 1.16(i))                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                                                                                                                                                                             | minus 20 = *                       | x 40 =        | 0.00            | OR                 |                                                   |          |                               |  |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                                                                                                             | minus 3 = *                        | x 210 =       | 0.00            |                    |                                                   |          |                               |  |
| APPLICATION SIZE FEE<br>(37 CFR 1.16(s))                                                                                                                                                                                                                                                                                                                                                                   | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |                                    |               | 0.00            |                    |                                                   |          |                               |  |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                               |                                    |               | 0.00            |                    |                                                   |          |                               |  |
| * If the difference in column 1 is less than zero, enter "0" in column 2.                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                               |                                    |               | TOTAL           |                    | TOTAL                                             |          |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                               |                                    |               | 730             |                    |                                                   |          |                               |  |
| <b>APPLICATION AS AMENDED - PART II</b>                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               |                                    |               |                 |                    |                                                   |          |                               |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                               | (Column 2)                         |               | (Column 3)      |                    | SMALL ENTITY                                      |          | OR<br>OTHER THAN SMALL ENTITY |  |
| AMENDMENT A                                                                                                                                                                                                                                                                                                                                                                                                | CLAIMS REMAINING AFTER AMENDMENT                                                                                                                                                                                              | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE(\$)        | ADDITIONAL FEE(\$) |                                                   | RATE(\$) | ADDITIONAL FEE(\$)            |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Total<br>(37 CFR 1.16(i))                                                                                                                                                                                                     | *                                  | Minus **      | =               | x =                |                                                   | x =      |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Independent<br>(37 CFR 1.16(h))                                                                                                                                                                                               | *                                  | Minus ***     | =               | x =                |                                                   | x =      |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Application Size Fee (37 CFR 1.16(s))                                                                                                                                                                                         |                                    |               |                 |                    |                                                   |          |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))                                                                                                                                                               |                                    |               |                 |                    |                                                   |          |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                               |                                    |               | TOTAL ADD'L FEE |                    | TOTAL ADD'L FEE                                   |          |                               |  |
| AMENDMENT B                                                                                                                                                                                                                                                                                                                                                                                                | CLAIMS REMAINING AFTER AMENDMENT                                                                                                                                                                                              | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE(\$)        | ADDITIONAL FEE(\$) |                                                   | RATE(\$) | ADDITIONAL FEE(\$)            |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Total<br>(37 CFR 1.16(i))                                                                                                                                                                                                     | *                                  | Minus **      | =               | x =                |                                                   | x =      |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Independent<br>(37 CFR 1.16(h))                                                                                                                                                                                               | *                                  | Minus ***     | =               | x =                |                                                   | x =      |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Application Size Fee (37 CFR 1.16(s))                                                                                                                                                                                         |                                    |               |                 |                    |                                                   |          |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))                                                                                                                                                               |                                    |               |                 |                    |                                                   |          |                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                               |                                    |               | TOTAL ADD'L FEE |                    | TOTAL ADD'L FEE                                   |          |                               |  |
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.<br>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".<br>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".<br>The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1. |                                                                                                                                                                                                                               |                                    |               |                 |                    |                                                   |          |                               |  |



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| APPLICATION<br>NUMBER | FILING or<br>371(c) DATE | GRP ART<br>UNIT | FIL FEE REC'D | ATTY. DOCKET NO. | TOT CLAIMS | IND CLAIMS |
|-----------------------|--------------------------|-----------------|---------------|------------------|------------|------------|
| 14/278,627            | 05/15/2014               | 2658            | 800           | 090611-0431867   | 1          | 1          |

CONFIRMATION NO. 7986

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102

FILING RECEIPT



0C00000068685487

Date Mailed: 05/30/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

ROBERT A. KENNEWICK, BELLEVUE, WA;  
DAVID LOCKE, REDMOND, WA;  
MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;  
MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;  
RICHARD KENNEWICK, WOODINVILLE, WA;  
TOM FREEMAN, MERCER ISLAND, WA;

**Applicant(s)**

VOICEBOX TECHNOLOGIES CORPORATION, BELLEVUE, WA

**Assignment For Published Patent Application**

VOICEBOX TECHNOLOGIES CORPORATION, BELLEVUE, WA

**Power of Attorney:** None

**Domestic Priority data as claimed by applicant**

This application is a CON of 12/365,516 02/04/2009 PAT 8731929  
which is a CON of 11/747,547 05/11/2007 PAT 7502738  
which is a DIV of 10/452,147 06/03/2003 PAT 7398209  
which claims benefit of 60/384,388 06/03/2002

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

**If Required, Foreign Filing License Granted:** 05/28/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/278,627**

**Projected Publication Date:** 09/04/2014

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

**Preliminary Class**

704

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

page 2 of 4

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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**Title 37, Code of Federal Regulations, 5.11 & 5.15**

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

---

***SelectUSA***

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

Attorney Docket: 090611-0431867

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTORS : ROBERT A. KENNEWICK, ET AL.      CONFIRMATION NO. : 7986  
SERIAL NUMBER : 14/278,627      GROUP ART UNIT: 2657  
FILING DATE : MAY 15, 2014  
FOR : AGENT ARCHITECTURE FOR DETERMINING MEANINGS OF NATURAL LANGUAGE UTTERANCES

RESPONSE TO INFORMATIONAL NOTICE

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Informational Notice dated May 30, 2014 (copy attached), please find attached the following items:

- Oath/Declaration executed by inventors Robert A. KENNEWICK; David LOCKE; Michael R. KENNEWICK, Sr.; Michael R. KENNEWICK, Jr.; Richard KENNEWICK; and Tom FREEMAN.

It is believed that no fees are due in connection with the submission of this paper. However, if it is determined that fees are due, the Commissioner is hereby authorized to charge any fees which may be required to Deposit Account No. 033975 (ref. 090611-0431867).

Date: July 22, 2014

Respectfully submitted,

/NGAI B. ZHANG/

By:

\_\_\_\_\_  
Ngai B. Zhang  
Reg. No. 65,473

PILLSBURY WINTHROP SHAW PITTMAN LLP  
P.O. Box 10500  
McLean, Virginia 22102  
Main: 703-770-7900  
Direct: 703-770-7532  
Fax: 703-770-7901  
E-mail: ngai.zhang@pillsburylaw.com



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

CONFIRMATION NO. 7986

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102

NOTICE



000000006685488

Date Mailed: 05/30/2014

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):  
ROBERT A. KENNEWICK  
DAVID LOCKE  
MICHAEL R. KENNEWICK Sr.  
MICHAEL R. KENNEWICK Jr.  
RICHARD KENNEWICK  
TOM FREEMAN

**DECLARATION (37 C.F.R. 1.63) FOR UTILITY PATENT APPLICATION USING AN  
APPLICATION DATA SHEET (37 C.F.R. 1.76)**

Title of Invention: SYSTEM AND METHOD FOR PROCESSING NATURAL  
LANGUAGE UTTERANCES

As a below named inventor, I hereby declare that:

This declaration is directed to U.S. Patent Application Serial No. 14/278,627, filed May 15, 2014.

The above-identified application was made or authorized to be made by me.

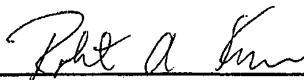
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR Section 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

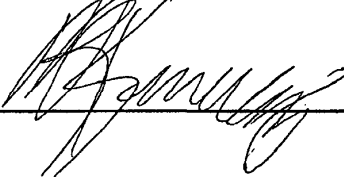
(1) Legal Name of Inventor: **ROBERT A. KENNEWICK**

Signature:  Date: 5/22/14

(2) Legal Name of Inventor: **DAVID LOCKE**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(3) Legal Name of Inventor: **MICHAEL R. KENNEWICK, SR**

Signature:  Date: 5/22/14

[AN ADDITIONAL SIGNATURE PAGE FOLLOWS]

**DECLARATION (37 C.F.R. 1.63) FOR UTILITY PATENT APPLICATION USING AN  
APPLICATION DATA SHEET (37 C.F.R. 1.76)**

Title of Invention:      SYSTEM AND METHOD FOR PROCESSING NATURAL  
LANGUAGE UTTERANCES

As a below named inventor, I hereby declare that:

This declaration is directed to U.S. Patent Application Serial No. 14/278,627, filed May 15, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

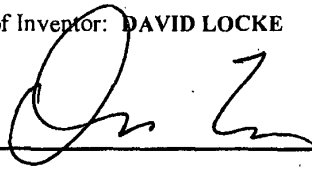
I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR Section 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

(1) Legal Name of Inventor: **ROBERT A. KENNEWICK**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(2) Legal Name of Inventor: **DAVID LOCKE**

Signature:  \_\_\_\_\_ Date: 6-25-14

(3) Legal Name of Inventor: **MICHAEL R. KENNEWICK, SR**

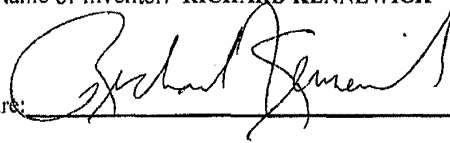
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**[AN ADDITIONAL SIGNATURE PAGE FOLLOWS]**

(4) Legal Name of Inventor: **MICHAEL R. KENNEWICK, JR**

Signature:  Date: 5/22/14

(5) Legal Name of Inventor: **RICHARD KENNEWICK**

Signature:  Date: 5/22/14

(6) Legal Name of Inventor: **TOM FREEMAN**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

ATTORNEY DOCKET NUMBER: 090611-0431867

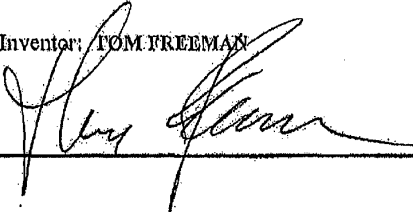
(4) Legal Name of Inventor: MICHAEL R. KENNEWICK, JR

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(5) Legal Name of Inventor: RICHARD KENNEWICK

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(6) Legal Name of Inventor: TOM FREEMAN

Signature:  \_\_\_\_\_ Date: 5/22/2014

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 19651188                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Ngai Bing Zhang/Miriam Nelsen Awan                           |
| <b>Filer Authorized By:</b>                 | Ngai Bing Zhang                                              |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 22-JUL-2014                                                  |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                  |
| <b>Time Stamp:</b>                          | 17:15:42                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

| Submitted with Payment |                      | no                                                 |                                                       |                  |                  |
|------------------------|----------------------|----------------------------------------------------|-------------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                      |                                                    |                                                       |                  |                  |
| Document Number        | Document Description | File Name                                          | File Size(Bytes)/<br>Message Digest                   | Multi Part /.zip | Pages (if appl.) |
| 1                      |                      | 090611-0431867_ResponseInfor<br>mationalNotice.pdf | 72265<br>1f2c579bfea3190f2c87c7ab3f3e24464c239<br>704 | yes              | 6                |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Multipart Description/PDF files in .zip description |       |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Document Description                                | Start | End |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Applicant Response to Pre-Exam Formalities Notice   | 1     | 2   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Oath or Declaration filed                           | 3     | 6   |
| Warnings:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                     |       |     |
| Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     |       |     |
| Total Files Size (in bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     | 72265 |     |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u><br/>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u><br/>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u><br/>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                     |       |     |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒

Practitioners associated with Customer Number:

00909

OR

☐

Practitioner(s) named below (If more than ten patent practitioners are to be named, then a customer number must be used):

| Name | Registration Number |
|------|---------------------|
|      |                     |
|      |                     |
|      |                     |
|      |                     |
|      |                     |

| Name | Registration Number |
|------|---------------------|
|      |                     |
|      |                     |
|      |                     |
|      |                     |
|      |                     |

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒

The address associated with Customer Number:

00909

OR

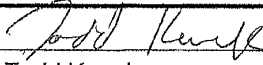
|                          |                         |       |     |  |
|--------------------------|-------------------------|-------|-----|--|
| <input type="checkbox"/> | Firm or Individual Name |       |     |  |
|                          | Address                 |       |     |  |
|                          | City                    | State | Zip |  |
|                          | Country                 |       |     |  |
|                          | Telephone               | Email |     |  |

Assignee Name and Address: VoiceBox Technologies Corporation  
11980 NE 24th Street, Suite 100  
Bellevue, Washington 98005

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/98 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

### SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

|           |                                                                                     |           |              |
|-----------|-------------------------------------------------------------------------------------|-----------|--------------|
| Signature |  | Date      | 5/13/14      |
| Name      | Todd Kenck                                                                          | Telephone | 425.968.7907 |
| Title     | Chief Financial Officer of VoiceBox Technologies Corporation                        |           |              |

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 19795126                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Ngai Bing Zhang/Monet Noel                                   |
| <b>Filer Authorized By:</b>                 | Ngai Bing Zhang                                              |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 06-AUG-2014                                                  |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                  |
| <b>Time Stamp:</b>                          | 17:32:22                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

| Submitted with Payment |                      | no             |                                           |                  |                  |
|------------------------|----------------------|----------------|-------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                      |                |                                           |                  |                  |
| Document Number        | Document Description | File Name      | File Size(Bytes)/<br>Message Digest       | Multi Part /.zip | Pages (if appl.) |
| 1                      |                      | 0431867POA.PDF | 219844                                    | yes              | 4                |
|                        |                      |                | 334308ca5cf236aa7b706b88beb7dde4a1530a23c |                  |                  |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------|-----|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Transmittal Letter                                  | 1      | 1   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Assignee showing of ownership per 37 CFR 3.73.      | 2      | 3   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Power of Attorney                                   | 4      | 4   |
| Warnings:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                     |        |     |
| Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                     |        |     |
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| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                     |        |     |

Attorney Docket: 090611-0431867

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re PATENT APPLICATION of: VOICEBOX TECHNOLOGIES CORPORATION

Application No.: 14/278,627

Confirmation No: 7986

Filed: May 15, 2014

Examiner: HUDSPETH, DAVID R.

Title: SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

**SUBMISSION OF POWER OF ATTORNEY AND STATEMENT UNDER 37 C.F.R. §3.73(c)**

**Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

Commissioner:

Applicant submits herewith the following for the above-captioned application:

- **Power of Attorney**
- **Assignee Statement under 37 C.F.R. §3.73(c)**

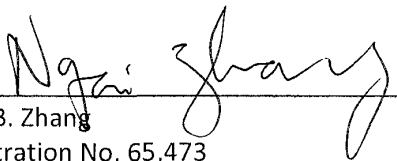
It is believed that no fees are due in connection with the filing of these documents. In the event that it is determined that fees are due, however, the Director is hereby authorized to charge the undersigned's Deposit Account No. 033975 (Ref. No. 090611-0431867).

Respectfully submitted,

Customer No.: 00909

PILLSBURY WINTHROP SHAW PITTMAN LLP

By

  
\_\_\_\_\_  
Ngai B. Zhang  
Registration No. 65,473  
Telephone: (703) 770-7532

Date: August 6, 2014  
P.O. Box 10500  
McLean, VA 22102

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: VoiceBox Technologies Corporation

Application No./Patent No.: 14/278,627 Filed/Issue Date: May 15, 2014

Titled: SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

VoiceBox Technologies Corporation, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_, Frame \_\_\_\_, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: INVENTORS To: VOICEBOX TECHNOLOGIES, INC.

The document was recorded in the United States Patent and Trademark Office at  
Reel 022412, Frame 0036, or for which a copy thereof is attached.

2. From: VOICEBOX TECHNOLOGIES, INC. To: VOICEBOX TECHNOLOGIES CORPORATION

The document was recorded in the United States Patent and Trademark Office at  
Reel 032621, Frame 0087, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on

**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a COPY thereof is attached.

4. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a COPY thereof is attached.

5. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a COPY thereof is attached.

6. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a COPY thereof is attached.

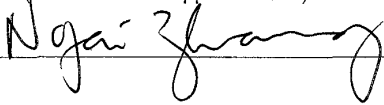
☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature



August 6, 2014

Date

Ngai B. Zhang

Printed or Typed Name

65743

Title or Registration Number

[Page 2 of 2]



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

**POA ACCEPTANCE LETTER**

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102



Date Mailed: 08/12/2014

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 08/06/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/Itaba/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
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Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

**PUBLICATION NOTICE**

909  
Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102



**Title:**SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

**Publication No.**US-2014-0249821-A1

**Publication Date:**09/04/2014

**NOTICE OF PUBLICATION OF APPLICATION**

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

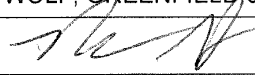
In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at [www.uspto.gov](http://www.uspto.gov) using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

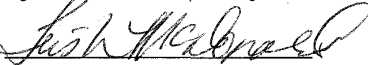
Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

|                                                                                                    |                      |                        |                 |
|----------------------------------------------------------------------------------------------------|----------------------|------------------------|-----------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br><i>(to be used for all correspondence after initial filing)</i> | Application Number   | 14/278,627-Conf. #7986 |                 |
|                                                                                                    | Filing Date          | May 15, 2014           |                 |
|                                                                                                    | First Named Inventor | Robert A. Kennewick    |                 |
|                                                                                                    | Art Unit             | 2658                   |                 |
|                                                                                                    | Examiner Name        | R. Dorvil              |                 |
| Total Number of Pages in This Submission                                                           | 4                    | Attorney Docket Number | N0484.71158US09 |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Fee Transmittal Form<br><br><input type="checkbox"/> Fee Attached<br><br><input type="checkbox"/> Amendment/Reply<br><br><input type="checkbox"/> After Final<br><br><input type="checkbox"/> Affidavits/declaration(s)<br><br><input type="checkbox"/> Extension of Time Request<br><br><input type="checkbox"/> Express Abandonment Request<br><br><input type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><br><input type="checkbox"/> Reply to Missing Parts/<br>Incomplete Application<br><br><input type="checkbox"/> Reply to Missing Parts<br>under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><br><input type="checkbox"/> Petition to Convert to a<br>Provisional Application<br><br><input checked="" type="checkbox"/> Power of Attorney, Revocation<br>Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) _____<br><br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication<br>to TC<br><br><input type="checkbox"/> Appeal Communication to Board<br>of Appeals and Interferences<br><br><input type="checkbox"/> Appeal Communication to TC<br>(Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><br><input checked="" type="checkbox"/> Other Enclosure(s) (please<br>Identify below):<br><br>Statement Under 37 CFR 3.73(c) |
| <div>Remarks</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                                                                     |          |        |
|--------------------------------------------|-------------------------------------------------------------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C.                                                      |          |        |
| Signature                                  |  |          |        |
| Printed name                               | Richard F. Giunta                                                                   |          |        |
| Date                                       | March 18, 2015                                                                      | Reg. No. | 36,149 |

| Certificate of Electronic Filing Under 37 CFR 1.8                                                                                                                                                     |                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                                                                                 |
| Dated: March 18, 2015                                                                                                                                                                                 | Signature:  |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**Applicant/Patent Owner: Nuance Communications, Inc.Application No./Patent No.: 14/278,627 Filed/Issue Date: May 15, 2014Titled: SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCESNuance Communications, Inc., a Corporation  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_\_ %. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:
1. From: Robert A. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at Reel 033473, Frame 0491, or for which a copy thereof is attached.
2. From: David Locke To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at Reel 033473, Frame 0491, or for which a copy thereof is attached.

[Page 1 of 2]

3970879.1

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**

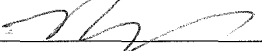
3. From: Michael R. Sr. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
4. From: Michael R. Jr. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
5. From: Richard Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
6. From: Tom Freeman To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.

☒ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature   
Printed or Typed Name Richard F. Giunta

Date March 18, 2015  
Attorney for Assignee  
Title or Registration Number

[Page 2 of 2]

**Certificate of Electronic Filing Under 37 CFR 1.8**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 18, 2015

Signature: 

**STATEMENT UNDER 37 CFR 3.73(c) - Supplemental Sheet**

Page 1 of 1

Continuation of chain of title from the inventor(s) to the current assignee:

7. From: VoiceBox Technologies, Inc. To: VoiceBox Technologies Corporation  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 033473 , Frame 0578 , or for which a copy thereof is attached.
8. From: VoiceBox Technologies Corporation To: Nuance Communications, Inc.  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 034703 , Frame 0429 , or for which a copy thereof is attached.
9. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
10. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
11. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
12. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
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13. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
14. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
15. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.

3970879.1

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 21811807                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Richard F. Giunta/Trish McDonald                             |
| <b>Filer Authorized By:</b>                 | Richard F. Giunta                                            |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 18-MAR-2015                                                  |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                  |
| <b>Time Stamp:</b>                          | 17:20:31                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

| Submitted with Payment |                               | no                             |                                                                   |                  |                  |
|------------------------|-------------------------------|--------------------------------|-------------------------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                               |                                |                                                                   |                  |                  |
| Document Number        | Document Description          | File Name                      | File Size(Bytes)/<br>Message Digest                               | Multi Part /.zip | Pages (if appl.) |
| 1                      | Miscellaneous Incoming Letter | N048471158US09-TRN-RFG.<br>PDF | 130845<br><small>4cc5310173069dd076dc7b48a774bfccb1b93df9</small> | no               | 1                |
| <b>Warnings:</b>       |                               |                                |                                                                   |                  |                  |
| <b>Information:</b>    |                               |                                |                                                                   |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                |                            |                                                     |        |   |
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| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Assignee showing of ownership per 37 CFR 3.73. | N048471158US09-373-RFG.PDF | 353732<br>81d70ff4d87fa80a2025b5bd1d8aaa9c3dc50c7d4 | no     | 3 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                |                            |                                                     |        |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |                            |                                                     |        |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |                            |                                                     | 484577 |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                                                |                            |                                                     |        |   |

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**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with the Customer Number:

91337

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

| Name | Registration Number | Name | Registration Number |
|------|---------------------|------|---------------------|
|      |                     |      |                     |

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒ The address associated with Customer Number:

91337

OR

|                                                  |  |       |     |
|--------------------------------------------------|--|-------|-----|
| <input type="checkbox"/> Firm or Individual Name |  |       |     |
| Address                                          |  |       |     |
| City                                             |  | State | Zip |
| Country                                          |  |       |     |
| Telephone                                        |  | Email |     |

Assignee Name and Address:

Nuance Communications, Inc.  
 One Wayside Road  
 Burlington, Massachusetts 01803

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

|           |                                                                                     |           |              |
|-----------|-------------------------------------------------------------------------------------|-----------|--------------|
| Signature |  | Date      | 11/8/2012    |
| Name      | Leanne J. Fitzgerald, Esq.                                                          | Telephone | 781 565-4792 |
| Title     | Associate General Counsel                                                           |           |              |

| Electronic Acknowledgement Receipt   |                                                              |
|--------------------------------------|--------------------------------------------------------------|
| EFS ID:                              | 21816114                                                     |
| Application Number:                  | 14278627                                                     |
| International Application Number:    |                                                              |
| Confirmation Number:                 | 7986                                                         |
| Title of Invention:                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| First Named Inventor/Applicant Name: | ROBERT A. KENNEWICK                                          |
| Customer Number:                     | 909                                                          |
| Filer:                               | Richard F. Giunta/Jeanne Chub                                |
| Filer Authorized By:                 | Richard F. Giunta                                            |
| Attorney Docket Number:              | 090611-0431867                                               |
| Receipt Date:                        | 19-MAR-2015                                                  |
| Filing Date:                         | 15-MAY-2014                                                  |
| Time Stamp:                          | 10:22:20                                                     |
| Application Type:                    | Utility under 35 USC 111(a)                                  |

### Payment information:

| Submitted with Payment |                      | no                              |                                                   |                  |                  |
|------------------------|----------------------|---------------------------------|---------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                      |                                 |                                                   |                  |                  |
| Document Number        | Document Description | File Name                       | File Size(Bytes)/<br>Message Digest               | Multi Part /.zip | Pages (if appl.) |
| 1                      | Power of Attorney    | N0484-71158US09-POA-RFG.<br>pdf | 50940<br>bf1feb719bbc7be973b4d3551fe2f1a7bac29e29 | no               | 1                |
| <b>Warnings:</b>       |                      |                                 |                                                   |                  |                  |
| <b>Information:</b>    |                      |                                 |                                                   |                  |                  |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

| APPLICATION NUMBER | FILING DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014  | ROBERT A. KENNEWICK   | 090611-0431867         |

CONFIRMATION NO. 7986

909  
 Pillsbury Winthrop Shaw Pittman, LLP (NV)  
 PO Box 10500  
 McLean, VA 22102



Cc: NUANCE COMMUNICATIONS, INC.  
 C/O WOLF, GREENFIELD & SACKS, P.C.  
 600 ATLANTIC AVENUE  
 BOSTON, MA 02210-2206

Date Mailed: 03/25/2015

## DENIAL OF REQUEST FOR POWER OF ATTORNEY

The request for Power of Attorney filed 03/19/2015 is acknowledged. However, the request cannot be granted at this time for the reason stated below.

- ☐ The Power of Attorney you provided did not comply with the new Power of Attorney rules that became effective on June 25, 2004. See 37 CFR 1.32.
- ☐ The revocation is not signed by the applicant, the assignee of the entire interest, or one particular principal attorney having the authority to revoke.
- ☐ The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73 has not been received.
- ☐ The person signing for the assignee has omitted their empowerment to sign on behalf of the assignee.
- ☐ The inventor(s) is without authority to appoint attorneys since the assignee has intervened as provided by 37 CFR 3.71.
- ☐ The signature(s) of \_\_\_\_\_, a co-inventor in this application, has been omitted. The Power of Attorney will be entered upon receipt of confirmation signed by said co-inventor(s).
- ☐ The person(s) appointed in the Power of Attorney is not registered to practice before the U.S. Patent and Trademark Office.
- ☐ Only one Customer Number can be designated for the Power of Attorney in an application. The Customer Number that was captured is the first Customer Number provided on the Power of Attorney document.
- ☐ A request under 37 CFR 1.48 to add an inventor was granted in this application, however, no power of attorney consistent with the power of attorney granted by the originally named inventive entity has been



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received. Thus, the addition of the inventor has resulted in the loss of power of attorney in the application. See 37 CFR 1.32(e).

- ☒ The power of attorney has not been accepted because the party who is giving power of attorney has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A patent owner who was not the applicant must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).
- ☐ The power of attorney from the inventors has not been accepted because it is a copy from a prior national application for which benefit is claimed and the continuing application names an inventor who was not named as an inventor in the prior application.
- ☐ The power of attorney from the inventors has not been accepted because the power of attorney must be signed by the applicant for patent. See 37 CFR 1.32(b)(4).
- ☒ Any request to correct or update the name of the applicant must include an application data sheet (ADS) in compliance with 37 CFR 1.76 specifying the correct or updated name of the applicant in the applicant information section. Any request to change the applicant after an original applicant has been specified under 37 CFR 1.46(b) must include a new ADS in compliance with 37 CFR 1.76 specifying the applicant in the applicant information section and comply with 37 CFR 3.71 and 3.73. See 37 CFR 1.46(c).

Any inquiries regarding this notice should be directed to the Application Assistance Unit at 571-272-4200.

Stephanos  
Application Assistance Unit  
571-272-4200



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United States Patent and Trademark Office  
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www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

**MISCELLANEOUS NOTICE**

909  
Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102



Date Mailed: 03/26/2015

A communication which cannot be delivered in electronic form has been mailed to the applicant.



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 www.uspto.gov

| APPLICATION NUMBER | FILING DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014  | ROBERT A. KENNEWICK   | 090611-0431867         |

CONFIRMATION NO. 7986

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 PO Box 10500  
 McLean, VA 22102



Cc: NUANCE COMMUNICATIONS, INC.  
 C/O WOLF, GREENFIELD & SACKS, P.C.  
 600 ATLANTIC AVENUE  
 BOSTON, MA 02210-2206

Date Mailed: **03/26/2015****DENIAL OF REQUEST FOR POWER OF ATTORNEY**

The request for Power of Attorney filed **03/19/2015** is acknowledged. However, the request cannot be granted at this time for the reason stated below.

- ☐ The Power of Attorney you provided did not comply with the new Power of Attorney rules that became effective on June 25, 2004. See 37 CFR 1.32.
- ☐ The revocation is not signed by the applicant, the assignee of the entire interest, or one particular principal attorney having the authority to revoke.
- ☐ The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(c) has not been received.
- ☐ The person signing for the assignee has omitted their empowerment to sign on behalf of the assignee.
- ☐ The inventor(s) is without authority to appoint attorneys since the assignee has intervened as provided by 37 CFR 3.71.
- ☐ The signature(s) of \_\_\_\_\_, co-inventor(s) in this application, has been omitted. The Power of Attorney will be entered upon receipt of confirmation signed by said co-inventor(s).
- ☐ The person(s) appointed in the Power of Attorney is not registered to practice before the U.S. Patent and Trademark Office.
- ☐ Only one Customer Number can be designated for the Power of Attorney in an application. The Customer Number that was captured is the first Customer Number provided on the Power of Attorney document.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

- ☐ A request under 37 CFR 1.48 to add an inventor was granted in this application, however, no power of attorney consistent with the power of attorney granted by the originally named inventive entity has been received. Thus, the addition of the inventor has resulted in the loss of power of attorney in the application. See 37 CFR 1.32(e).
- ☒ The power of attorney has not been accepted because the party who is giving power of attorney has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A patent owner who was not the applicant must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).
- ☐ The power of attorney from the inventors has not been accepted because it is a copy from a prior national application for which benefit is claimed and the continuing application names an inventor who was not named as an inventor in the prior application.
- ☐ The power of attorney from the inventors has not been accepted because the power of attorney must be signed by the applicant for patent. See 37 CFR 1.32(b)(4).
- ☒ Any request to correct or update the name of the applicant must include an application data sheet (ADS) in compliance with 37 CFR 1.76 specifying the correct or updated name of the applicant in the applicant information section. Any request to change the applicant after an original applicant has been specified under 37 CFR 1.46(b) must include a new ADS in compliance with 37 CFR 1.76 specifying the applicant in the applicant information section and comply with 37 CFR 3.71 and 3.73. See 37 CFR 1.46(c).

Any inquiries regarding this notice should be directed to the Application Assistance Unit at 571-272-4200.

AB  
Application Assistance Unit  
571-272-4200



UNITED STATES PATENT AND TRADEMARK OFFICE

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P.O. Box 1450  
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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102

**MISCELLANEOUS NOTICE**



Date Mailed: 03/27/2015

A communication which cannot be delivered in electronic form has been mailed to the applicant.

## POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with the Customer Number: 91337

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

| Name | Registration Number | Name | Registration Number |
|------|---------------------|------|---------------------|
|      |                     |      |                     |

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒ The address associated with Customer Number: 91337

OR

|                                                  |  |       |     |
|--------------------------------------------------|--|-------|-----|
| <input type="checkbox"/> Firm or Individual Name |  |       |     |
| Address                                          |  |       |     |
| City                                             |  | State | Zip |
| Country                                          |  |       |     |
| Telephone                                        |  | Email |     |

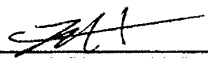
Assignee Name and Address:

Nuance Communications, Inc.  
One Wayside Road  
Burlington, Massachusetts 01803

**A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.**

### SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

|           |                                                                                     |           |              |
|-----------|-------------------------------------------------------------------------------------|-----------|--------------|
| Signature |  | Date      | 11/8/2012    |
| Name      | Leanne J. Fitzgerald, Esq.                                                          | Telephone | 781 565-4792 |
| Title     | Associate General Counsel                                                           |           |              |

**Corrected Application Data Sheet**

**Inventor Information**

Inventor Number:: 1  
Name Prefix:: Mr.  
Given Name:: Robert  
Middle Name:: A.  
Family Name:: Kennewick

Inventor Number:: 2  
Name Prefix:: Mr.  
Given Name:: David  
Family Name:: Locke

Inventor Number:: 3  
Name Prefix:: Mr.  
Given Name:: Michael  
Middle Name:: R.  
Family Name:: Kennewick, Sr.

Inventor Number:: 4  
Name Prefix:: Mr.  
Given Name:: Michael  
Middle Name:: R.

Family Name:: Kennewick, Jr.

Inventor Number:: 5

Name Prefix:: Mr.

Given Name:: Richard

Family Name:: Kennewick

Inventor Number:: 6

Name Prefix:: Mr.

Given Name:: Tom

Family Name:: Freeman

### **Correspondence Information**

Correspondence Customer Number:: ~~00909~~ 91337

### **Application Information**

Application Number:: 14/278,627

Filing Date:: 05/15/14

Application Type:: Regular

Subject Matter:: Utility

CD-ROM or CD-R?: None

Sequence submission?: None

Computer Readable Form (CRF)?:: No

|                                                                                                                                                                                                                                                                 |                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Title::                                                                                                                                                                                                                                                         | SYSTEM AND METHOD FOR<br>PROCESSING NATURAL<br>LANGUAGE UTTERANCES |
| Attorney Docket Number::                                                                                                                                                                                                                                        | <del>090611-0431867</del><br><u>N0484.71158US09</u>                |
| Request for Early Publication?::                                                                                                                                                                                                                                | No                                                                 |
| Request for Non-Publication?::                                                                                                                                                                                                                                  | No                                                                 |
| Small Entity?::                                                                                                                                                                                                                                                 | <del>Yes</del> <u>No</u>                                           |
| Petition included?::                                                                                                                                                                                                                                            | No                                                                 |
| Portions or all of the application associated with<br>this Application Data Sheet may fall under a<br>Secrecy Order pursuant to 37 CFR 5.2::                                                                                                                    | No                                                                 |
| Authorization to Permit Access to the Instant<br>Application by the Participating Offices::                                                                                                                                                                     | No                                                                 |
| This application (1) claims priority to or the benefit<br>of an application filed before March 16, 2013 and<br>(2) also contains, or contained at any time, a claim<br>to a claimed invention that has an effective filing<br>date on or after March 16, 2013:: | No                                                                 |

**Representative Information**

|                                  |                               |
|----------------------------------|-------------------------------|
| Representative Customer Number:: | <del>00909</del> <u>91337</u> |
|----------------------------------|-------------------------------|

### Domestic Priority Information

| Application::    | Continuity Type::                                       | Parent Application:: | Parent Filing Date:: |
|------------------|---------------------------------------------------------|----------------------|----------------------|
| This Application | Continuation of                                         | 12/365516            | 02/04/09             |
| 12/365516        | Continuation of                                         | 11/747547            | 05/11/07             |
| 11/747547        | Division of                                             | 10/452147            | 06/03/03             |
| 10/452147        | An application claiming the benefit under 35 USC 119(e) | 60/384388            | 06/03/02             |

### Applicant Information

Applicant Number:: 1

Applicant Type:: Assignee

Organization Name:: ~~Voicebox Technologies Corporation~~  
Nuance Communications, Inc.

Street of mailing address:: ~~41980 NE 24<sup>th</sup> Street~~  
Suite 100  
One Wayside Road

City of mailing address:: Bellevue  
Burlington

State or Province of mailing address:: WA  
MA

Postal or Zip Code of mailing address:: 98005  
01803

**Assignee Information Including Non-Applicant Assignee Information**

Assignee Number:: 1

Organization Name:: ~~Voicebox Technologies Corporation~~  
Nuance Communications, Inc.

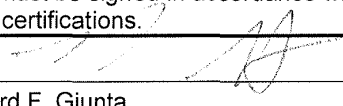
Street of mailing address:: 11980 NE 24<sup>th</sup> Street  
Suite 100  
One Wayside Road

City of mailing address:: Bellevue  
Burlington

State or Province of mailing address:: WA  
MA

Postal or Zip Code of mailing address:: 98005  
01803

**Signature:**

|                                                                                                                              |                                                                                   |                     |                      |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------|----------------------|
| NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. |                                                                                   |                     |                      |
| Signature                                                                                                                    |  | Date                | May <u>11</u> , 2015 |
| Name                                                                                                                         | Richard F. Giunta                                                                 | Registration Number | 36,149               |

## Certificate of Electronic Filing Under 37 C.F.R. § 1.8

I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with 37 C.F.R. § 1.6(a)(4):

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on May 11, 2015  
Date



Signature

*Trish McDonald*

Typed or printed name of person signing Certificate

Registration Number, if applicable

Telephone Number

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

Corrected Application Data Sheet (6 pages)

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 22314190                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 909                                                          |
| <b>Filer:</b>                               | Richard F. Giunta/Trish McDonald                             |
| <b>Filer Authorized By:</b>                 | Richard F. Giunta                                            |
| <b>Attorney Docket Number:</b>              | 090611-0431867                                               |
| <b>Receipt Date:</b>                        | 11-MAY-2015                                                  |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                  |
| <b>Time Stamp:</b>                          | 18:57:28                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

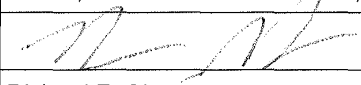
### Payment information:

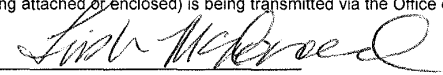
| Submitted with Payment |                               | no                             |                                                   |                  |                  |
|------------------------|-------------------------------|--------------------------------|---------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                               |                                |                                                   |                  |                  |
| Document Number        | Document Description          | File Name                      | File Size(Bytes)/<br>Message Digest               | Multi Part /.zip | Pages (if appl.) |
| 1                      | Miscellaneous Incoming Letter | N048471158US09-TRN-RFG.<br>PDF | 55863<br>e7edfb016e07a68303d93fd12384b4face008b8a | no               | 1                |
| <b>Warnings:</b>       |                               |                                |                                                   |                  |                  |
| <b>Information:</b>    |                               |                                |                                                   |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                             |                                                    |    |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------|----------------------------------------------------|----|---|
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Assignee showing of ownership per 37 CFR 3.73 | N048471158US09-373-RFG.PDF  | 156806<br>64afa4f12d16a41bfcabe4d07cfeffc2e016db51 | no | 3 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                             |                                                    |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                             |                                                    |    |   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Power of Attorney                             | N048471158US09-POA-RFG.PDF  | 58767<br>716c808facbe3990b33b8527da2cc7a87dbce565  | no | 1 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                             |                                                    |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                             |                                                    |    |   |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Application Data Sheet                        | N048471158US09-CADS-RFG.PDF | 127093<br>84890506ce4c8ffad66262c7020b98ce215843f  | no | 7 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                             |                                                    |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                             |                                                    |    |   |
| This is not an USPTO supplied ADS fillable form                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                             |                                                    |    |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                             | 398529                                             |    |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                                               |                             |                                                    |    |   |

|                                                                                                            |                      |                        |                 |
|------------------------------------------------------------------------------------------------------------|----------------------|------------------------|-----------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br><small>(to be used for all correspondence after initial filing)</small> | Application Number   | 14/278,627-Conf. #7986 |                 |
|                                                                                                            | Filing Date          | May 15, 2014           |                 |
|                                                                                                            | First Named Inventor | Robert A. Kennewick    |                 |
|                                                                                                            | Art Unit             | 2658                   |                 |
|                                                                                                            | Examiner Name        | R. Dorvil              |                 |
| Total Number of Pages in This Submission                                                                   | 11                   | Attorney Docket Number | N0484.71158US09 |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Fee Transmittal Form<br><br><input type="checkbox"/> Fee Attached<br><br><input type="checkbox"/> Amendment/Reply<br><br><input type="checkbox"/> After Final<br><br><input type="checkbox"/> Affidavits/declaration(s)<br><br><input type="checkbox"/> Extension of Time Request<br><br><input type="checkbox"/> Express Abandonment Request<br><br><input type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><br><input type="checkbox"/> Reply to Missing Parts/ Incomplete Application<br><br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><br><input checked="" type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) _____<br><br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):<br><br>Statement Under 37 CFR 3.73(c)<br>Corrected Application Data Sheet |
| <div>Remarks</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                                                                     |          |        |
|--------------------------------------------|-------------------------------------------------------------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C.                                                      |          |        |
| Signature                                  |  |          |        |
| Printed name                               | Richard F. Giunta                                                                   |          |        |
| Date                                       | May 11, 2015                                                                        | Reg. No. | 36,149 |

|                                                                                                                                                                                                                                                                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Certificate of Electronic Filing Under 37 CFR 1.8</b><br>I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).<br>Dated: May 11, 2015<br>Signature:  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: Nuance Communications, Inc.

Application No./Patent No.: 14/278,627 Filed/Issue Date: May 15, 2014

Titled: SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

Nuance Communications, Inc., a Corporation  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_\_ %. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Robert A. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473, Frame 0491, or for which a copy thereof is attached.
2. From: David Locke To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473, Frame 0491, or for which a copy thereof is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: Michael R. Sr. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
4. From: Michael R. Jr. Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
5. From: Richard Kennewick To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.
6. From: Tom Freeman To: VoiceBox Technologies, Inc.  
The document was recorded in the United States Patent and Trademark Office at  
Reel 033473 , Frame 0491 , or for which a copy thereof is attached.

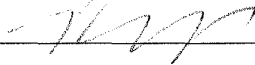
☒ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature



Date

May 11, 2015

Printed or Typed Name

Richard F. Giunta

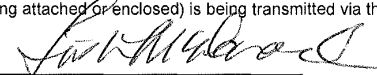
Attorney for Assignee  
Title or Registration Number

[Page 2 of 2]

**Certificate of Electronic Filing Under 37 CFR 1.8**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: May 11, 2015

Signature: 

**STATEMENT UNDER 37 CFR 3.73(c) - Supplemental Sheet**

Page 1 of 1

Continuation of chain of title from the inventor(s) to the current assignee:

7. From: VoiceBox Technologies, Inc. To: VoiceBox Technologies Corporation  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 033473 , Frame 0578 , or for which a copy thereof is attached.
8. From: VoiceBox Technologies Corporation To: Nuance Communications, Inc.  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 034703 , Frame 0429 , or for which a copy thereof is attached.
9. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
10. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
11. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
12. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
13. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
14. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.
15. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_ , Frame \_\_\_\_\_ , or for which a copy thereof is attached.

3970879.1



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United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

**POWER OF ATTORNEY NOTICE**

909

Pillsbury Winthrop Shaw Pittman, LLP (NV)  
PO Box 10500  
McLean, VA 22102



Date Mailed: 05/14/2015

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 05/11/2015.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/



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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 090611-0431867         |

**CONFIRMATION NO. 7986**

**POA ACCEPTANCE LETTER**

91337

Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206



Date Mailed: 05/14/2015

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 05/11/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/sleutchit/



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United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION<br>NUMBER | FILING or<br>371(c) DATE | GRP ART<br>UNIT | FIL FEE REC'D | ATTY. DOCKET NO. | TOT CLAIMS | IND CLAIMS |
|-----------------------|--------------------------|-----------------|---------------|------------------|------------|------------|
| 14/278,627            | 05/15/2014               | 2657            | 800           | 090611-0431867   | 1          | 1          |

**CONFIRMATION NO. 7986**  
**CORRECTED FILING RECEIPT**



CC000000073160262

91337

Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206

Date Mailed: 05/14/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

ROBERT A. KENNEWICK, BELLEVUE, WA;  
DAVID LOCKE, REDMOND, WA;  
MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;  
MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;  
RICHARD KENNEWICK, WOODINVILLE, WA;  
TOM FREEMAN, MERCER ISLAND, WA;

**Applicant(s)**

Nuance Communications, Inc., Burlington, MA;

**Assignment For Published Patent Application**

Nuance Communications, Inc., Burlington, MA

**Power of Attorney:** The patent practitioners associated with Customer Number 91337

**Domestic Priority data as claimed by applicant**

This application is a CON of 12/365,516 02/04/2009 PAT 8731929  
which is a CON of 11/747,547 05/11/2007 PAT 7502738  
which is a DIV of 10/452,147 06/03/2003 PAT 7398209  
which claims benefit of 60/384,388 06/03/2002

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

**If Required, Foreign Filing License Granted:** 05/28/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/278,627**

**Projected Publication Date:** Not Applicable

**Non-Publication Request:** No

**Early Publication Request:** No  
**Title**

SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES

**Preliminary Class**

704

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

page 2 of 4

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

---

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

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Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.                                                                                                                            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------------------|-----------------------------|
| 14/278,627                                                                                                                                 | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09                 | 7986                        |
| 91337 7590 01/21/2016<br>Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206 |             |                      | EXAMINER<br>LERNER, MARTIN      |                             |
|                                                                                                                                            |             |                      | ART UNIT<br>2657                | PAPER NUMBER                |
|                                                                                                                                            |             |                      | NOTIFICATION DATE<br>01/21/2016 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents\_eOfficeAction@wolfgreenfield.com  
N0484\_eOfficeAction@WolfGreenfield.com  
IP.Inbox@nuance.com

|                              |                                      |                                         |                                                  |
|------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>14/278,627 | <b>Applicant(s)</b><br>KENNEWICK ET AL. |                                                  |
|                              | <b>Examiner</b><br>MARTIN LERNER     | <b>Art Unit</b><br>2657                 | <b>AIA (First Inventor to File) Status</b><br>No |

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

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1 is/are rejected.

8) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

9) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☒ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☐ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_\_.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

4) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: System to Parse Natural Language Speech for Determining a Domain Based on Context for a Plurality of Domain Agents.

The abstract of the disclosure is objected to because it should reflect the invention as now claims. Correction is required. See MPEP §608.01(b).

The disclosure is objected to because of the following informalities:

In ¶[01], U.S. Patent Application Serial No. 12/365,516 should be updated as “now U.S. Patent No. 8,731,929 issued 20 May 2014”.

In ¶[01], U.S. Patent Application Serial No. 11/747,547 should be updated as “now U.S. Patent No. 7,502,738 issued 10 March 2009”.

Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claims because the examined application claim is either anticipated by, or would have been obvious over, the reference claims. See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,502,738. Although the conflicting claims are not identical, they are not patentably distinct from each other because the corresponding claims of the patent set forth all of the significant features of the subject matter of the current claims using slightly different words.

Current independent claim 1 and corresponding independent claim 1 of the patent both set forth a system responsive to a user generated natural language speech utterance comprising an event manager coordinating interaction between components of the system, a plurality of domain agents, the domain agents being an autonomous executable that receives, processes, and responds to a query, a command, or request, and a parser that determines a domain or context for the user generated natural language utterance based on the content and context of the user utterance.

***Claim Rejections - 35 USC § 102***

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

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by *Halverson et al.* (U.S. Patent No. 6,523,061).

Regarding independent claim 1, *Halverson et al.* discloses a system for speech-based navigation, comprising:

“an event manager, the event manager coordinating interaction between components of the system” – facilitator 600 coordinates and integrates results received from different client agents on various sub-goals, in order to satisfy an overall goal;

facilitator 600 receives requests from a user interface (UI) agent 650, and delegates requests to appropriate client agents in a community (column 13, lines 15 to 51); a functionality of each client agent is made available to the agent community through registration of the client agent's capabilities with a facilitator (column 14, lines 25 to 64: Figure 6);

“a plurality of domain agents, the domain agents being autonomous executable that receives, processes and responds to at least one of a query or a command” – a resulting ICL goal expression is routed to appropriate agents including video-on-demand database agent 640, user interface (UI) agent 650, email agent 660, telephone agent 670, and VCR controller agent 680 (column 14, lines 25 to 64: Figure 6); a statement “show me the movies starring John Wayne” is a command, and a question, “What is the weather in Miami?” is a query (column 9, lines 47 to 56; column 14, lines 25 to 34); implicitly, these agents are “autonomous executable” because each of them can perform its function (‘execute’) independently (‘autonomously’) due to this distributed agent architecture;

“a parser that determines a domain for the user generated natural language utterance based on the content and context of the user utterance” – speech recognition engine 310 processes acoustic voice data and attempts to generate a text stream of recognized words; a speech recognition engine is provided with a vocabulary lexicon of likely words or phrases that the recognition engine can match against its analysis of acoustical signals for purposes of a given application; preferably a lexicon for a speech recognition engine is dynamically adjusted to reflect the current user context (“based on

. . . the context of the user utterance”); a natural language interpreter (or parser) 320 linguistically parses and interprets a textual output of a speech recognition engine; a natural language interpreter attempts to determine both the meaning of spoken words (semantic processing) as well as a grammar of the statement (syntactic processing) (column 7, line 42 to column 8, line 5: Figure 3); at least speech recognition engine 310, then, determines a content of acoustic voice data as recognized words from a vocabulary lexicon (“based on the content . . . of the user utterance”), where the lexicon is dynamically adjusted to reflect a context (“based on . . . the context of the user utterance”); facilitator 600 asks speech recognition agent 610 and natural language (NL) agent 620 to interpret the query, and return the interpretation in ICL format, where the resulting ICL goal expression is routed to appropriate agents (“that determines a domain for the user generated natural language utterance”) (column 14, lines 25 to 47: Figure 5).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone

Art Unit: 2657

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARTIN LERNER/  
Primary Examiner  
Art Unit 2657  
January 14, 2016

|                                   |                                       |                                                                |             |
|-----------------------------------|---------------------------------------|----------------------------------------------------------------|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>14/278,627 | Applicant(s)/Patent Under<br>Reexamination<br>KENNEWICK ET AL. |             |
|                                   | Examiner<br>MARTIN LERNER             | Art Unit<br>2657                                               | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name             | Classification |
|---|---|--------------------------------------------------|-----------------|------------------|----------------|
| * | A | US-7,502,738                                     | 03-2009         | Kennewick et al. | 704/257        |
| * | B | US-6,523,061                                     | 02-2003         | Halverson et al. | 704/270        |
|   | C | US-                                              |                 |                  |                |
|   | D | US-                                              |                 |                  |                |
|   | E | US-                                              |                 |                  |                |
|   | F | US-                                              |                 |                  |                |
|   | G | US-                                              |                 |                  |                |
|   | H | US-                                              |                 |                  |                |
|   | I | US-                                              |                 |                  |                |
|   | J | US-                                              |                 |                  |                |
|   | K | US-                                              |                 |                  |                |
|   | L | US-                                              |                 |                  |                |
|   | M | US-                                              |                 |                  |                |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|---|--------------------------------------------------|-----------------|---------|------|----------------|
|   | N |                                                  |                 |         |      |                |
|   | O |                                                  |                 |         |      |                |
|   | P |                                                  |                 |         |      |                |
|   | Q |                                                  |                 |         |      |                |
|   | R |                                                  |                 |         |      |                |
|   | S |                                                  |                 |         |      |                |
|   | T |                                                  |                 |         |      |                |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|-------------------------------------------------------------------------------------------|
|   | U |                                                                                           |
|   | V |                                                                                           |
|   | W |                                                                                           |
|   | X |                                                                                           |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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## BIB DATA SHEET

CONFIRMATION NO. 7986

| SERIAL NUMBER                                                                                                                                                                                                                                                                                                                                                       | FILING or 371(c)<br>DATE                                                                                          | CLASS                                                    | GROUP ART UNIT                        | ATTORNEY DOCKET<br>NO.                                                                                                                                                                                                                                                    |                                  |                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| 14/278,627                                                                                                                                                                                                                                                                                                                                                          | 05/15/2014                                                                                                        | 704                                                      | 2657                                  | 090611-0431867                                                                                                                                                                                                                                                            |                                  |                                        |
| <b>APPLICANTS</b><br>VOICEBOX TECHNOLOGIES CORPORATION, BELLEVUE, WA, Assignee (with 37 CFR 1.172 Interest);<br><b>INVENTORS</b><br>ROBERT A. KENNEWICK, BELLEVUE, WA;<br>DAVID LOCKE, REDMOND, WA;<br>MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;<br>MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;<br>RICHARD KENNEWICK, WOODINVILLE, WA;<br>TOM FREEMAN, MERCER ISLAND, WA; |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| <b>** CONTINUING DATA *****</b><br>This application is a CON of 12/365,516 02/04/2009 PAT 8731929<br>which is a CON of 11/747,547 05/11/2007 PAT 7502738<br>which is a DIV of 10/452,147 06/03/2003 PAT 7398209<br>which claims benefit of 60/384,388 06/03/2002                                                                                                    |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| <b>** FOREIGN APPLICATIONS *****</b>                                                                                                                                                                                                                                                                                                                                |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY **</b><br>05/28/2014                                                                                                                                                                                                                                                                           |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Verified and Acknowledged <u>/MARTIN LERNER/</u><br>Examiner's Signature                                                                                      |                                                                                                                   | <input type="checkbox"/> Met after Allowance<br>Initials | <b>STATE OR<br/>COUNTRY</b><br><br>WA | <b>SHEETS<br/>DRAWINGS</b><br><br>7                                                                                                                                                                                                                                       | <b>TOTAL<br/>CLAIMS</b><br><br>1 | <b>INDEPENDENT<br/>CLAIMS</b><br><br>1 |
| <b>ADDRESS</b><br>Pillsbury Winthrop Shaw Pittman, LLP (NV)<br>PO Box 10500<br>McLean, VA 22102<br>UNITED STATES                                                                                                                                                                                                                                                    |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| <b>TITLE</b><br>SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES                                                                                                                                                                                                                                                                                        |                                                                                                                   |                                                          |                                       |                                                                                                                                                                                                                                                                           |                                  |                                        |
| <b>FILING FEE<br/>RECEIVED</b><br>800                                                                                                                                                                                                                                                                                                                               | FEES: Authority has been given in Paper<br>No. _____ to charge/credit DEPOSIT ACCOUNT<br>No. _____ for following: |                                                          |                                       | <input type="checkbox"/> All Fees<br><input type="checkbox"/> 1.16 Fees (Filing)<br><input type="checkbox"/> 1.17 Fees (Processing Ext. of time)<br><input type="checkbox"/> 1.18 Fees (Issue)<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Credit |                                  |                                        |

**EAST Search History****EAST Search History (Prior Art)**

| <b>Ref #</b> | <b>Hits</b> | <b>Search Query</b>             | <b>DBs</b>      | <b>Default Operator</b> | <b>Plurals</b> | <b>Time Stamp</b> |
|--------------|-------------|---------------------------------|-----------------|-------------------------|----------------|-------------------|
| L1           | 78          | kennewick.in. and "704"/\$.cls. | US-PGPUB; USPAT | OR                      | ON             | 2015/05/18 09:09  |

**5/ 18/ 2015 9:24:37 AM**

**EAST Search History****EAST Search History (Prior Art)**

| <b>Ref #</b> | <b>Hits</b> | <b>Search Query</b>                                                         | <b>DBs</b>                   | <b>Default Operator</b> | <b>Plurals</b> | <b>Time Stamp</b>   |
|--------------|-------------|-----------------------------------------------------------------------------|------------------------------|-------------------------|----------------|---------------------|
| L1           | 1           | ("8731929").PN.                                                             | US-PGPUB;<br>USPAT;<br>USOCR | OR                      | OFF            | 2015/05/06<br>15:24 |
| L2           | 1           | ("7502738").PN.                                                             | US-PGPUB;<br>USPAT;<br>USOCR | OR                      | OFF            | 2015/05/06<br>15:25 |
| L3           | 4           | halverson.in. and facilitator                                               | US-PGPUB;<br>USPAT           | OR                      | ON             | 2015/05/06<br>15:31 |
| L4           | 8           | (domain adj agent and autonomous adj executable).clm.                       | US-PGPUB;<br>USPAT           | OR                      | ON             | 2015/05/06<br>15:34 |
| L5           | 6           | (event adj manager and domain adj agent and autonomous adj executable).clm. | US-PGPUB;<br>USPAT           | OR                      | ON             | 2015/05/06<br>15:37 |

**5/ 6/ 2015 3:38:01 PM**

|                                                                                                              |                                                |                                                                        |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>KENNEWICK ET AL. |
|                                                                                                              | <b>Examiner</b><br><br>MARTIN LERNER           | <b>Art Unit</b><br><br>2657                                            |

| CPC- SEARCHED                       |           |          |
|-------------------------------------|-----------|----------|
| Symbol                              | Date      | Examiner |
| G10L 15/18, 15/183, 15/30, 2015/223 | 1/14/2016 | ML       |

| CPC COMBINATION SETS - SEARCHED |      |          |
|---------------------------------|------|----------|
| Symbol                          | Date | Examiner |
|                                 |      |          |

| US CLASSIFICATION SEARCHED |                           |           |          |
|----------------------------|---------------------------|-----------|----------|
| Class                      | Subclass                  | Date      | Examiner |
| 704                        | 231, 257, 270, 270.1, 275 | 1/14/2016 | ML       |

| SEARCH NOTES                |           |          |
|-----------------------------|-----------|----------|
| Search Notes                | Date      | Examiner |
| EAST Search Attached        | 1/14/2016 | ML       |
| Parent Applications Checked | 1/14/2016 | ML       |

| INTERFERENCE SEARCH     |                         |      |          |
|-------------------------|-------------------------|------|----------|
| US Class/<br>CPC Symbol | US Subclass / CPC Group | Date | Examiner |
|                         |                         |      |          |

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

First Named Inventor: Robert A. Kennewick  
Application No.: 14/278,627  
Confirmation No.: 7986  
Filed: May 15, 2014  
For: SYSTEM AND METHOD FOR PROCESSING NATURAL  
LANGUAGE UTTERANCES  
Examiner: Martin Lerner  
Art Unit: 2657

|                                                                                                                                                                                                       |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Certificate of Electronic Filing Under 37 CFR 1.8</b>                                                                                                                                              |                               |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                               |
| Dated: <u>4/21/2016</u>                                                                                                                                                                               | Signature: <u>[Signature]</u> |

**AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION UNDER 37 C.F.R. § 1.111**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INTRODUCTORY COMMENTS**

In response to the Office Action dated January 21, 2016, please amend the above-identified U.S. patent application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Abstract** begin on page 3 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 4 of this paper.

**Remarks/Arguments** begin on page 7 of this paper.

**AMENDMENTS TO THE SPECIFICATION**

Please replace the title of the specification with the following new title:  
METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE  
CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE

Please replace the “Cross-Reference to Related Applications” paragraph beginning on page 1, paragraph 1, of the specification with the following amended paragraph:

Cross-Reference to Related Applications

[01] This application is a continuation of U.S. Patent Application Serial No. 12/365,516, entitled “Agent Architecture for Determining Meanings of Natural Language Utterances,” which issued as U.S. Patent No. 8,731,929 on May 20, 2014, which is a continuation of U.S. Patent Application Serial No. 11/747,547, entitled “Systems and Methods for Responding to Natural Language Speech Utterance,” which issued as U.S. Patent No. 7,502,738 on March 10, 2009, which is a divisional of U.S. Patent Application Serial No. 10/452,147, entitled “Systems and Methods for Responding to Natural Language Speech Utterance,” which issued as U.S. Patent No. 7,398,209 on July 8, 2008, and which claims priority from U.S. Provisional Patent Application Serial No. 60/384,388, filed June 3, 2002, the disclosures of each of which are hereby incorporated by reference in their entirety.

**AMENDMENTS TO THE ABSTRACT**

Please substitute the following paragraph for the abstract now appearing in the currently filed specification:

Systems and methods for receiving user generated natural language utterances such as queries and/or commands and executing the queries and/or commands. A parser may be used to determine a domain for a user generated natural language utterance based on the content and context of the natural language utterance. One or more of a plurality of domain agents associated with particular domains are configured to receive and respond to queries and/or commands based on the natural language utterance.

**AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A system responsive to a user generated natural language speech utterance, comprising:

~~an event manager, the event manager coordinating interaction between components of the system;~~

~~a plurality of domain agents, the domain agents being autonomous executable that receives, processes and responds to at least one of a query or a command; and~~

a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands;

a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance;

~~a parser that determines~~ configured to:

determine a domain for the user generated natural language utterance based on the content-recognized one or more words of the natural language utterance and a context [[of]] associated with the [[user]] natural language utterance;

select at least one of the plurality of domain agents based, at least in part, on the determined domain; and

provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents.

2. (New) The system of claim 1, wherein the parser is further configured to generate the at least one query and/or command based on the natural language utterance.

3. (New) The system of claim 2, wherein  
the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

4. (New) The system of claim 1, wherein the parser is further configured to determine a score for each of a plurality of possible domains, and wherein determining the domain for the natural language utterance comprises determining the domain based, at least in part, on the scores for the plurality of possible domains, wherein one or more of the scores is determined using one or more profiles of the user, data content associated with one or more of the plurality of domain agents, and one or more contexts.

5. (New) A method for responding to a user generated natural language speech utterance, the method comprising:

recognizing, by a speech recognition engine, one or more words in the user generated natural language speech utterance;

determining, by a parser, a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance;

selecting at least one of a plurality of autonomous executable domain agents based, at least in part, on the determined domain, wherein each of the plurality of domain agents is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is capable of responding to the queries and/or commands;

providing at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents.

6. (New) The method of claim 5, further comprising generating, by the parser, the at least one query and/or command based on the natural language utterance.

7. (New) The method of claim 6, wherein the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

8. (New) The method of claim 5, further comprising:  
determining, by the parser, a score for each of a plurality of possible domains, and wherein

determining a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance comprises determining the domain based, at least in part, on the scores for the plurality of possible domains, wherein one or more of the scores is determined using one or more profiles of the user, data content associated with one or more of the plurality of domain agents, and one or more contexts.

### **REMARKS**

In response to the Office Action mailed January 21, 2016, the Assignee of the present application (Nuance Communications, Inc.) respectfully requests reconsideration. Claim 1 was previously pending. Claim 1 is amended herein. Claims 2-8 have been added. As a result, Claims 1-8 are pending for examination, of which claims 1 and 5 are independent. No new matter has been added.

#### **I. Double Patenting Rejection**

The Office Action provisionally rejects claim 1 on the ground of non-statutory double patenting over claim 1 of U.S. Patent No. 7,502,738. The Assignee will address the double patenting rejections if and when their provisional nature is withdrawn.

#### **II. Claim Rejections Under 35 U.S.C. §102**

The Office Action rejects independent claim 1 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,523,061 (“Halverson”). The Assignee respectfully requests reconsideration.

Claim 1 recites, *inter alia*, “a parser configured to: determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance; select at least one of the plurality of domain agents based, at least in part, on the determined domain; and provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents.” Support for these amendments is found at least in paragraphs [51], [77]-[79], [82], and [100] of the specification as originally filed. Halverson does not disclose the above-quoted portions of claim 1.

The Office Action identifies three components in the system of Halverson – speech recognition engine 310, natural language interpreter 320, and facilitator 600, which allegedly teach a parser that determines a domain for a natural language utterance based on the content and the context of the utterance (Office Action, pages 5-6). However, none of these components in the system of Halverson is a parser configured to perform all of the functions recited in claim 1.

Speech recognition engine 310 performs speech recognition by processing acoustic voice data to generate a text stream of recognized words (Halverson, 7:29-41). Natural language interpreter 320 interprets the text stream output from the speech recognition engine 310 to determine the meaning and grammar of the text input (Halverson, 7:64-8:3).

Although Halverson describes natural language interpreter 320 as being a “parser” the natural language interpreter in Halverson’s system is not configured to perform any of the functions recited in claim 1. In particular, natural language interpreter 320 is not configured to determine a domain for a natural language utterance, select at least one of a plurality of domain agents based, at least in part, on the determined domain, or provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents, all of which are required by claim 1. Rather, the natural language interpreter merely determines a meaning or a grammar of text input. Neither the meaning nor the grammar determined by the natural language interpreter 320 is a domain that indicates an area of expertise within which a domain agent is configured to respond to queries and/or commands, as recited in claim 1. Additionally, the natural language interpreter of Halverson does not determine a meaning or a grammar ***based on a context associated with a natural language utterance***, as recited in claim 1. For at least these reasons, the natural language interpreter 320 in Halverson’s system is not a parser configured as claimed.

Facilitator 600 in the system of Halverson receives voice data for a query from a UI agent and instructs a natural language agent 620 and speech recognition agent 610 to interpret the query and return the result of the interpretation (Halverson, 14:30-34). The facilitator then routes the result to an appropriate agent for further processing (Halverson, 14:34-35). Although facilitator 600 coordinates the interactions between different components in Halverson’s system by routing information to appropriate agents for processing, facilitator 600 is not a parser configured to perform all of the functions recited in claim 1. For example, facilitator 600 does not determine a domain for a natural language utterance based on its content and a context associated with the utterance, as recited in claim 1.

As should be appreciated from the foregoing, Halverson fails to disclose that any of the components identified in the Office Action are configured to perform all of the functions of the parser recited in claim 1. Accordingly, Halverson does not anticipate claim 1, and it is respectfully requested that the rejections under 35 U.S.C. §102 be withdrawn.

III. New Claims 2-8

Claims 2-8 are newly added to this application. Support for these claims is found at least at [41], [51], [77]-[79], [82], [96]-[98], and [100] of the specification as originally filed. New independent claim 5 is a method claim that includes limitations similar (but not identical) to independent claim 1. Claims 2-4 depend from claim 1, and claims 6-8 depend from claim 5. Each of these dependent claims patentably distinguishes over Halverson for at least the same reasons as the base claim from which it depends.

IV. Additional Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, the Assignee believes it is unnecessary at this time to argue the allowability of each of the dependent claims individually. The Assignee does not, however, necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor does the Assignee concur that the basis for the rejection of any of the dependent claims is proper. Therefore, the Assignee reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Assignee hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. N0484.71158US09, from which the undersigned is authorized to draw.

Dated: April 21, 2016

Respectfully submitted,

By 

Daniel T. Wehner, Ph.D.

Registration No.: 63,480

WOLF, GREENFIELD & SACKS, P.C.

600 Atlantic Avenue

Boston, Massachusetts 02210-2206

617.646.8000

| Electronic Acknowledgement Receipt          |                                                              |
|---------------------------------------------|--------------------------------------------------------------|
| <b>EFS ID:</b>                              | 25564724                                                     |
| <b>Application Number:</b>                  | 14278627                                                     |
| <b>International Application Number:</b>    |                                                              |
| <b>Confirmation Number:</b>                 | 7986                                                         |
| <b>Title of Invention:</b>                  | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                          |
| <b>Customer Number:</b>                     | 91337                                                        |
| <b>Filer:</b>                               | Daniel T. Wehner/Trish McDonald                              |
| <b>Filer Authorized By:</b>                 | Daniel T. Wehner                                             |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                              |
| <b>Receipt Date:</b>                        | 21-APR-2016                                                  |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                  |
| <b>Time Stamp:</b>                          | 18:30:29                                                     |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                  |

**Payment information:**

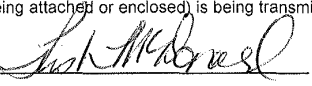
| Submitted with Payment |                               | no                             |                                                   |                  |                  |
|------------------------|-------------------------------|--------------------------------|---------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                               |                                |                                                   |                  |                  |
| Document Number        | Document Description          | File Name                      | File Size(Bytes)/<br>Message Digest               | Multi Part /.zip | Pages (if appl.) |
| 1                      | Miscellaneous Incoming Letter | N048471158US09-TRN-DTW.<br>PDF | 57519<br>02f516874768edf09321d38630f27f595f68d92b | no               | 1                |
| <b>Warnings:</b>       |                               |                                |                                                   |                  |                  |
| <b>Information:</b>    |                               |                                |                                                   |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            |                                |                                                        |     |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|--------------------------------------------------------|-----|----|
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            | N048471158US09-AMN-DTW.<br>PDF | 408424<br><br>c6a43c81e16ffa90d0ddee6fbfc4843ff9a9a2d1 | yes | 10 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Multipart Description/PDF files in .zip description</b> |                                |                                                        |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Document Description</b>                                | <b>Start</b>                   | <b>End</b>                                             |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Amendment/Req. Reconsideration-After Non-Final Reject      | 1                              | 1                                                      |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Specification                                              | 2                              | 2                                                      |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Abstract                                                   | 3                              | 3                                                      |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Claims                                                     | 4                              | 6                                                      |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Applicant Arguments/Remarks Made in an Amendment           | 7                              | 10                                                     |     |    |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                            |                                |                                                        |     |    |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            |                                |                                                        |     |    |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            |                                | 465943                                                 |     |    |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                            |                                |                                                        |     |    |

|                                                                                                    |                        |                        |
|----------------------------------------------------------------------------------------------------|------------------------|------------------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br><i>(to be used for all correspondence after initial filing)</i> | Application Number     | 14/278,627-Conf. #7986 |
|                                                                                                    | Filing Date            | May 15, 2014           |
|                                                                                                    | First Named Inventor   | Robert A. Kennewick    |
|                                                                                                    | Art Unit               | 2657                   |
|                                                                                                    | Examiner Name          | R. Dorvil              |
| Total Number of Pages in This Submission                                                           | Attorney Docket Number | N0484.71158US09        |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input checked="" type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/ Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input type="checkbox"/> Other Enclosure(s) (please identify below): |
| <div>Remarks</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                      |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                                                                     |          |        |
|--------------------------------------------|-------------------------------------------------------------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C.                                                      |          |        |
| Signature                                  |  |          |        |
| Printed name                               | Daniel T. Wehner                                                                    |          |        |
| Date                                       | April 21, 2016                                                                      | Reg. No. | 63,480 |

|                                                                                                                                                                                                       |                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Certificate of Electronic Filing Under 37 CFR 1.8                                                                                                                                                     |                                                                                                   |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                                                                                   |
| Dated: April 21, 2016                                                                                                                                                                                 | Signature:  ) |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

|                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------|---------------------------------------------------|---------------|----------------------------------|---|---------------------------------------|--|
| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               |                                  |       | Application or Docket Number<br><b>14/278,627</b> |               | Filing Date<br><b>05/15/2014</b> |   | <input type="checkbox"/> To be Mailed |  |
| ENTITY: <input checked="" type="checkbox"/> LARGE <input type="checkbox"/> SMALL <input type="checkbox"/> MICRO                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |
| <b>APPLICATION AS FILED – PART I</b>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                               | (Column 2)                       |       |                                                   |               |                                  |   |                                       |  |
| FOR                                                                                                                                                                                                                                                                                                                                                                                                                                  | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA                     |       | RATE (\$)                                         |               | FEE (\$)                         |   |                                       |  |
| <input type="checkbox"/> BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                                                                                           | N/A                              |       | N/A                                               |               |                                  |   |                                       |  |
| <input type="checkbox"/> SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m))                                                                                                                                                                                                                                                                                                                                                                 | N/A                                                                                                                                                                                                                           | N/A                              |       | N/A                                               |               |                                  |   |                                       |  |
| <input type="checkbox"/> EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))                                                                                                                                                                                                                                                                                                                                                            | N/A                                                                                                                                                                                                                           | N/A                              |       | N/A                                               |               |                                  |   |                                       |  |
| TOTAL CLAIMS<br>(37 CFR 1.16(i))                                                                                                                                                                                                                                                                                                                                                                                                     | minus 20 =                                                                                                                                                                                                                    | *                                |       | X \$                                              | =             |                                  |   |                                       |  |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                                                                                                                                                                                                                                                                                                                                                                               | minus 3 =                                                                                                                                                                                                                     | *                                |       | X \$                                              | =             |                                  |   |                                       |  |
| <input type="checkbox"/> APPLICATION SIZE FEE<br>(37 CFR 1.16(s))                                                                                                                                                                                                                                                                                                                                                                    | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |                                  |       |                                                   |               |                                  |   |                                       |  |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |
| * If the difference in column 1 is less than zero, enter "0" in column 2.                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                               |                                  |       | TOTAL                                             |               |                                  |   |                                       |  |
| <b>APPLICATION AS AMENDED – PART II</b>                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                               | (Column 2)                       |       | (Column 3)                                        |               |                                  |   |                                       |  |
| <b>AMENDMENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>04/21/2016</b>                                                                                                                                                                                                             | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR                | PRESENT EXTRA | RATE (\$)                        |   | ADDITIONAL FEE (\$)                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | Total (37 CFR 1.16(i))                                                                                                                                                                                                        | * 8                              | Minus | ** 20                                             | = 0           | X \$80 =                         |   | 0                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | Independent (37 CFR 1.16(h))                                                                                                                                                                                                  | * 2                              | Minus | ***3                                              | = 0           | X \$420 =                        |   | 0                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                                                                                                                                                                |                                  |       |                                                   |               |                                  |   |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))                                                                                                                                      |                                  |       |                                                   |               |                                  |   |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                  |       |                                                   |               | TOTAL ADD'L FEE                  |   | <b>0</b>                              |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                               | (Column 2)                       |       | (Column 3)                                        |               |                                  |   |                                       |  |
| <b>AMENDMENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                               | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR                | PRESENT EXTRA | RATE (\$)                        |   | ADDITIONAL FEE (\$)                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | Total (37 CFR 1.16(i))                                                                                                                                                                                                        | *                                | Minus | **                                                | =             | X \$                             | = |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | Independent (37 CFR 1.16(h))                                                                                                                                                                                                  | *                                | Minus | ***                                               | =             | X \$                             | = |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                                                                                                                                                                |                                  |       |                                                   |               |                                  |   |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))                                                                                                                                      |                                  |       |                                                   |               |                                  |   |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                               |                                  |       |                                                   |               | TOTAL ADD'L FEE                  |   |                                       |  |
| <p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p> |                                                                                                                                                                                                                               |                                  |       |                                                   |               |                                  |   |                                       |  |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



# UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO.                                                                                                                            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------------------|-----------------------------|
| 14/278,627                                                                                                                                 | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09                 | 7986                        |
| 91337 7590 05/24/2016<br>Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206 |             |                      | EXAMINER<br>LERNER, MARTIN      |                             |
|                                                                                                                                            |             |                      | ART UNIT<br>2657                | PAPER NUMBER                |
|                                                                                                                                            |             |                      | NOTIFICATION DATE<br>05/24/2016 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents\_eOfficeAction@wolfgreenfield.com  
N0484\_eOfficeAction@WolfGreenfield.com  
IP.Inbox@nuance.com

|                              |                                      |                                         |                                                  |
|------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>14/278,627 | <b>Applicant(s)</b><br>KENNEWICK ET AL. |                                                  |
|                              | <b>Examiner</b><br>MARTIN LERNER     | <b>Art Unit</b><br>2657                 | <b>AIA (First Inventor to File) Status</b><br>No |

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

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 21 April 2016.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1 to 8 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1 to 8 is/are rejected.

8) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

9) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☐ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_\_.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

4) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions.

#### ***Claim Rejections - 35 USC § 103***

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

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

Claims 1 to 8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Halverson et al.* (U.S. Patent No. 6,523,061) in view of *Howard et al.* (U.S. Patent No. 6,513,006).

Concerning independent claims 1 and 5, *Halverson et al.* discloses a system and method for speech-based navigation, comprising:

“a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands” – a statement “show me the movies starring John Wayne” is a command, and a question, “What is the weather in Miami?” is a query (“configured to respond to queries and/or commands”) (column 9,

lines 47 to 56; column 14, lines 25 to 34); a resulting ICL goal expression is routed to appropriate agents including video-on-demand database agent 640, user interface (UI) agent 650, email agent 660, telephone agent 670, and VCR controller agent 680 (“a plurality of . . . domain agents”) (column 14, lines 25 to 64: Figure 6); implicitly, these agents are “autonomous executable” because each of them can perform its function (‘execute’) independently (‘autonomously’) due to this distributed agent architecture; moreover, each of these agents 640, 650, 660, 670 and 680 has “an area of expertise” corresponding to its “domain”, *i.e.*, a video-on-demand database agent 640 has an ‘expertise’ in a ‘domain’ of video-on-demand, an email agent 660 has an ‘expertise’ in a ‘domain’ of e-mail, a VCR controller agent 680 has ‘expertise’ in a ‘domain’ of programming a VCR;

“a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance” – navigation of electronic data is by means of spoken natural language requests (“the user generated natural language speech utterance”) (column 1, lines 22 to 25); interpreting spoken natural language requests begins by receiving a user’s spoken request for information; speech recognition is performed using speech recognition engine 310 (“a speech recognition engine”); a speech recognition engine is provided with a vocabulary lexicon of likely words or phrases that the recognition engine can match against its analysis of acoustic signals for purposes of a given application (column 7, lines 18 to 45: Figures 3 to 4);

“a parser configured to: determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language

utterance and a context associated with the natural language utterance” – natural language interpreter or parser 320 (“a parser configured to:”) linguistically parses and interprets the textual output of the speech recognition engine to determine both the meaning of the spoken words (semantic processing) and the grammar of the statement (syntactic processing) (column 7, line 64 to column 8, line 11: Figures 3 to 4); a lexicon for speech recognition engine 310 is dynamically adjusted to reflect a current user context as established by the preceding user inputs (“based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance”); if the user is engaged in a dialogue with the system about movie selection, the recognition engine’s vocabulary may preferably be adjusted to favor relevant words and phrases of a stored list of proper names for popular movie actors and directors; if the current dialogue involves selection and viewing of a sports event, the engine’s vocabulary might preferably be adjusted to favor a stored list of proper names of professional sports teams (column 7, lines 45 to 56); a functionality of each client agent is made available to the agent community through registration of the client agent’s capabilities with a facilitator; when a facilitator determines that the registered capabilities of one of its client agents will help satisfy a current goal or sub-goal thereof, the facilitator delegates that sub-goal to the client agent (“determine a domain for the user generated natural language utterance”) in the form of a ICL (Interagent Communication Language) request (column 13, lines 22 to 45);

“select at least one of the plurality of domain agents based, at least in part, on the determined domain” – if the statement “Show me movies starring John Wayne” is

spoken into a voice input device, the voice data for this request will be sent to facilitator 600, which in turn will ask natural language (NL) agent 620 and speech recognition agent 610 to interpret the query and return an interpretation in ICL format; the resulting ICL goal expression is then routed by the facilitator to appropriate agents (“select at least one of the plurality of domain agents based . . . on the determined domain”) – in this case, video-on-demand database agent 640 – to execute the request (column 14, lines 28 to 37: Figure 6); other spoken requests, *e.g.*, a request for the current weather in New York City or for a stock quote, would eventually lead facilitator to invoke web database agent 630 to access the desired information from an appropriate Internet site; other spoken requests, *e.g.*, a request to view recent emails or access voice mail, would lead facilitator to invoke an appropriate email agent 660 or telephone agent 670 (column 14, lines 48 to 64: Figure 6);

“provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents” – request processing logic 300 identifies and selects an appropriate online data source where the directed information (in this case, current weather reports for a given city) can be found; query construction logic 330 constructs a navigation query (“at least one query and/or command”) reflecting the interpretation; a navigation query is constructed so that it includes whatever content and structure is required in order to access desired information electronically from a particular database or data source of interest (column 8, line 50 to column 9, line 5: Figures 3 to 4); facilitator 600 will delegate requests to appropriate client agents in the community (column 14, lines 43 to 44); a request to

record a televised program of interest might lead facilitator 600 to invoke web database agent 630 to return televised program schedule information, and then invoke VCR controller agent 680 to program the associated VCR unit to record the desired television program at the scheduled time (column 14, lines 58 to 64: Figure 6).

Concerning independent claims 1 and 5, *Halverson et al.* arguably discloses all of the limitations of these independent claims, but could be construed to omit “determining a domain . . . based on a context associated with the natural language utterance” and “select at least one of the plurality of domain agents based, at least in part, on the determined domain”. Generally, *Halverson et al.* discloses that facilitator 600 invokes speech recognition agent 610 and natural language agent 620 to interpret a query, and then uses this interpretation to invoke (‘select’) an appropriate agent to execute a request. (Column 14, Lines 28 to 37: Figure 6) Inherently, each agent corresponds to a “domain”. Moreover, *Halverson et al.* discloses that speech recognition engine 310 and natural language parser 320 provide a lexicon that is dynamically adjusted to reflect a current user context as established by preceding user inputs, where a ‘context’ can relate to words relevant to movies for a movie context or words relevant to a sports event for a sports context. (Column 7, Lines 45 to 47: Figures 3 to 4) *Halverson et al.*, then, incorporates this context recognition by speech recognition engine 310 into recognition agent 610 so that facilitator 600 invokes (‘selects’) an appropriate agent based both on a “domain”, *e.g.*, movies, weather, stocks, emails, *etc.*, and on a “context”, *i.e.*, whether preceding user input relates to movies or sports.

Concerning independent claims 1 and 5, however, even if these limitations directed to determining a domain based on recognized words and a context, and selecting a domain agent based on the determined domain are taken to be omitted by *Halverson et al.*, then they are taught by *Howard et al.* Generally, *Howard et al.* teaches a system and method for controlling household activity using speech recognition and natural language similar to *Halverson et al.* A speech recognition system has a parser for extracting semantic information from a user's input speech, and a data store stores a representation of one or more electronic activity guides, where these guides have a capability of limiting the natural language dialog domain to a particular device, system, or discourse. (Column 2, Lines 18 to 23) Each appliance or device communicating over a network has an associated electronic activity guide that conforms the dialog grammar to its particular domain. (Column 2, Lines 51 to 54) A gateway can include components for performing a variety of home automation functions including lighting control functions, fire and burglar alarm functions, heating and cooling system control functions, and telephone answering and switching functions. (Column 3, Lines 45 to 56: Figure 1) A natural language dialog module 40 works in conjunction with a set of electronic activity guides to serve to limit the domain of the natural language dialog module to extract semantic content or meaning from the text supplied to the dialog module by speech recognizer 36. (Column 4, Lines 49 to 59: Figure 1) The output of speech recognition module 110 is supplied to a natural language parser 112, which operates on a goal-oriented basis using recognized keywords and phrases to represent

different goal-oriented tasks. (Column 5, Lines 12 to 24: Figure 2) An electronic activity guide associated with a television or video recorder has separate categories for movies, sports, news, and weather. (Column 5, Lines 40 to 44) A generalized parsing algorithm scores all possible parse-trees utilizing contextual information. (Column 8, Lines 40 to 43) Context information 367 is utilized for tag and score generations to adjust weights associated with a scoring factor. Dialog manager 230 generates dialogue context weights 369 by determining a state of a dialogue. (Column 9, Lines 20 to 42: Figure 4) *Howard et al.*, then, teaches that dialogue manager 124 utilizes speech recognizer 110 and natural language parser 112 to select a domain, *e.g.*, refrigerator 46, television 48, and home automation system 50, based on a context. An advantage is to separate electronic activity guides for each piece of equipment to make programming and troubleshooting of the guides easier when designing the system. (Column 4, Lines 64 to 67) It would have been obvious to one having ordinary skill in the art to determine a domain for natural language utterances based on recognized words and a context associated with a natural language utterance as taught by *Howard et al.* in a system and method for agent-based navigation of *Halverson et al.* for a purpose of separating electronic activity guides to make them easier to program and troubleshoot.

Concerning claims 2 and 6, *Halverson et al.* discloses constructing a navigation query from a natural language utterance. (Abstract; Column 4, Line 63 to Column 5, Line 15: Figure 1*b*)

Concerning claims 3 and 7, *Halverson et al.* discloses at least one request that comprises “a plurality of queries and/or commands” for an embodiment of a request to record a televised program of interest, where facilitator 600 invokes a web database agent 630 to return televised program schedule information, and then invokes VCR controller agent 680 to program the associated VCR unit to record the desired television program at the scheduled time. (Column 14, Lines 58 to 64: Figure 6) So, a user’s request to record a televised program of interest involves two queries and/or commands (“a plurality of queries and/or commands”): (1) to return schedule information and (2) to program the VCR.

Concerning claims 4 and 8, *Howard et al.* teaches that dialog manager 124 works in conjunction with a profile data store 128, which may contain user profile information including data on what the user has previously requested. The profile data store can be used to store user preferences, as when a user regularly rejects a dinner selection of spinach stew. (Column 6, Lines 30 to 54: Figure 4) Local parser 260 utilizes a scoring mechanism to provide parse hypotheses. Speech understanding module 228 includes knowledge database 263 that encodes the semantics of a domain, *i.e.*, a goal to be achieved. Knowledge database 263 is a domain-specific database and is used by dialog manager 230 to determine whether a particular action related to achieving a goal is possible. (Column 6, Line 65 to Column 7, Line 17: Figure 3) Generalized parsing algorithm is a way of scoring all possible parse trees so that the (N) best candidates are selected utilizing contextual information. Lexical analysis stage 320 identifies and generates tags for topics including, in a home entertainment application,

movie names, categories of movies, producers, names of actors and actresses.

(Column 8, Lines 50 to 57: Figure 4) Generators 330 and 332 generate parse forests 350 and 352 for their topics. Context information 367 is utilized for tag and score generations by generators 360 and 362, where context information 367 is utilized in scoring heuristics for adjusting weights associated with a heuristic scoring factor.

(Column 9, Lines 13 to 25: Figure 4) So, *Howard et al.* teaches determining a domain, or topic, by a “score” using “profiles of a user” and “a context associated with the natural language utterance”.

### ***Response to Arguments***

Applicants’ arguments filed 21 April 2016 have been considered but are moot in view of new grounds of rejection, necessitated by amendment.

Applicants’ amendments overcome the objections to the title, the abstract, and the Specification.

Applicants amend independent claim 1, add new independent claim 5, and new dependent claims 2 to 4 and 6 to 8.

Applicants state that they will address the provisional double patenting rejection when its provisional nature is withdrawn.

Actually, this double patenting rejection is not provisional in nature as it is based upon issued U.S. Patent No. 7,502,738. Generally, a double patenting rejection is only provisional when it is based on a co-pending patent application, but is non-provisional when it is based upon an issued patent. Still, this double patenting rejection is being

withdrawn due to the claim amendments by Applicants. Applicants' current claims, as amended, now appear to be patentably distinct from any prior patents or applications.

Applicants provide arguments traversing the rejection of independent claim 1 as being anticipated under 35 U.S.C. §102(e) over *Halverson et al.* (U.S. Patent No. 6,523,061). Basically, Applicants argue that *Halverson et al.* fails to disclose a parser, as amended. Specifically, Applicants state that the Office Action identifies three components of *Halverson et al.*: a speech recognition engine 310, a natural language interpreter 320, and a facilitator 600, which are alleged to teach a parser that determines a domain for a natural language utterance based on the content and context of an utterance. However, Applicants maintain that none of these components of *Halverson et al.* is a parser configured to perform all the functions of independent claim 1.

Applicants allege that although natural language interpreter 320 is described as being a parser by *Halverson et al.*, natural language parser is not configured to determine a domain for a natural language utterance, select one of a plurality of domain agents, and provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of agents. Applicants say that instead the natural language interpreter merely determines a meaning or grammar of text input, but neither the meaning nor the grammar determined by the natural language interpreter 320 is a domain that indicates an area of expertise within which a domain agent is configured to respond to queries and/or commands. Additionally, Applicants state that the natural language interpreter of *Halverson et al.* does not determine a

meaning or a grammar based on a context associated with a natural language utterance. Moreover, Applicants argue that the facilitator 600 of *Halverson et al.* coordinates the interactions between the different components, but facilitator 600 is not a parser configured to perform all the functions including determining a domain for a natural language utterance based on its content and context associated with the utterance as set forth by independent claim 1.

New grounds of rejection are set forth directed to independent claims 1 and 5, as amended, as being obvious under 35 U.S.C. §103(a) over *Halverson et al.* (U.S. Patent No. 6,523,061) in view of *Howard et al.* (U.S. Patent No. 6,513,006). Applicants' arguments are to some degree moot in view of the new grounds of rejection. Here, *Howard et al.* provides some further teachings as to the nature of a parser 112. Each appliance or device communicating over the network has an associated electronic activity guide that conforms the dialog grammar to its particular domain. (Column 2, Lines 50 to 54) *Howard et al.* states that natural language dialog module 40 works with a set of electronic activity guides 44, 46, 48, and 50, which serve to limit the domain of a natural language dialog module. Figure 1 shows these electronic activity guides 44, 46, 48, and 50 as relating to 'domains' of a refrigerator, a television, and a home automation system. (Column 4, Lines 49 to 59: Figure 1) Then, *Howard et al.* teaches that an output of speech recognition module 110 is supplied to natural language parser 112, where the parser operates on a goal-oriented basis to identify keywords and phrases from recognized speech to fill slots that represent different goal-oriented tasks. (Column 5, Lines 12 to 24: Figure 2) Additionally, *Howard et al.* teaches that a

generalized parsing algorithm scores possible parses utilizing contextual information. (Column 8, Lines 40 to 43) Context information 367 is utilized for tag and score generations by adjusting weights associated with a heuristic scoring factor. (Column 9, Lines 13 to 42: Figure 4) So, *Howard et al.* teaches that parser 112 assists in determining a domain corresponding to a goal achievable by each of the electronic activity guides 42, and utilizing context associated with an utterance.

Moreover, Applicants' arguments are not completely persuasive as to what is disclosed by *Halverson et al.* Applicants' arguments indicate that they wish to assign some literal interpretation as to what is performed by natural language interpreter (or parser) 320 of *Halverson et al.*, but this does not fairly represent what is disclosed by this prior art as a whole. Specifically, it is contended that it is reasonable to ascribe the functionality of Applicants' parser to, in combination, natural language interpreter (or parser) 320 and facilitator 600 of *Halverson et al.* Here, Applicants' claimed element of a parser can be reasonably mapped to two elements of the prior art. Moreover, principles of claim interpretation do not require the same words be employed in the prior art as in the claims. Basically, it is contended that Applicants' claimed parser is functionally equivalent to natural language interpreter (or parser) 320 and facilitator 600, in combination, of *Halverson et al.*

Applicants should observe that facilitator 600 of *Halverson et al.* actually invokes natural language agent 620 and speech recognition agent 610 to interpret a query. Facilitator 600, then, invokes and delegates requests to appropriate client agents in the community to execute a request. (Column 14, Lines 28 to 34: Figure 6) This natural

language agent 620 appears to incorporate natural language interpreter (or parser) 320, which is stated to perform linguistically parsing and interpreting of the textual output of speech recognition engine 310. (Column 7, Lines 64 to 66: Figure 3) Moreover, *Halverson et al.* discloses that a lexicon of speech recognition engine 310 is dynamically adjusted to reflect a current user context as established by preceding user inputs. (Column 7, Lines 42 to 56: Figure 3) Facilitator 600 of *Halverson et al.*, viewed as a whole, receives words and phrases from speech recognition engine 310 (“based on the recognized one or more words of the natural language utterance”) and a context established by preceding inputs (“a context associated with the natural language utterance”) to invoke an appropriate client agent (“select at least one of the plurality of domain agents”) that is delegated the request (“provide at least one query and/or command . . . to the selected at least one of the plurality of domain agents”).

Given that facilitator 600 of *Halverson et al.* invokes natural language agent 620 to perform parsing, facilitator 600 incorporates a parsing functionality. *Halverson et al.*'s facilitator 600 incorporating a parsing functionality of natural language parser 320 is equivalent to Applicants' parser, and performs all of the functionality of Applicants' parser. Applicants have simply assigned another name of a “parser” to functionality performed by facilitator 600 of *Halverson et al.* Applicants' arguments, then, are not completely persuasive as to what is disclosed by *Halverson et al.*

Applicants' amendment necessitates these new grounds of rejection.  
Accordingly, this Office Action is properly FINAL.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Junqua and Karaorman et al. disclose related prior art.

Applicants' amendment necessitated the new grounds of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARTIN LERNER/  
Primary Examiner  
Art Unit 2657  
May 17, 2016

|                                   |                                       |                                                                |             |
|-----------------------------------|---------------------------------------|----------------------------------------------------------------|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>14/278,627 | Applicant(s)/Patent Under<br>Reexamination<br>KENNEWICK ET AL. |             |
|                                   | Examiner<br>MARTIN LERNER             | Art Unit<br>2657                                               | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                | CPC Classification | US Classification |
|---|---|--------------------------------------------------|-----------------|---------------------|--------------------|-------------------|
| * | A | US-6,513,006 B2                                  | 01-2003         | Howard; John        | G10L15/1822        | 704/257           |
| * | B | US-6,598,018 B1                                  | 07-2003         | Junqua; Jean-Claude | G10L15/22          | 704/231           |
| * | C | US-6,631,346 B1                                  | 10-2003         | Karaorman; Murat    | G10L15/1822        | 704/275           |
|   | D | US-                                              |                 |                     |                    |                   |
|   | E | US-                                              |                 |                     |                    |                   |
|   | F | US-                                              |                 |                     |                    |                   |
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|   | I | US-                                              |                 |                     |                    |                   |
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|   | K | US-                                              |                 |                     |                    |                   |
|   | L | US-                                              |                 |                     |                    |                   |
|   | M | US-                                              |                 |                     |                    |                   |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | CPC Classification |
|---|---|--------------------------------------------------|-----------------|---------|------|--------------------|
|   | N |                                                  |                 |         |      |                    |
|   | O |                                                  |                 |         |      |                    |
|   | P |                                                  |                 |         |      |                    |
|   | Q |                                                  |                 |         |      |                    |
|   | R |                                                  |                 |         |      |                    |
|   | S |                                                  |                 |         |      |                    |
|   | T |                                                  |                 |         |      |                    |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|-------------------------------------------------------------------------------------------|
|   | U |                                                                                           |
|   | V |                                                                                           |
|   | W |                                                                                           |
|   | X |                                                                                           |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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## BIB DATA SHEET

CONFIRMATION NO. 7986

| SERIAL NUMBER                                                                                                                                                                                                                                                                  | FILING or 371(c)<br>DATE                                                                                          | CLASS                                                    | GROUP ART UNIT                | ATTORNEY DOCKET<br>NO.                                                                                                                                                                                                                                                    |                          |                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------|
| 14/278,627                                                                                                                                                                                                                                                                     | 05/15/2014                                                                                                        | 704                                                      | 2657                          | N0484.71158US09                                                                                                                                                                                                                                                           |                          |                                |
| <b>APPLICANTS</b><br>Nuance Communications, Inc., Burlington, MA;                                                                                                                                                                                                              |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>INVENTORS</b><br>ROBERT A. KENNEWICK, BELLEVUE, WA;<br>DAVID LOCKE, REDMOND, WA;<br>MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;<br>MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;<br>RICHARD KENNEWICK, WOODINVILLE, WA;<br>TOM FREEMAN, MERCER ISLAND, WA;                            |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>** CONTINUING DATA *****</b><br>This application is a CON of 12/365,516 02/04/2009 PAT 8731929<br>which is a CON of 11/747,547 05/11/2007 PAT 7502738<br>which is a DIV of 10/452,147 06/03/2003 PAT 7398209<br>which claims benefit of 60/384,388 06/03/2002               |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>** FOREIGN APPLICATIONS *****</b>                                                                                                                                                                                                                                           |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b><br>05/28/2014                                                                                                                                                                                                         |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Verified and Acknowledged <u>/MARTIN LERNER/</u><br>Examiner's Signature |                                                                                                                   | <input type="checkbox"/> Met after Allowance<br>Initials | <b>STATE OR COUNTRY</b><br>WA | <b>SHEETS DRAWINGS</b><br>7                                                                                                                                                                                                                                               | <b>TOTAL CLAIMS</b><br>1 | <b>INDEPENDENT CLAIMS</b><br>1 |
| <b>ADDRESS</b><br>Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206<br>UNITED STATES                                                                                                                           |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>TITLE</b><br>METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE                                                                                                                                                |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>FILING FEE RECEIVED</b><br>800                                                                                                                                                                                                                                              | FEES: Authority has been given in Paper<br>No. _____ to charge/credit DEPOSIT ACCOUNT<br>No. _____ for following: |                                                          |                               | <input type="checkbox"/> All Fees<br><input type="checkbox"/> 1.16 Fees (Filing)<br><input type="checkbox"/> 1.17 Fees (Processing Ext. of time)<br><input type="checkbox"/> 1.18 Fees (Issue)<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Credit |                          |                                |

**EAST Search History****EAST Search History (Prior Art)**

| Ref # | Hits | Search Query                                                                                                        | DBs                    | Default Operator | Plurals | Time Stamp       |
|-------|------|---------------------------------------------------------------------------------------------------------------------|------------------------|------------------|---------|------------------|
| L1    | 15   | (autonomous and executable and domain and agent).clm.                                                               | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 09:52 |
| L2    | 4    | (autonomous and executable and domain and agent and parser and speech and recognition and context).clm.             | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 09:54 |
| L3    | 490  | domain and agent and context and natural adj language and @ad<"20020603"                                            | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 09:56 |
| L4    | 135  | domain and agent and context and natural adj language and @ad<"20020603" and speech adj recognition                 | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 09:56 |
| L5    | 52   | domain and agent and context and natural adj language and @ad<"20020603" and speech adj recognition and G10L\$.qpc. | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 09:56 |
| L6    | 1    | ("6,513,006").PN.                                                                                                   | US-PGPUB; USPAT; USOCR | OR               | OFF     | 2016/05/09 10:02 |
| L7    | 6    | junqua.in. and agent and context                                                                                    | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 10:06 |
| L8    | 71   | junqua.in. and context                                                                                              | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 10:07 |
| L9    | 57   | junqua.in. and context and G10L\$.qpc.                                                                              | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 10:07 |
| L10   | 49   | junqua.in. and context and G10L\$.qpc. and @ad<"20020603"                                                           | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 10:07 |
| L11   | 20   | junqua.in. and context and G10L\$.qpc. and @ad<"20020603" and (domain or agent)                                     | US-PGPUB; USPAT        | OR               | ON      | 2016/05/09 10:08 |

**5/9/2016 10:11:50 AM**

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|--------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>KENNEWICK ET AL. |
|                                                                                                              | <b>Examiner</b><br><br>MARTIN LERNER           | <b>Art Unit</b><br><br>2657                                            |

| CPC- SEARCHED                       |           |          |
|-------------------------------------|-----------|----------|
| Symbol                              | Date      | Examiner |
| G10L 15/18, 15/183, 15/30, 2015/223 | 1/14/2016 | ML       |

| CPC COMBINATION SETS - SEARCHED |      |          |
|---------------------------------|------|----------|
| Symbol                          | Date | Examiner |
|                                 |      |          |

| US CLASSIFICATION SEARCHED |                           |           |          |
|----------------------------|---------------------------|-----------|----------|
| Class                      | Subclass                  | Date      | Examiner |
| 704                        | 231, 257, 270, 270.1, 275 | 1/14/2016 | ML       |

| SEARCH NOTES                |           |          |
|-----------------------------|-----------|----------|
| Search Notes                | Date      | Examiner |
| EAST Search Attached        | 1/14/2016 | ML       |
| Parent Applications Checked | 1/14/2016 | ML       |
| EAST Search Attached        | 5/17/2016 | ML       |

| INTERFERENCE SEARCH     |                         |      |          |
|-------------------------|-------------------------|------|----------|
| US Class/<br>CPC Symbol | US Subclass / CPC Group | Date | Examiner |
|                         |                         |      |          |

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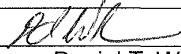
|                                                                                                                                                                                  |                        |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| <b>Request for<br/>Continued Examination (RCE)<br/>Transmittal</b><br><br>Address to:<br>Mail Stop RCE<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, VA 22313-1450 | Application Number     | 14/278,627-Conf. #7986 |
|                                                                                                                                                                                  | Filing Date            | May 15, 2014           |
|                                                                                                                                                                                  | First Named Inventor   | Robert A. Kennewick    |
|                                                                                                                                                                                  | Art Unit               | 2651                   |
|                                                                                                                                                                                  | Examiner Name          | M. Lerner              |
|                                                                                                                                                                                  | Attorney Docket Number | N0484.71158US09        |

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C 371, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO on page 2.)

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
- ii. ☐ Other \_\_\_\_\_
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- iii. ☐ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other \_\_\_\_\_
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other \_\_\_\_\_
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- a. ☐ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 23/2825.
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other \_\_\_\_\_
- b. ☐ Check in the amount of \$ \_\_\_\_\_ enclosed
- c. ☒ Payment by credit card (Form PTO-2038 enclosed)

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.****SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

|                   |                                                                                     |                  |                 |
|-------------------|-------------------------------------------------------------------------------------|------------------|-----------------|
| Signature         |  | Date             | August 23, 2016 |
| Name (Print/Type) | Daniel T. Wehner, Ph.D.                                                             | Registration No. | 63,480          |

**CERTIFICATE OF MAILING OR TRANSMISSION**

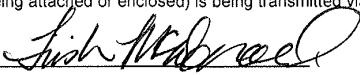
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

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|-------------------|--|------|--|
| Signature         |  |      |  |
| Name (Print/Type) |  | Date |  |

**Certificate of Electronic Filing Under 37 CFR 1.8**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: August 23, 2016

Signature: 

4939787.1

Docket No.: N0484.71158US09  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

First Named Inventor: Robert A. Kennewick  
Application No.: 14/278,627  
Confirmation No.: 7986  
Filed: May 15, 2014  
For: SYSTEM AND METHOD FOR PROCESSING NATURAL  
LANGUAGE UTTERANCES  
Examiner: M. Lerner  
Art Unit: 2657

|                                                                                                                                                                                                       |                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Certificate of Electronic Filing Under 37 CFR 1.8</b>                                                                                                                                              |                                                                                               |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                                                                               |
| Dated: August 23, 2016                                                                                                                                                                                | Signature:  |

**AMENDMENT FILED WITH REQUEST FOR CONTINUED EXAMINATION**

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INTRODUCTORY COMMENTS**

In response to the Final Office Action dated May 24, 2016, and pursuant to the Request for Continued Examination (RCE) filed herewith, please amend the above-identified U.S. patent application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 5 of this paper.

4820658.2

### AMENDMENTS TO THE CLAIMS

1. (Currently amended) A system responsive to a user generated natural language speech utterance, comprising:

a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands;

a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance;

a parser configured to:

determine, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond;

determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance, the determined scores, and a context associated with the natural language utterance;

select at least one of the plurality of domain agents based, at least in part, on the determined domain; and

provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents.

2. (Previously presented) The system of claim 1, wherein the parser is further configured to generate the at least one query and/or command based on the natural language utterance.

3. (Previously presented) The system of claim 2, wherein the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

4. (Currently amended) The system of claim 1, ~~wherein the parser is further configured to determine a score for each of a plurality of possible domains, and wherein determining the domain for the natural language utterance comprises determining the domain based, at least in part, on the scores for the plurality of possible domains, wherein determining a score for at least two of the particular domains comprises determining one or more of the scores is determined using based, at least in part, on information selected from the group consisting of one or more profiles of the user, data content associated with one or more of the plurality of domain agents, and one or more contexts.~~

5. (Currently amended) A method for responding to a user generated natural language speech utterance, the method comprising:

recognizing, by a speech recognition engine, one or more words in the user generated natural language speech utterance;

~~determining, by a parser, for the natural language speech utterance, a score for each of at least two particular domains for which a plurality of autonomous executable domain agents are configured to respond;~~

~~determining by a parser, a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance, the determined scores, and a context associated with the natural language utterance;~~

~~selecting at least one of [[a]] the plurality of autonomous executable domain agents based, at least in part, on the determined domain, wherein each of the plurality of domain agents is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is capable of responding to the queries and/or commands;~~

~~providing at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents.~~

6. (Previously presented) The method of claim 5, further comprising generating, by the parser, the at least one query and/or command based on the natural language utterance.

7. (Previously presented) The method of claim 6, wherein the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

8. (Currently amended) The method of claim 5, ~~further comprising:~~  
~~determining, by the parser, a score for each of a plurality of possible domains, and wherein~~  
~~determining a domain for the user generated natural language utterance based on the~~  
~~recognized one or more words of the natural language utterance and a context associated with the~~  
~~natural language utterance comprises determining the domain based, at least in part, on the scores~~  
~~for the plurality of possible domains, wherein determining a score for at least two of the particular~~  
~~domains comprises determining one or more of the scores is determined using based, at least in part,~~  
~~on information selected from the group consisting of one or more profiles of the user, data content~~  
~~associated with one or more of the plurality of domain agents, and one or more contexts.~~

### REMARKS

In response to the Final Office Action dated May 24, 2016, and pursuant to the RCE filed herewith, the Assignee respectfully requests reconsideration. To further the prosecution of this application, each of the rejections set forth in the Office Action has been carefully considered and is addressed below. Claims 1-8 were previously pending in this application. By this amendment, claims 1, 4, 5, and 8 have been amended. As a result, claims 1-8 are pending for examination with claims 1 and 5 being independent. No new matter has been added.

I. Claim Rejections under 35 U.S.C. §103

The Office Action rejects claims 1-8 (including independent claims 1 and 5) under 35 U.S.C. §103(a) as purportedly being obvious over U.S. Patent No. 6,523,061 (“Halverson”) in view of U.S. Patent No. 6,513,006 (“Howard”). The Assignee respectfully requests reconsideration.

A. Independent Claim 1

Claim 1 recites, “... a parser configured to: **determine, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond; determine a domain for the user generated natural language utterance based on** the recognized one or more words of the natural language utterance, **the determined scores**, and a context associated with the natural language utterance ... (emphasis added).” The purported combination of Halverson and Howard fails to disclose or suggest at least the above-highlighted portions of claim 1.

In rejecting dependent claims 4 and 8, the Office Action concedes that Halverson fails to teach determining a score for each of a plurality of possible domains and determining the domain based on the scores for the plurality of possible domains, but asserts that Howard provides this teaching (Office Action, pages 9-10). The Assignee respectfully disagrees that Howard describes determining a score for multiple domains and determining a domain based, at least in part, on the determined scores.

The scoring described in Howard relates to parsing a user’s utterance for natural language understanding rather than determining a score for each of at least two particular domains for which

a plurality of autonomous executable domain agents are configured to respond, as recited in claim 1. In particular, Howard describes processing text (e.g., a speech recognition result) to identify and generate tag candidates for topics in the text (Howard, Col. 8, lines 50-54). Heuristics are used to generate scores for the tag candidates and the scores are used to select the N-best tag candidates (Howard, Col. 9, line 61 – Col. 10, line 10). Accordingly, Howard does not disclose or suggest determining a score for each of at least two particular domains for which a plurality of autonomous executable domain agents are configured to respond. Rather, Howard describes generating scores during a natural language parsing process to discover topics in the input text (Howard, Col. 10, lines 7-13).

For at least these reasons, claim 1 patentably distinguishes over the purported combination of Halverson and Howard, and it is respectfully requested that the rejection under 35 U.S.C. § 103 be withdrawn. Claims 2-4 depend from claim 1 and each patentably distinguish over Halverson and Howard for at least the same reasons.

B. Independent Claim 5

Claim 5 recites, “**determining, for the natural language speech utterance, a score for each of at least two particular domains for which a plurality of autonomous executable domain agents are configured to respond; determining by a parser, a domain for the user generated natural language utterance based on** the recognized one or more words of the natural language utterance, **the determined scores**, and a context associated with the natural language utterance ... (emphasis added).”

As should be appreciated from the foregoing discussion, claim 5 patentably distinguishes over the purported combination of Halverson and Howard and it is respectfully requested that the rejection under 35 U.S.C. § 103 be withdrawn. Claims 6-8 depend from claim 5 and each patentably distinguish over Halverson and Howard for at least the same reasons.

II. Additional Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, the Assignee believes it is unnecessary at this time to argue the allowability

of each of the dependent claims individually. The Assignee does not, however, necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor does the Assignee concur that the basis for the rejection of any of the dependent claims is proper. Therefore, the Assignee reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

**CONCLUSION**

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A Notice of Allowance is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Assignee hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. N0484.71158US09, from which the undersigned is authorized to draw.

Dated: August 23, 2016

Respectfully submitted,

By



Daniel T. Wehner, Ph.D.

Registration No.: 63,480

WOLF, GREENFIELD & SACKS, P.C.

600 Atlantic Avenue

Boston, Massachusetts 02210-2206

617.646.8000

| Electronic Patent Application Fee Transmittal      |                 |                                                                                                                 |               |                             |
|----------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|
| <b>Application Number:</b>                         |                 | 14278627                                                                                                        |               |                             |
| <b>Filing Date:</b>                                |                 | 15-May-2014                                                                                                     |               |                             |
| <b>Title of Invention:</b>                         |                 | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |               |                             |
| <b>First Named Inventor/Applicant Name:</b>        |                 | ROBERT A. KENNEWICK                                                                                             |               |                             |
| <b>Filer:</b>                                      |                 | Daniel T. Wehner/Trish McDonald                                                                                 |               |                             |
| <b>Attorney Docket Number:</b>                     |                 | N0484.71158US09                                                                                                 |               |                             |
| Filed as Large Entity                              |                 |                                                                                                                 |               |                             |
| <b>Filing Fees for Utility under 35 USC 111(a)</b> |                 |                                                                                                                 |               |                             |
| <b>Description</b>                                 | <b>Fee Code</b> | <b>Quantity</b>                                                                                                 | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                               |                 |                                                                                                                 |               |                             |
| <b>Pages:</b>                                      |                 |                                                                                                                 |               |                             |
| <b>Claims:</b>                                     |                 |                                                                                                                 |               |                             |
| <b>Miscellaneous-Filing:</b>                       |                 |                                                                                                                 |               |                             |
| <b>Petition:</b>                                   |                 |                                                                                                                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>            |                 |                                                                                                                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>           |                 |                                                                                                                 |               |                             |
| <b>Extension-of-Time:</b>                          |                 |                                                                                                                 |               |                             |

| Description                       | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|-----------------------------------|----------|----------|--------|----------------------|
| <b>Miscellaneous:</b>             |          |          |        |                      |
| Request for Continued Examination | 1801     | 1        | 1200   | 1200                 |
| <b>Total in USD (\$)</b>          |          |          |        | <b>1200</b>          |

| Electronic Acknowledgement Receipt          |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>EFS ID:</b>                              | 26724782                                                                                                        |
| <b>Application Number:</b>                  | 14278627                                                                                                        |
| <b>International Application Number:</b>    |                                                                                                                 |
| <b>Confirmation Number:</b>                 | 7986                                                                                                            |
| <b>Title of Invention:</b>                  | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                                                                             |
| <b>Customer Number:</b>                     | 91337                                                                                                           |
| <b>Filer:</b>                               | Daniel T. Wehner/Trish McDonald                                                                                 |
| <b>Filer Authorized By:</b>                 | Daniel T. Wehner                                                                                                |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                                                                                 |
| <b>Receipt Date:</b>                        | 23-AUG-2016                                                                                                     |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                                                                     |
| <b>Time Stamp:</b>                          | 16:15:19                                                                                                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                                                                     |

**Payment information:**

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|----------------------------------------------------------------------------------------------------------------|-----------------------|
| Submitted with Payment                                                                                         | yes                   |
| Payment Type                                                                                                   | CARD                  |
| Payment was successfully received in RAM                                                                       | \$1200                |
| RAM confirmation Number                                                                                        | 082416INTEFSW16162800 |
| Deposit Account                                                                                                | 8543                  |
| Authorized User                                                                                                | Wolf Greenfield       |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: |                       |

37 CFR 1.21 (Miscellaneous fees and charges)

**File Listing:**

| Document Number | Document Description          | File Name                      | File Size(Bytes)/<br>Message Digest          | Multi Part /.zip | Pages (if appl.) |
|-----------------|-------------------------------|--------------------------------|----------------------------------------------|------------------|------------------|
| 1               | Miscellaneous Incoming Letter | N048471158US09-TRN-DTW.<br>PDF | 55723                                        | no               | 1                |
|                 |                               |                                | 2886d72c334d49b699c9182ada61b56ee6c<br>b3389 |                  |                  |

**Warnings:**

**Information:**

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|---|----------------------|--------------------------------|---------------------------------------------|----|---|
| 2 | Fee Worksheet (SB06) | N048471158US09-FEE-DTW.<br>PDF | 86727                                       | no | 1 |
|   |                      |                                | d1dda48a6965df719a7cc2bbe818d7c5f8<br>519db |    |   |

**Warnings:**

**Information:**

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|---|--------------------------------------------|--------------------------------|---------------------------------------------|----|---|
| 3 | Request for Continued Examination<br>(RCE) | N048471158US09-RCE-DTW.<br>PDF | 85931                                       | no | 1 |
|   |                                            |                                | e4e75ee7dd1fa7ffed16f26521f4359dfb0c<br>b04 |    |   |

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This is not a USPTO supplied RCE SB30 form.

**Information:**

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| 4 |  | N048471158US09-AMN-DTW.<br>PDF | 337385                                       | yes | 8 |
|   |  |                                | 0f9634ee84b162f67183106b6cd2c33e2db<br>1651f |     |   |

**Multipart Description/PDF files in .zip description**

|  | Document Description                               | Start | End |
|--|----------------------------------------------------|-------|-----|
|  | Amendment Submitted/Entered with Filing of CPA/RCE | 1     | 1   |
|  | Claims                                             | 2     | 4   |
|  | Applicant Arguments/Remarks Made in an Amendment   | 5     | 8   |
|  |                                                    |       |     |

**Warnings:**

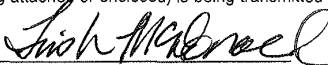
**Information:**

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| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06) | fee-info.pdf | 30840                                    | no | 2 |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |              | fabfd48caa7f211d4818c3fd1e09a0f196b6f8c5 |    |   |  |  |  |  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |              |                                          |    |   |  |  |  |  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |              |                                          |    |   |  |  |  |  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |              | 596606                                   |    |   |  |  |  |  |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                      |              |                                          |    |   |  |  |  |  |

|                                                                                             |                        |                        |
|---------------------------------------------------------------------------------------------|------------------------|------------------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br>(to be used for all correspondence after initial filing) | Application Number     | 14/278,627-Conf. #7986 |
|                                                                                             | Filing Date            | May 15, 2014           |
|                                                                                             | First Named Inventor   | Robert A. Kennewick    |
|                                                                                             | Art Unit               | 2657                   |
|                                                                                             | Examiner Name          | M. Lerner              |
| Total Number of Pages in This Submission                                                    | Attorney Docket Number | N0484.71158US09        |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input checked="" type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below):<br>Request for Continued Examination |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                                                                     |          |        |
|--------------------------------------------|-------------------------------------------------------------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C.                                                      |          |        |
| Signature                                  |  |          |        |
| Printed name                               | Daniel T. Wehner, Ph.D.                                                             |          |        |
| Date                                       | August 23, 2016                                                                     | Reg. No. | 63,480 |

|                                                                                                                                                                                                       |                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Certificate of Electronic Filing Under 37 CFR 1.8                                                                                                                                                     |                                                                                                 |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                                                                                 |
| Dated: August 23, 2016                                                                                                                                                                                | Signature:  |

| FEE TRANSMITTAL                                                                                                                                                                                                                                                                 |  | Complete if known    |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|------------------------|
| <input checked="" type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.<br><input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously. |  | Application Number   | 14/278,627-Conf. #7986 |
|                                                                                                                                                                                                                                                                                 |  | Filing Date          | May 15, 2014           |
|                                                                                                                                                                                                                                                                                 |  | First Named Inventor | Robert A. Kennewick    |
|                                                                                                                                                                                                                                                                                 |  | Examiner Name        | M. Lerner              |
|                                                                                                                                                                                                                                                                                 |  | Art Unit             | 2651                   |
| TOTAL AMOUNT OF PAYMENT                                                                                                                                                                                                                                                         |  | (\$)                 | 1,200.00               |
| Practitioner Docket No.                                                                                                                                                                                                                                                         |  | N0484.71158US09      |                        |

**METHOD OF PAYMENT** (check all that apply)

☐ Check   
 ☒ Credit Card   
 ☐ Money Order   
 ☐ None   
 ☐ Other (please identify): \_\_\_\_\_

☐ Deposit Account   
 Deposit Account Number: 23/2825   
 Deposit Account Name: Wolf, Greenfield & Sacks, P.C.

For the above-identified deposit account, the Director is hereby authorized to (check all that apply):

☐ Charge fee(s) indicated below   
 ☐ Charge fee(s) indicated below, **except for the filing fee**  
☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17   
 ☒ Credit any overpayment of fee(s)

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

**FEE CALCULATION**

**1. BASIC FILING, SEARCH, AND EXAMINATION FEES (U = undiscounted fee; S = small entity fee; M = micro entity fee)**

| Application Type | FILING FEES |        |        | SEARCH FEES |        |        | EXAMINATION FEES |        |        | Fees Paid (\$) |
|------------------|-------------|--------|--------|-------------|--------|--------|------------------|--------|--------|----------------|
|                  | U (\$)      | S (\$) | M (\$) | U (\$)      | S (\$) | M (\$) | U (\$)           | S (\$) | M (\$) |                |
| Utility          | 280         | 140*   | 70     | 600         | 300    | 150    | 720              | 360    | 180    |                |
| Design           | 180         | 90     | 45     | 120         | 60     | 30     | 460              | 230    | 115    |                |
| Plant            | 180         | 90     | 45     | 380         | 190    | 95     | 580              | 290    | 145    |                |
| Reissue          | 280         | 140    | 70     | 600         | 300    | 150    | 2,160            | 1,080  | 540    |                |
| Provisional      | 260         | 130    | 65     | 0           | 0      | 0      | 0                | 0      | 0      |                |

\* The \$140 small entity status filing fee for a utility application is further reduced to \$70 for a small entity status applicant who files the application via EFS-Web.

**2. EXCESS CLAIM FEES**

| Fee Description                                    | Undiscounted Fee (\$) | Small Entity Fee (\$) | Micro Entity Fee (\$) |
|----------------------------------------------------|-----------------------|-----------------------|-----------------------|
| Each claim over 20 (including Reissues)            | 80                    | 40                    | 20                    |
| Each independent claim over 3 (including Reissues) | 420                   | 210                   | 105                   |
| Multiple dependent claims                          | 780                   | 390                   | 195                   |

**Total Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**      **Multiple Dependent Claims**  
 \_\_\_\_\_ - 20 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_      **Fee (\$)**      **Fee Paid (\$)**  
 HP = highest number of total claims paid for, if greater than 20.

**Indep. Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**  
 \_\_\_\_\_ - 3 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_      **Fee Paid (\$)**  
 HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$400 (\$200 for small entity) (\$100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

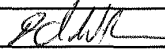
| Total Sheets | Extra Sheets | Number of each additional 50 or fraction thereof | Fee (\$) | Fees Paid (\$) |
|--------------|--------------|--------------------------------------------------|----------|----------------|
| _____        | _____        | _____                                            | _____    | _____          |

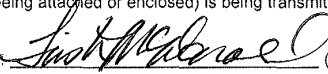
\_\_\_\_\_ - 100 = \_\_\_\_\_ /50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

**4. OTHER FEE(S)**

|                                                                                                                   |          |
|-------------------------------------------------------------------------------------------------------------------|----------|
| Non-English specification, \$130 fee (no small or micro entity discount)                                          |          |
| Non-electronic filing fee under 37 CFR 1.16(t) for a utility application, \$400 fee (\$200 small or micro entity) |          |
| Other (e.g., late filing surcharge): 1801 Request for continued examination (RCE) - 1st ...                       | 1,200.00 |

**SUBMITTED BY**

|                   |                                                                                     |                                   |        |                 |              |
|-------------------|-------------------------------------------------------------------------------------|-----------------------------------|--------|-----------------|--------------|
| Signature         |  | Registration No. (Attorney/Agent) | 63,480 | Telephone       | 617.646.8000 |
| Name (Print/Type) | Daniel T. Wehner, Ph.D.                                                             |                                   | Date   | August 23, 2016 |              |

|                                                                                                                                                                                                       |                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Certificate of Electronic Filing Under 37 CFR 1.8                                                                                                                                                     |                                                                                                   |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                                                                                   |
| Dated: August 23, 2016                                                                                                                                                                                | Signature:  ) |

4939786.1

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| PATENT APPLICATION FEE DETERMINATION RECORD<br>Substitute for Form PTO-875                                                                                                                                                                                                                                                                                                                                        |                                                                                          |                                                                                                                                                                                                                               |       | Application or Docket Number<br>14/278,627 |               | Filing Date<br>05/15/2014 |  | <input type="checkbox"/> To be Mailed |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------|---------------|---------------------------|--|---------------------------------------|--|
| ENTITY: <input checked="" type="checkbox"/> LARGE <input type="checkbox"/> SMALL <input type="checkbox"/> MICRO                                                                                                                                                                                                                                                                                                   |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
| APPLICATION AS FILED – PART I                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                          | (Column 2)                                                                                                                                                                                                                    |       |                                            |               |                           |  |                                       |  |
| FOR                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                          | NUMBER FILED                                                                                                                                                                                                                  |       | NUMBER EXTRA                               |               | RATE (\$)                 |  | FEE (\$)                              |  |
| <input type="checkbox"/> BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))                                                                                                                                                                                                                                                                                                                                               |                                                                                          | N/A                                                                                                                                                                                                                           |       | N/A                                        |               | N/A                       |  |                                       |  |
| <input type="checkbox"/> SEARCH FEE<br>(37 CFR 1.16(k), (j), or (m))                                                                                                                                                                                                                                                                                                                                              |                                                                                          | N/A                                                                                                                                                                                                                           |       | N/A                                        |               | N/A                       |  |                                       |  |
| <input type="checkbox"/> EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))                                                                                                                                                                                                                                                                                                                                         |                                                                                          | N/A                                                                                                                                                                                                                           |       | N/A                                        |               | N/A                       |  |                                       |  |
| TOTAL CLAIMS<br>(37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                          | minus 20 =                                                                                                                                                                                                                    |       | *                                          |               | X \$ =                    |  |                                       |  |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                                                                                                                                                                                                                                                                                                                                                            |                                                                                          | minus 3 =                                                                                                                                                                                                                     |       | *                                          |               | X \$ =                    |  |                                       |  |
| <input type="checkbox"/> APPLICATION SIZE FEE<br>(37 CFR 1.16(s))                                                                                                                                                                                                                                                                                                                                                 |                                                                                          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |       |                                            |               |                           |  |                                       |  |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                        |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
| * If the difference in column 1 is less than zero, enter "0" in column 2.                                                                                                                                                                                                                                                                                                                                         |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               | TOTAL                     |  |                                       |  |
| APPLICATION AS AMENDED – PART II                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                          | (Column 2)                                                                                                                                                                                                                    |       | (Column 3)                                 |               |                           |  |                                       |  |
| AMENDMENT                                                                                                                                                                                                                                                                                                                                                                                                         | 08/23/2016                                                                               | CLAIMS REMAINING AFTER AMENDMENT                                                                                                                                                                                              |       | HIGHEST NUMBER PREVIOUSLY PAID FOR         | PRESENT EXTRA | RATE (\$)                 |  | ADDITIONAL FEE (\$)                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | Total (37 CFR 1.16(j))                                                                   | * 9                                                                                                                                                                                                                           | Minus | ** 20                                      | = 0           | X \$80 =                  |  | 0                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | Independent (37 CFR 1.16(h))                                                             | * 2                                                                                                                                                                                                                           | Minus | ***3                                       | = 0           | X \$420 =                 |  | 0                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               | TOTAL ADD'L FEE           |  | 0                                     |  |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                          | (Column 2)                                                                                                                                                                                                                    |       | (Column 3)                                 |               |                           |  |                                       |  |
| AMENDMENT                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                          | CLAIMS REMAINING AFTER AMENDMENT                                                                                                                                                                                              |       | HIGHEST NUMBER PREVIOUSLY PAID FOR         | PRESENT EXTRA | RATE (\$)                 |  | ADDITIONAL FEE (\$)                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | Total (37 CFR 1.16(j))                                                                   | *                                                                                                                                                                                                                             | Minus | **                                         | =             | X \$ =                    |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | Independent (37 CFR 1.16(h))                                                             | *                                                                                                                                                                                                                             | Minus | ***                                        | =             | X \$ =                    |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               | TOTAL ADD'L FEE           |  |                                       |  |
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.<br>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".<br>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".<br>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. |                                                                                          |                                                                                                                                                                                                                               |       |                                            |               |                           |  |                                       |  |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**  
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

| Electronic Acknowledgement Receipt          |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>EFS ID:</b>                              | 26724782                                                                                                        |
| <b>Application Number:</b>                  | 14278627                                                                                                        |
| <b>International Application Number:</b>    |                                                                                                                 |
| <b>Confirmation Number:</b>                 | 7986                                                                                                            |
| <b>Title of Invention:</b>                  | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                                                                             |
| <b>Customer Number:</b>                     | 91337                                                                                                           |
| <b>Filer:</b>                               | Daniel T. Wehner/Trish McDonald                                                                                 |
| <b>Filer Authorized By:</b>                 | Daniel T. Wehner                                                                                                |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                                                                                 |
| <b>Receipt Date:</b>                        | 23-AUG-2016                                                                                                     |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                                                                     |
| <b>Time Stamp:</b>                          | 16:15:19                                                                                                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                                                                     |

### Payment information:

|                                                                                                                |                       |
|----------------------------------------------------------------------------------------------------------------|-----------------------|
| Submitted with Payment                                                                                         | yes                   |
| Payment Type                                                                                                   | CARD                  |
| Payment was successfully received in RAM                                                                       | \$1200                |
| RAM confirmation Number                                                                                        | 082416INTEFSW16162800 |
| Deposit Account                                                                                                | 232825                |
| Authorized User                                                                                                | Wolf Greenfield       |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: |                       |

37 CFR 1.21 (Miscellaneous fees and charges)

**File Listing:**

| Document Number | Document Description          | File Name                      | File Size(Bytes)/ Message Digest             | Multi Part /.zip | Pages (if appl.) |
|-----------------|-------------------------------|--------------------------------|----------------------------------------------|------------------|------------------|
| 1               | Miscellaneous Incoming Letter | N048471158US09-TRN-DTW.<br>PDF | 55723                                        | no               | 1                |
|                 |                               |                                | 2886d72c334d49b699c9182ada61b56ee6c<br>b3389 |                  |                  |

**Warnings:**

**Information:**

|   |                      |                                |                                             |    |   |
|---|----------------------|--------------------------------|---------------------------------------------|----|---|
| 2 | Fee Worksheet (SB06) | N048471158US09-FEE-DTW.<br>PDF | 86727                                       | no | 1 |
|   |                      |                                | d1dda48a6965df719a7cc2bbe818d7c5f8<br>519db |    |   |

**Warnings:**

**Information:**

|   |                                            |                                |                                             |    |   |
|---|--------------------------------------------|--------------------------------|---------------------------------------------|----|---|
| 3 | Request for Continued Examination<br>(RCE) | N048471158US09-RCE-DTW.<br>PDF | 85931                                       | no | 1 |
|   |                                            |                                | e4e75ee7dd1fa7ffed16f26521f4359dfb0c<br>b04 |    |   |

**Warnings:**

This is not a USPTO supplied RCE SB30 form.

**Information:**

|   |  |                                |                                              |     |   |
|---|--|--------------------------------|----------------------------------------------|-----|---|
| 4 |  | N048471158US09-AMN-DTW.<br>PDF | 337385                                       | yes | 8 |
|   |  |                                | 0f9634ee84b162f67183106b6cd2c33e2db<br>1651f |     |   |

**Multipart Description/PDF files in .zip description**

|  | Document Description                               | Start | End |
|--|----------------------------------------------------|-------|-----|
|  | Amendment Submitted/Entered with Filing of CPA/RCE | 1     | 1   |
|  | Claims                                             | 2     | 4   |
|  | Applicant Arguments/Remarks Made in an Amendment   | 5     | 8   |
|  |                                                    |       |     |

**Warnings:**

**Information:**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |              |                                          |    |   |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|------------------------------------------|----|---|--|--|--|--|
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06) | fee-info.pdf | 30840                                    | no | 2 |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |              | fabfd48caa7f211d4818c3fd1e09a0f196b6f8c5 |    |   |  |  |  |  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |              |                                          |    |   |  |  |  |  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |              |                                          |    |   |  |  |  |  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |              | 596606                                   |    |   |  |  |  |  |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                      |              |                                          |    |   |  |  |  |  |



# UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO.                                                                                                                            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------------------|-----------------------------|
| 14/278,627                                                                                                                                 | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09                 | 7986                        |
| 91337 7590 11/22/2016<br>Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206 |             |                      | EXAMINER<br>LERNER, MARTIN      |                             |
|                                                                                                                                            |             |                      | ART UNIT<br>2657                | PAPER NUMBER                |
|                                                                                                                                            |             |                      | NOTIFICATION DATE<br>11/22/2016 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents\_eOfficeAction@wolfgreenfield.com  
N0484\_eOfficeAction@WolfGreenfield.com  
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|                              |                                      |                                         |                                                  |
|------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>14/278,627 | <b>Applicant(s)</b><br>KENNEWICK ET AL. |                                                  |
|                              | <b>Examiner</b><br>MARTIN LERNER     | <b>Art Unit</b><br>2657                 | <b>AIA (First Inventor to File) Status</b><br>No |

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

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 23 August 2016.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1 to 8 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1 to 8 is/are rejected.

8) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

9) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☐ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_\_.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

4) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The present application is being examined under the pre-AIA first to invent provisions.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 to 8 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventors, at the time the application was filed, had possession of the claimed invention.

Independent claims 1 and 5 set forth a new limitation directed to “determine, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond”, which appears to present issues of new matter. Basically, Applicants’

Specification as originally filed does not actually disclose that each of at least two domains has a score for a speech utterance. The Specification, ¶[99], appears to be the best disclosure of this embodiment, where it is stated that a real-time scoring system may be applied to interpretation results in order to generate a domain or context score. Still, this does not actually say that there is more than one score produced for different domains or different domain agents. Applicants' amendment does not indicate where the support for this new limitation is provided in the originally-filed Specification. If Applicants believe that there is support for this new limitation, they should point out where it is found. Conceivably, one might argue that this scoring is inherent because each domain agent must determine its own score, and then the domain would be selected that has the best score, but this is not necessarily so. Details of this limitation are not actually disclosed by the originally-filed Specification, so support for this amendment is problematic under 35 U.S.C. §112, 1<sup>st</sup> ¶.

### ***Claim Rejections - 35 USC § 103***

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

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

Claims 1 to 8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Halverson et al.* (U.S. Patent No. 6,523,061) in view of *Reisman* (U.S. Patent No. 7,062,488).

Concerning independent claims 1 and 5, *Halverson et al.* discloses a system and method for speech-based navigation, comprising:

“a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands” – a statement “show me the movies starring John Wayne” is a command, and a question, “What is the weather in Miami?” is a query (“configured to respond to queries and/or commands”) (column 9, lines 47 to 56; column 14, lines 25 to 34); a resulting ICL goal expression is routed to appropriate agents including video-on-demand database agent 640, user interface (UI) agent 650, email agent 660, telephone agent 670, and VCR controller agent 680 (“a plurality of . . . domain agents”) (column 14, lines 25 to 64: Figure 6); implicitly, these agents are “autonomous executable” because each of them can perform its function (‘execute’) independently (‘autonomously’) due to this distributed agent architecture; moreover, each of these agents 640, 650, 660, 670 and 680 has “an area of expertise” corresponding to its “domain”, *i.e.*, a video-on-demand database agent 640 has an ‘expertise’ in a ‘domain’ of video-on-demand, an email agent 660 has an ‘expertise’ in a ‘domain’ of e-mail, a VCR controller agent 680 has ‘expertise’ in a ‘domain’ of programming a VCR;

“a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance” – navigation of electronic data is by means of spoken natural language requests (“the user generated natural language

speech utterance”) (column 1, lines 22 to 25); interpreting spoken natural language requests begins by receiving a user’s spoken request for information; speech recognition is performed using speech recognition engine 310 (“a speech recognition engine”); a speech recognition engine is provided with a vocabulary lexicon of likely words or phrases that the recognition engine can match against its analysis of acoustic signals for purposes of a given application (column 7, lines 18 to 45: Figures 3 to 4);

“a parser configured to: determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance” – natural language interpreter or parser 320 (“a parser configured to:”) linguistically parses and interprets the textual output of the speech recognition engine to determine both the meaning of the spoken words (semantic processing) and the grammar of the statement (syntactic processing) (column 7, line 64 to column 8, line 11: Figures 3 to 4); a lexicon for speech recognition engine 310 is dynamically adjusted to reflect a current user context as established by the preceding user inputs (“based on the recognized one or more words of the natural language utterance and a context associated with the natural language utterance”); if the user is engaged in a dialogue with the system about movie selection, the recognition engine’s vocabulary may preferably be adjusted to favor relevant words and phrases of a stored list of proper names for popular movie actors and directors; if the current dialogue involves selection and viewing of a sports event, the engine’s vocabulary might preferably be adjusted to favor a stored list of proper names of professional sports teams (column 7, lines 45 to 56); a functionality of each

client agent is made available to the agent community through registration of the client agent's capabilities with a facilitator; when a facilitator determines that the registered capabilities of one of its client agents will help satisfy a current goal or sub-goal thereof, the facilitator delegates that sub-goal to the client agent ("determine a domain for the user generated natural language utterance") in the form of a ICL (Interagent Communication Language) request (column 13, lines 22 to 45);

"select at least one of the plurality of domain agents based, at least in part, on the determined domain" – if the statement "Show me movies starring John Wayne" is spoken into a voice input device, the voice data for this request will be sent to facilitator 600, which in turn will ask natural language (NL) agent 620 and speech recognition agent 610 to interpret the query and return an interpretation in ICL format; the resulting ICL goal expression is then routed by the facilitator to appropriate agents ("select at least one of the plurality of domain agents based . . . on the determined domain") – in this case, video-on-demand database agent 640 – to execute the request (column 14, lines 28 to 37: Figure 6); other spoken requests, *e.g.*, a request for the current weather in New York City or for a stock quote, would eventually lead facilitator to invoke ("select") web database agent 630 to access the desired information from an appropriate Internet site; other spoken requests, *e.g.*, a request to view recent emails or access voice mail, would lead facilitator to invoke an appropriate email agent 660 or telephone agent 670 (column 14, lines 48 to 64: Figure 6);

"provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents" – request

processing logic 300 identifies and selects an appropriate online data source where the directed information (in this case, current weather reports for a given city) can be found; query construction logic 330 constructs a navigation query (“at least one query and/or command”) reflecting the interpretation; a navigation query is constructed so that it includes whatever content and structure is required in order to access desired information electronically from a particular database or data source of interest (column 8, line 50 to column 9, line 5: Figures 3 to 4); facilitator 600 will delegate requests to appropriate client agents in the community (column 14, lines 43 to 44); a request to record a televised program of interest might lead facilitator 600 to invoke web database agent 630 to return televised program schedule information, and then invoke VCR controller agent 680 to program the associated VCR unit to record the desired television program at the scheduled time (column 14, lines 58 to 64: Figure 6).

Concerning independent claims 1 and 5, *Halverson et al.* arguably could be construed to omit “a parser configured to: determine, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond” and to determine a domain for the user generated natural language utterance based on . . . “the determined scores”. Generally, *Halverson et al.* discloses that facilitator 600 invokes speech recognition agent 610 and natural language agent 620 to interpret a query, and then uses this interpretation to invoke (‘select’) an appropriate agent to execute a request. (Column 14, Lines 28 to 37: Figure 6) Arguably, a manner that a facilitator decides which agent to invoke would relate to some manner of ‘scoring’ a

query against a domain. Moreover, *Halverson et al.* discloses that speech recognition engine 310 and natural language parser 320 provide a lexicon that is dynamically adjusted to reflect a current user context as established by preceding user inputs, where a 'context' can relate to words relevant to movies for a movie context or words relevant to a sports event for a sports context. (Column 7, Lines 45 to 47: Figures 3 to 4) *Halverson et al.*, then, incorporates this context determination by speech recognition engine 310 into recognition agent 610 so that facilitator 600 invokes ('selects') an appropriate agent based both on a "domain", *e.g.*, movies, weather, stocks, emails, *etc.*, and on a "context", *i.e.*, whether preceding user input relates to movies or sports.

Concerning independent claims 1 and 5, though, even if these limitations are omitted by *Halverson et al.*, then they are taught by *Reisman*. Generally, *Reisman* teaches an apparatus and method for responding to a current user command associated with one of a plurality of tasks/domains. (Abstract) Specifically, a query is parsed to identify a search term or mapping request and any specified attributes, and is identified as being for task/domain *i*. (Column 8, Lines 60 to 63: Figure 2) Possible targets include likely hits T1, T2, *etc.*, for the particular query, and these targets are stored in association with ranking/weighting factors that may be used to score and order the preference of results. (Column 10, Lines 8 to 13: Figure 4) An unknown query is matched to a set of task/domains, and relative probabilities are assigned based on frequency of positive feedback. (Column 11, Lines 23 to 38) Here, Figure 4 shows Tasks  $T = 1$  to  $n$ , and raw scores and probabilities of a task/domain for each of the Tasks 1 to  $n$ , *e.g.*, a Raw Score  $Sa1T1$  and a Probability for a Task/Domain of  $Pa1T1$

for Task  $T = 1$ . Feedback heuristics are used to rank the domains (or vocabularies) most commonly associated with a specific query. (Column 13, Lines 64 to 66)

*Reisman*, then, teaches a parser configured to parse a query and to rank a task/domain from a plurality of tasks/domains based on a score. (Column 9, Lines 15 to 56: Figure 3: Steps S200 and S208) That is, a plurality of at least two task/domains are scored in order to rank these task/domains. This procedure is applied to natural language input. (Column 13, Lines 61 to 63; Column 14, Lines 45 to 50) Voice recognition of a request is noted. (Column 18, Lines 27 to 31) Additionally, *Reisman* teaches a task/domain is determined based upon cumulative feedback data gathered from multiple users during previous operations, by tracking individual behavior for a particular user, by inferring a task/domain from current and previous user behavior, and from user history. (Column 4, Lines 15 to 31; Column 5, Lines 23 to 37; Column 7, Lines 36 to 41) This current and previous user history is equivalent to “a context associated with the natural language” query. So, *Reisman* selects a task/domain based on scores and a context of a natural language query. An objective is to improve an ability to respond accurately to user commands. (Column 1, Lines 7 to 11) It would have been obvious to one having ordinary skill in the art to rank domains based upon a score for each of at least two domains and a context associated with a natural language query as taught by *Reisman* for selecting a client agent for a natural language utterance of *Halverson et al.* in order to improve an ability to accurately respond to user commands.

Concerning claims 2 and 6, *Halverson et al.* discloses constructing a navigation query from a natural language utterance. (Abstract; Column 4, Line 63 to Column 5, Line 15; Figure 1*b*) *Reisman* teaches a procedure that is applied to natural language input, too. (Column 13, Lines 61 to 63; Column 14, Lines 45 to 50)

Concerning claims 3 and 7, *Halverson et al.* discloses at least one request that comprises “a plurality of queries and/or commands” for an embodiment of a request to record a televised program of interest, where facilitator 600 invokes a web database agent 630 to return televised program schedule information, and then invokes VCR controller agent 680 to program the associated VCR unit to record the desired television program at the scheduled time. (Column 14, Lines 58 to 64; Figure 6) So, a user’s request to record a televised program of interest involves two queries and/or commands (“a plurality of queries and/or commands”): (1) to return schedule information and (2) to program the VCR. Similarly, *Reisman* teaches possible ways to deal with compound queries. This could be addressed by applying appropriate logic to table entries for each of their component elements, or by applying feedback data for each specific compound query. (Column 11, Lines 39 to 53) So, *Halverson et al.* and *Reisman* both disclose and teach “a plurality of queries and/or commands”.

Concerning claims 4 and 8, *Reisman* teaches that determining a current task/domain is on the basis of cumulative feedback data gathered from multiple users that is segregated in accordance with the plurality of task/domains. (Abstract) Broadly, feedback data segregated by task/domain involves “data content associated with one or more of the plurality of domain agents”. Determining a task/domain can be by inferring

a task/domain from current and previous user behavior. (Column 7, Lines 36 to 41)

Heuristic techniques are used to track individual behavior and analyze it, in order to break it up into word episodes that have evident similarity of usage, and separating task/domain episodes for a given user. (Column 7, Lines 55 to 63) The system seeks user history including current history (current session) and prior history to infer likely task/domains. (Column 9, Lines 18 to 31: Figure 3) Additional information about the user and his history and prior queries from the user/task/domain associated data would be used to try to rank the likely task/domain, where this information could indicate that the last 4 queries from the user were in task/domain j, which would raise the likelihood for j and lower it for others, and that this user has never made queries in domains other than j, k, l, and m, which would raise the likelihood for those task/domains and lower it for others. (Column 12, Lines 39 to 51: Figure 3) Characterization of previous user behavior and user history is equivalent to a 'profile' of a user ("one or more profiles of the user"). Moreover, current and previous user behavior for a current session is equivalent to "one or more contexts." That is, a 'context' relates to a user history of what went before the current session. "Context" can be defined as 'the parts of a written or spoken statement that precede or follow a specific word or passage, usually influencing its meaning'. See, *e.g.*, <http://www.dictionary.com/browse/context>.

### ***Response to Arguments***

Applicants' arguments filed 23 August 2016 have been considered but are moot in view of new grounds of rejection, necessitated by amendment.

Applicants amend independent claims 1 and 5 to set forth new limitations of a parser configured to: “determine, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond” and to determine a domain based on “the determined score”. Applicants then argue that these new limitations are not disclosed or taught by the prior art of *Halverson et al.* (U.S. Patent No. 6,523,061) and *Howard et al.* (U.S. Patent No. 6,513,006). Applicants allege that scoring as described by *Howard et al.* relates to parsing a user’s utterance for natural language understanding rather than determining a score for each of at least two particular domains for which domain agents are configured to respond. Applicants’ position, then, is that the prior art does not meet the new limitations of determining a score for each of at least two particular domains.

New grounds of rejection for claims 1 to 8 are set forth in this Office Action, and Applicants’ arguments are moot. Applicants’ new limitations are maintained to present issues of new matter under 35 U.S.C. §112, 1<sup>st</sup> ¶. Additionally, new grounds of rejection for claims 1 to 8 are being set forth under 35 U.S.C. §103(a) as obvious over *Halverson et al.* (U.S. Patent No. 6,523,061) in view of *Reisman* (U.S. Patent No. 7,062,488). Basically, *Reisman* is substituted for *Howard et al.* to address the new limitations in this Office Action.

Generally, it is observed that Applicants’ current claims are simply too broad given what is known in this field of the prior art. Today, it is common for intelligent personal assistants using natural language speech recognition, *e.g.*, Apple’s Siri,

Microsoft's Cortana, Google Assistant, and Amazon Echo, to operate in this manner according to domains to execute specific tasks. The groundwork for these artificial intelligence systems was derived work from SRI International, Inc., and others including Adam Cheyer. Applicants' Specification is fairly detailed in various embodiments that refine this artificial intelligence, and these details might provide allowable subject, but the current claims are simply overreaching in their breadth.

Applicants' new limitations present issues of new matter under 35 U.S.C. §112, 1<sup>st</sup> ¶. Basically, Applicants' Specification as originally filed does not actually say that there is "a score for each of at least two particular domains". Conceivably, Applicants' system and method could operate without generating "a score for each of at least two particular domains". That is, a domain could be determined by scoring words without scoring domains, and then the best scoring words could be mapping to a single domain. Applicants should point out where these new limitations are supported by the originally-filed Specification, or should amend and/or cancel these new limitations to be consistent with their Specification.

*Reisman* (U.S. Patent No. 7,062,488) teaches these new limitations of determining "a score for each of at least two domains", and determining a domain based on "the determined scores, and a context. . . ." Specifically, *Reisman* teaches ranking task/domains to score and order a preference of results. Figure 4 illustrates a ranking of Tasks  $T = 1$  to  $n$ , where tasks have scores  $S_{a1T1}$  and  $S_{axT1}$ , and a probability for a task/domain of  $P_{a1T1}$  and  $P_{axT1}$ . (Column 10, Lines 8 to 21: Figure 4) Ranking tasks/domains by score inherently involves "a score for each of at least two of the

particular domains” so that one task/domain can be placed above or below another task/domain in ranked order as illustrated in Figure 4. *Reisman*, then, reasonably teaches determining “a score for each of at least two of the particular domains” by scoring and ranking task/domains.

Moreover, *Reisman* may not expressly utilize the term “context” for determining a domain, but this is conceptually identical to determining a task/domain from current and previous user behavior, user history, and current session history. That is, a “context” of a request relates to a prior history of the request in a same session or related sessions for a given user or users. “Context” can be defined as ‘the parts of a written or spoken statement that precede or follow a specific word or passage, usually influencing its meaning’. See, e.g., <http://www.dictionary.com/browse/context>. So, *Reisman* teaches whatever might be omitted from independent claims 1 and 5 by *Halverson et al.*

Additionally, *Reisman* is directed to determining a task/domain for a query that is presented in natural language. (Column 13, Lines 61 to 63; Column 14, Lines 45 to 50) While *Reisman* is mainly directed to entering search terms on a browser, an application to voice recognition is noted. (Column 18, Lines 27 to 31) Given that *Halverson et al.*’s speech recognition agent converts spoken input into a query as textual output, *Reisman*’s apparatus and method could be readily incorporated to process a textual query derived by speech recognition of *Halverson et al.* Generally, *Reisman* teaches an objective of improving an ability to respond accurately to user commands. (Column 1, Lines 7 to 11)

Applicants' amendments necessitate these new grounds of rejection. Applicants' arguments are moot in view of these new grounds of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Papineni et al., Aridor et al., and Haszto et al. disclose related prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARTIN LERNER/  
Primary Examiner  
Art Unit 2657  
November 16, 2016

|                                   |                                       |  |                                                                |             |
|-----------------------------------|---------------------------------------|--|----------------------------------------------------------------|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>14/278,627 |  | Applicant(s)/Patent Under<br>Reexamination<br>KENNEWICK ET AL. |             |
|                                   | Examiner<br>MARTIN LERNER             |  | Art Unit<br>2657                                               | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                  | CPC Classification | US Classification |
|---|---|--------------------------------------------------|-----------------|-----------------------|--------------------|-------------------|
| * | A | US-7,062,488 B1                                  | 06-2006         | Reisman; Richard      | G06F17/30648       | ---               |
| * | B | US-6,246,981 B1                                  | 06-2001         | Papineni; Kishore A.  | G10L15/22          | 704/235           |
| * | C | US-6,636,848 B1                                  | 10-2003         | Aridor; Yariv         | G06F17/30864       | 707/728           |
| * | D | US-6,192,338 B1                                  | 02-2001         | Haszto; Edward Dennis | G10L15/30          | 704/257           |
|   | E | US-                                              |                 |                       |                    |                   |
|   | F | US-                                              |                 |                       |                    |                   |
|   | G | US-                                              |                 |                       |                    |                   |
|   | H | US-                                              |                 |                       |                    |                   |
|   | I | US-                                              |                 |                       |                    |                   |
|   | J | US-                                              |                 |                       |                    |                   |
|   | K | US-                                              |                 |                       |                    |                   |
|   | L | US-                                              |                 |                       |                    |                   |
|   | M | US-                                              |                 |                       |                    |                   |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | CPC Classification |
|---|---|--------------------------------------------------|-----------------|---------|------|--------------------|
|   | N |                                                  |                 |         |      |                    |
|   | O |                                                  |                 |         |      |                    |
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|   | R |                                                  |                 |         |      |                    |
|   | S |                                                  |                 |         |      |                    |
|   | T |                                                  |                 |         |      |                    |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|-------------------------------------------------------------------------------------------|
|   | U |                                                                                           |
|   | V |                                                                                           |
|   | W |                                                                                           |
|   | X |                                                                                           |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

## EAST Search History

## EAST Search History (Prior Art)

| Ref # | Hits  | Search Query                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DBs                    | Default Operator | Plurals | Time Stamp       |
|-------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|---------|------------------|
| L1    | 6203  | domain with score                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:00 |
| L2    | 25687 | domain with scoreand speech.ab.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:01 |
| L3    | 211   | domain with score and speech.ab.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:01 |
| L4    | 13    | domain with score and speech.ab. and @ad< "20020603"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:01 |
| L5    | 21    | domain with score and G10L15\$.cpc. and @ad< "20020603"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:02 |
| L6    | 0     | domain with scoring and G10L15\$.cpc. and @ad< "20020603"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:05 |
| L7    | 83    | domain with score and G06F\$.cpc. and @ad< "20020603"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 16:07 |
| L8    | 18    | ("20010041980"   "20020049805"   "20020065568"   "20020069059"   "20020124050"   "20030064709"   "20070050191"   "20080115163"   "20080177530"   "20080189110"   "20100286985"   "5500920"   "5533108"   "5537436"   "5557667"   "5590039"   "5617407"   "5675629").pn.                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 17:06 |
| L9    | 1     | "7502738".pn.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB; USPAT        | OR               | ON      | 2016/08/26 17:08 |
| L10   | 163   | ("20010041980"   "20020049805"   "20020065568"   "20020082911"   "20020120609"   "20020124050"   "20020143535"   "20020188602"   "20020198714"   "20030014261"   "20030112267"   "20030182132"   "20040025115"   "20040044516"   "20040166832"   "20040193420"   "20040199375"   "20050021334"   "20050021826"   "20050114116"   "20070033005"   "20070038436"   "20070050191"   "20080091406"   "4430669"   "5155743"   "5274560"   "5377350"   "5386556"   "5424947"   "5471318"   "5475733"   "5499289"   "5517560"   "5533108"   "5537436"   "5539744"   "5557667"   "5563937"   "5590039"   "5633922"   "5675629"   "5696965" | US-PGPUB; USPAT; USOCR | OR               | ON      | 2016/08/26 17:08 |

|     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                  |    |    |                     |
|-----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----|----|---------------------|
|     |    | "5708422"   "5721938"   "5722084"  <br>"5742763"   "5752052"   "5754784"  <br>"5761631"   "5794050"   "5799276"  <br>"5802510"   "5832221"   "5878385"  <br>"5878386"   "5895466"   "5902347"  <br>"5911120"   "5918222"   "5926784"  <br>"5933822"   "5953393"   "5963894"  <br>"5963940"   "5987404"   "5991721"  <br>"5995119"   "6009382"   "6014559"  <br>"6021384"   "6044347"   "6049602"  <br>"6058187"   "6078886"   "6081774"  <br>"6101241"   "6119087"   "6134235"  <br>"6144667"   "6160883"   "6173279"  <br>"6175858"   "6185535"   "6192110"  <br>"6192338"   "6195634"   "6195651"  <br>"6208972"   "6219346"   "6219643"  <br>"6233556"   "6233559"   "6246981"  <br>"6272455"   "6292767"   "6314402"  <br>"6366886"   "6385646"   "6393428"  <br>"6404878"   "6408272"   "6411810"  <br>"6415257"   "6418210"   "6420975"  <br>"6430285"   "6434523"   "6434524"  <br>"6442522"   "6446114"   "6453153"  <br>"6453292"   "6456711"   "6466654"  <br>"6498797"   "6499013").PN. OR ("6501833"  <br>"6501834"   "6513006"   "6523061"  <br>"6532444"   "6539348"   "6553372"  <br>"6556973"   "6560576"   "6567778"  <br>"6567797"   "6570555"   "6570964"  <br>"6574597"   "6574624"   "6594257"  <br>"6598018"   "6604077"   "6611692"  <br>"6614773"   "6615172"   "6629066"  <br>"6631346"   "6643620"   "6650747"  <br>"6691151"   "6721706"   "6735592"  <br>"6741931"   "6757718"   "6795808"  <br>"6901366"   "6937977"   "6944594"  <br>"6980092"   "6996531"   "7020609"  <br>"7027975"   "7062488"   "7092928"  <br>"7127400"   "7137126"   "7289606"  <br>"7376645"   "7398209"   "7424431").PN. |                                  |    |    |                     |
| L11 | 53 | 10 and domain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-<br>PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2016/08/26<br>17:09 |
| L12 | 44 | 10 and domain and @ad<"20020603"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-<br>PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2016/08/26<br>17:09 |
| L13 | 18 | 10 and domain and @ad<"20020603" and<br>(scor\$ or rank\$)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-<br>PGPUB;<br>USPAT;<br>USOCR | OR | ON | 2016/08/26<br>17:15 |

8/ 26/ 2016 5:16:38 PM

|                                                                                                              |                                                |                                                                        |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>KENNEWICK ET AL. |
|                                                                                                              | <b>Examiner</b><br><br>MARTIN LERNER           | <b>Art Unit</b><br><br>2657                                            |

| CPC- SEARCHED                       |           |          |
|-------------------------------------|-----------|----------|
| Symbol                              | Date      | Examiner |
| G10L 15/18, 15/183, 15/30, 2015/223 | 1/14/2016 | ML       |

| CPC COMBINATION SETS - SEARCHED |      |          |
|---------------------------------|------|----------|
| Symbol                          | Date | Examiner |
|                                 |      |          |

| US CLASSIFICATION SEARCHED |                           |           |          |
|----------------------------|---------------------------|-----------|----------|
| Class                      | Subclass                  | Date      | Examiner |
| 704                        | 231, 257, 270, 270.1, 275 | 1/14/2016 | ML       |

| SEARCH NOTES                |            |          |
|-----------------------------|------------|----------|
| Search Notes                | Date       | Examiner |
| EAST Search Attached        | 1/14/2016  | ML       |
| Parent Applications Checked | 1/14/2016  | ML       |
| EAST Search Attached        | 5/17/2016  | ML       |
| EAST Search Attached        | 11/16/2016 | ML       |

| INTERFERENCE SEARCH     |                         |      |          |
|-------------------------|-------------------------|------|----------|
| US Class/<br>CPC Symbol | US Subclass / CPC Group | Date | Examiner |
|                         |                         |      |          |

|  |  |
|--|--|
|  |  |
|--|--|

**EAST Search History****EAST Search History (Prior Art)**

| <b>Ref #</b> | <b>Hits</b> | <b>Search Query</b>                                         | <b>DBs</b>         | <b>Default Operator</b> | <b>Plurals</b> | <b>Time Stamp</b>   |
|--------------|-------------|-------------------------------------------------------------|--------------------|-------------------------|----------------|---------------------|
| L1           | 6203        | domain with score                                           | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:00 |
| L2           | 25687       | domain with scoreand speech.ab.                             | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:01 |
| L3           | 211         | domain with score and speech.ab.                            | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:01 |
| L4           | 13          | domain with score and speech.ab. and<br>@ad<"20020603"      | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:01 |
| L5           | 21          | domain with score and G10L15\$.cpc.<br>and @ad<"20020603"   | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:02 |
| L6           | 0           | domain with scoring and G10L15\$.cpc.<br>and @ad<"20020603" | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:05 |
| L7           | 83          | domain with score and G06F\$.cpc. and<br>@ad<"20020603"     | US-PGPUB;<br>USPAT | OR                      | ON             | 2016/08/26<br>16:07 |

**8/ 26/ 2016 4:58:10 PM**

Docket No.: N0484.71158US09  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

First Named Inventor: Robert A. Kennewick  
Application No.: 14/278,627  
Confirmation No.: 7986  
Filed: May 15, 2014  
For: SYSTEM AND METHOD FOR PROCESSING NATURAL  
LANGUAGE UTTERANCES  
Examiner: M. Lerner  
Art Unit: 2657

|                                                                                                                                                                                                         |                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Certificate of Electronic Filing under 37 CFR §1.8</b>                                                                                                                                               |                                             |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office's electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                             |
| Dated: <u>March 22, 2017</u>                                                                                                                                                                            | Signature: <u>/Lynn Silva/</u> (Lynn Silva) |

**AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION UNDER**  
**37 C.F.R. § 1.111**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INTRODUCTORY COMMENTS**

In response to the Office Action dated November 22, 2016, please amend the above-identified U.S. patent application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 5 of this paper.

### AMENDMENTS TO THE CLAIMS

1. (Currently amended) A system responsive to a user generated natural language speech utterance, comprising:

a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands;

a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance;

a parser configured to:

receive from a system agent or an active domain agent of the plurality of autonomous executable domain agents, keyword and associated prior probabilities or fuzzy possibilities;

determine, for the natural language speech utterance, a score for each of at least two possible contexts, wherein the scores are determined based on the received keyword and associated prior probabilities or fuzzy possibilities of the particular domains for which the plurality of autonomous executable domain agents are configured to respond;

determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance[[,]] and the determined scores for each of the at least two possible contexts, and a context associated with the natural language utterance;

select at least one of the plurality of domain agents based, at least in part, on the determined domain; and

provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents,

wherein each of the selected at least one of the plurality of domain agents is configured to create one or more queries based on the at least one query and/or command and send the one or more queries in an asynchronous manner to one or more local or external information sources.

2. (Previously presented) The system of claim 1, wherein the parser is further configured to generate the at least one query and/or command based on the natural language utterance.

3. (Previously presented) The system of claim 2, wherein the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

4. (Currently amended) The system of claim 1, wherein one or more of the selected at least one of the plurality of domain agents is further configured to create duplicate queries and send the duplicate queries in an asynchronous manner to different information sources ~~determining a score for at least two of the particular domains comprises determining one or more of the scores based, at least in part, on information selected from the group consisting of one or more profiles of the user, data content associated with one or more of the plurality of domain agents, and one or more contexts.~~

5. (Currently amended) A method for responding to a user generated natural language speech utterance, the method comprising:

recognizing, by a speech recognition engine, one or more words in the user generated natural language speech utterance;

receiving, at a parser, keyword and associated prior probabilities or fuzzy possibilities from a system agent or an active domain agent of a plurality of autonomous executable domain agents;

determining, for the natural language speech utterance, a score for each of at least two possible contexts, wherein the scores are determined based on the received keyword and associated prior probabilities or fuzzy possibilities ~~particular domains for which a plurality of autonomous executable domain agents are configured to respond;~~

determining by the[[a]] parser, a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance[[.]] and the

determined scores for each of the at least two possible contexts, and a context associated with the natural language utterance;

selecting at least one of the plurality of autonomous executable domain agents based, at least in part, on the determined domain, wherein each of the plurality of domain agents is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is capable of responding to the queries and/or commands;

providing at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents;

creating, by the selected at least one of the plurality of domain agents, one or more queries based on the at least one query and/or command;

sending, by the selected at least one of the plurality of domain agents, the one or more queries in an asynchronous manner to one or more local or external information sources.

6. (Previously presented) The method of claim 5, further comprising generating, by the parser, the at least one query and/or command based on the natural language utterance.

7. (Previously presented) The method of claim 6, wherein the at least one query and/or command based on the natural language utterance comprises a plurality of queries and/or commands.

8. (Currently amended) The method of claim 5, wherein one or more of the selected at least one of the plurality of domain agents is further configured to create duplicate queries and send the duplicate queries in an asynchronous manner to different information sources ~~determining a score for at least two of the particular domains comprises determining one or more of the scores based, at least in part, on information selected from the group consisting of one or more profiles of the user, data content associated with one or more of the plurality of domain agents, and one or more contexts.~~

### **REMARKS**

In response to the Office Action dated November 22, 2016, the Assignee respectfully requests reconsideration. To further the prosecution of this application, each of the rejections set forth in the Office Action has been carefully considered and is addressed below. Claims 1-8 were previously pending in this application. By this amendment, claims 1, 4, 5, and 8 have been amended. As a result, claims 1-8 are pending for examination with claims 1 and 5 being independent. The application as presented is believed to be in condition for allowance. No new matter has been added.

#### **I. Claim Rejections under 35 U.S.C. §112**

The Office Action rejects claims 1-8 (including independent claims 1 and 5) under 35 U.S.C. §112(a) as allegedly being indefinite. In particular, the Office Action asserts that the limitation in each of claims 1 and 5 directed to determining, for the natural language speech utterance, a score for each of at least two of the particular domains for which the plurality of autonomous executable domain agents are configured to respond, allegedly lacks support in the specification. Without acceding to the propriety of the rejections, claim 1 has been amended to recite, *inter alia*,

receive from a system agent or an active domain agent of the plurality of autonomous executable domain agents, keyword and associated prior probabilities or fuzzy possibilities;

determine, for the natural language speech utterance, a score for each of at least two possible contexts, wherein the scores are determined based on the received keyword and associated prior probabilities or fuzzy possibilities.

and claim 5 has been amended to recite, *inter alia*,

receiving, at a parser, keyword and associated prior probabilities or fuzzy possibilities from a system agent or an active domain agent of a plurality of autonomous executable domain agents;

determining, for the natural language speech utterance, a score for each of at least two possible contexts, wherein the scores are determined based on the received keyword and associated prior probabilities or fuzzy possibilities.

Support for these amendments is found at least at FIG. 2 and paragraphs [77]-[78] of the specification as originally filed. Each of claims 1 and 5 includes limitations that are fully supported

by the specification, and it is respectfully requested that the rejections under 35 U.S.C. §112 be withdrawn.

II. Claim Rejections under 35 U.S.C. §103

The Office Action rejects claims 1-8 (including independent claims 1 and 5) under 35 U.S.C. §103(a) as purportedly being obvious over U.S. Patent No. 6,523,061 (“Halverson”) in view of U.S. Patent No. 7,062,488 (“Reisman”). The Assignee respectfully requests reconsideration.

A. Independent Claim 1

Claim 1 recites, “wherein each of the selected at least one of the plurality of domain agents is configured to create one or more queries based on the at least one query and/or command and send the one or more queries in an asynchronous manner to one or more local or external information sources.” Support for this amendment is found at least at FIG. 4A and paragraphs [84]-[85], [89] and [97] of the specification as originally filed. The purported combination of Halverson and Reisman fails to disclose or suggest at least the above-quoted portion of claim 1.

The Office Action asserts that video-on-demand database agent 640, user interface (UI) agent 650, email agent 660, telephone agent 670 and VCR controller agent 680 in Halverson are a plurality of autonomous executable domain agents as recited in claim 1 (Office Action, page 4). However, Halverson fails to disclose or suggest that any of these agents are configured to create one or more queries based on at least one query and/or command provided to the agent and send the one or more queries in an asynchronous manner to one or more local or external sources as recited in claim 1. Rather, Halverson merely describes the agents as being configured to “execute the request” routed to the agent from the facilitator 600 (Halverson, Col. 14, lines 34-37). Additionally, although Halverson also describes agents as being able to issue requests to facilitator 600 for additional assistance, Halverson does not disclose or suggest that the requests are sent in an asynchronous manner, as required by claim 1. Reisman fails to cure this deficiency of Halverson.

For at least these reasons, claim 1 patentably distinguishes over the combination of Halverson and Reisman and it is respectfully requested that the rejection under 35 U.S.C. §103 be

withdrawn. Claims 2-4 depend from claim 1 and patentably distinguish over Halverson and Reisman for at least the same reasons.

B. Independent Claim 5

Claim 5 recites, “creating, by the selected at least one of the plurality of domain agents, one or more queries based on the at least one query and/or command; sending, by the selected at least one of the plurality of domain agents, the one or more queries in an asynchronous manner to one or more local or external information sources ...”

As should be appreciated from the foregoing discussion, claim 5 patentably distinguishes over the purported combination of Halverson and Reisman, and it is respectfully requested that the rejection under 35 U.S.C. §103 be withdrawn. Claims 6-8 depend from claim 5 and each patentably distinguishes over Halverson and Reisman for at least the same reasons.

III. Additional Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, the Assignee believes it is unnecessary at this time to argue the allowability of each of the dependent claims individually. The Assignee does not, however, necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor does the Assignee concur that the basis for the rejection of any of the dependent claims is proper. Therefore, the Assignee reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Assignee hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. N0484.71158US09, from which the undersigned is authorized to draw.

Dated: March 22, 2017

Respectfully submitted,

By\_\_\_\_/Daniel T. Wehner/\_\_\_\_\_  
Daniel T. Wehner, Ph.D.  
Registration No.: 63,480  
WOLF, GREENFIELD & SACKS, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2206  
617.646.8000

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                             |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------|-------------------------|
| <b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Docket Number (Optional)<br>N0484.71158US09 |                         |
| Application Number<br>14/278,627-Conf. #7986                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | Filed<br>May 15, 2014                       |                         |
| For<br><b>SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                                             |                         |
| Art Unit<br>2657                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | Examiner<br>M. Lerner                       |                         |
| This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.<br>The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                             |                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <u>Fee</u> | <u>Small Entity Fee</u>                     | <u>Micro Entity Fee</u> |
| <input checked="" type="checkbox"/> One month (37 CFR 1.17(a)(1))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | \$200      | \$100                                       | \$50                    |
| <input type="checkbox"/> Two months (37 CFR 1.17(a)(2))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \$600      | \$300                                       | \$150                   |
| <input type="checkbox"/> Three months (37 CFR 1.17(a)(3))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | \$1,400    | \$700                                       | \$350                   |
| <input type="checkbox"/> Four months (37 CFR 1.17(a)(4))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \$2,200    | \$1,100                                     | \$550                   |
| <input type="checkbox"/> Five months (37 CFR 1.17(a)(5))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \$3,000    | \$1,500                                     | \$750                   |
| <input type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.<br><input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29.<br>Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.<br><input type="checkbox"/> A check in the amount of the fee is enclosed.<br><input checked="" type="checkbox"/> Payment by credit card. <del>Form PTO-2038 is attached.</del><br><input type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account.<br><input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to<br>Deposit Account Number <u>23/2825</u> .<br><input checked="" type="checkbox"/> Payment made via EFS-Web. |            |                                             |                         |
| <b>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                             |                         |
| I am the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                                             |                         |
| <input type="checkbox"/> applicant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                                             |                         |
| <input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>63,480</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                             |                         |
| <input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number _____.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                             |                         |
| _____<br>/Daniel T. Wehner/<br>Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            | _____<br>March 22, 2017<br>Date             |                         |
| _____<br>Daniel T. Wehner, Ph.D.<br>Typed or printed name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            | _____<br>617.646.8000<br>Telephone Number   |                         |
| <b>NOTE:</b> This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                             |                         |

☒ \* Total of 1 forms are submitted.

**Certificate of Electronic Filing under 37 CFR §1.8**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office's electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 22, 2017

Signature: /Lynn Silva/ (Lynn Silva)

| Electronic Patent Application Fee Transmittal      |                 |                                                                                                                 |               |                             |
|----------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|
| <b>Application Number:</b>                         |                 | 14278627                                                                                                        |               |                             |
| <b>Filing Date:</b>                                |                 | 15-May-2014                                                                                                     |               |                             |
| <b>Title of Invention:</b>                         |                 | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |               |                             |
| <b>First Named Inventor/Applicant Name:</b>        |                 | ROBERT A. KENNEWICK                                                                                             |               |                             |
| <b>Filer:</b>                                      |                 | Daniel T. Wehner/Lynn Silva                                                                                     |               |                             |
| <b>Attorney Docket Number:</b>                     |                 | N0484.71158US09                                                                                                 |               |                             |
| Filed as Large Entity                              |                 |                                                                                                                 |               |                             |
| <b>Filing Fees for Utility under 35 USC 111(a)</b> |                 |                                                                                                                 |               |                             |
| <b>Description</b>                                 | <b>Fee Code</b> | <b>Quantity</b>                                                                                                 | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                               |                 |                                                                                                                 |               |                             |
| <b>Pages:</b>                                      |                 |                                                                                                                 |               |                             |
| <b>Claims:</b>                                     |                 |                                                                                                                 |               |                             |
| <b>Miscellaneous-Filing:</b>                       |                 |                                                                                                                 |               |                             |
| <b>Petition:</b>                                   |                 |                                                                                                                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>            |                 |                                                                                                                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>           |                 |                                                                                                                 |               |                             |
| <b>Extension-of-Time:</b>                          |                 |                                                                                                                 |               |                             |

| Description                       | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|-----------------------------------|----------|----------|--------|----------------------|
| Extension - 1 month with \$0 paid | 1251     | 1        | 200    | 200                  |
| <b>Miscellaneous:</b>             |          |          |        |                      |
| <b>Total in USD (\$)</b>          |          |          |        | <b>200</b>           |

| Electronic Acknowledgement Receipt          |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>EFS ID:</b>                              | 28707092                                                                                                        |
| <b>Application Number:</b>                  | 14278627                                                                                                        |
| <b>International Application Number:</b>    |                                                                                                                 |
| <b>Confirmation Number:</b>                 | 7986                                                                                                            |
| <b>Title of Invention:</b>                  | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                                                                             |
| <b>Customer Number:</b>                     | 91337                                                                                                           |
| <b>Filer:</b>                               | Daniel T. Wehner/Lynn Silva                                                                                     |
| <b>Filer Authorized By:</b>                 | Daniel T. Wehner                                                                                                |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                                                                                 |
| <b>Receipt Date:</b>                        | 22-MAR-2017                                                                                                     |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                                                                     |
| <b>Time Stamp:</b>                          | 15:31:50                                                                                                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                                                                     |

### Payment information:

|                                                                                                                                                                                      |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Submitted with Payment                                                                                                                                                               | yes                   |
| Payment Type                                                                                                                                                                         | CARD                  |
| Payment was successfully received in RAM                                                                                                                                             | \$200                 |
| RAM confirmation Number                                                                                                                                                              | 032317INTEFSW15333601 |
| Deposit Account                                                                                                                                                                      | 232825                |
| Authorized User                                                                                                                                                                      | Wolf Greenfield       |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>37 CFR 1.17 (Patent application and reexamination processing fees) |                       |

|                 |                                                       |                            |                                           |                  |                  |
|-----------------|-------------------------------------------------------|----------------------------|-------------------------------------------|------------------|------------------|
|                 |                                                       |                            |                                           |                  |                  |
| File Listing:   |                                                       |                            |                                           |                  |                  |
| Document Number | Document Description                                  | File Name                  | File Size(Bytes)/ Message Digest          | Multi Part /.zip | Pages (if appl.) |
| 1               | Miscellaneous Incoming Letter                         | N048471158US09-TRN-DTW.pdf | 24799                                     | no               | 1                |
|                 |                                                       |                            | 2a32d0a8c15d4d5352cd5f8f9578108ec3faeb4f  |                  |                  |
| Warnings:       |                                                       |                            |                                           |                  |                  |
| Information:    |                                                       |                            |                                           |                  |                  |
| 2               | Fee Worksheet (SB06)                                  | N048471158US09-FEE-DTW.pdf | 31904                                     | no               | 1                |
|                 |                                                       |                            | 28ea44954d569d897b488ffd2d32341947db524   |                  |                  |
| Warnings:       |                                                       |                            |                                           |                  |                  |
| Information:    |                                                       |                            |                                           |                  |                  |
| 3               |                                                       | N048471158US09-AMN-DTW.pdf | 46656                                     | yes              | 8                |
|                 |                                                       |                            | d188a693b5603868eb24f577661f190de73fe855e |                  |                  |
|                 | Multipart Description/PDF files in .zip description   |                            |                                           |                  |                  |
|                 | Document Description                                  |                            | Start                                     | End              |                  |
|                 | Amendment/Req. Reconsideration-After Non-Final Reject |                            | 1                                         | 1                |                  |
|                 | Claims                                                |                            | 2                                         | 4                |                  |
|                 | Applicant Arguments/Remarks Made in an Amendment      |                            | 5                                         | 8                |                  |
| Warnings:       |                                                       |                            |                                           |                  |                  |
| Information:    |                                                       |                            |                                           |                  |                  |
| 4               | Extension of Time                                     | N048471158US09-EXT-DTW.pdf | 23362                                     | no               | 1                |
|                 |                                                       |                            | 25b3cf39a395a8e4776bf3d295dca0b8cf69e8e   |                  |                  |
| Warnings:       |                                                       |                            |                                           |                  |                  |
| Information:    |                                                       |                            |                                           |                  |                  |
| 5               | Fee Worksheet (SB06)                                  | fee-info.pdf               | 30975                                     | no               | 2                |
|                 |                                                       |                            | 94a6e7e7e61658cf9d2031726cf350eda9f9e404  |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 157696 |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |        |

|                                                                                                    |                        |                        |
|----------------------------------------------------------------------------------------------------|------------------------|------------------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br><i>(to be used for all correspondence after initial filing)</i> | Application Number     | 14/278,627-Conf. #7986 |
|                                                                                                    | Filing Date            | May 15, 2014           |
|                                                                                                    | First Named Inventor   | Robert A. Kennewick    |
|                                                                                                    | Art Unit               | 2657                   |
|                                                                                                    | Examiner Name          | M. Lerner              |
| Total Number of Pages in This Submission                                                           | Attorney Docket Number | N0484.71158US09        |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input checked="" type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input checked="" type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/<br>Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts<br>under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a<br>Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation<br>Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication<br>to TC<br><input type="checkbox"/> Appeal Communication to Board<br>of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC<br>(Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input type="checkbox"/> Other Enclosure(s) (please<br>Identify below): |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                |          |        |
|--------------------------------------------|--------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C. |          |        |
| Signature                                  | /Daniel T. Wehner/             |          |        |
| Printed name                               | Daniel T. Wehner, Ph.D.        |          |        |
| Date                                       | March 22, 2017                 | Reg. No. | 63,480 |

|                                                                                                                                                                                                         |                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Certificate of Electronic Filing under 37 CFR §1.8</b>                                                                                                                                               |                                             |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office's electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                             |
| Dated: <u>March 22, 2017</u>                                                                                                                                                                            | Signature: <u>/Lynn Silva/</u> (Lynn Silva) |

| FEE TRANSMITTAL                                                                                                                                                                                                                                                      |              | Complete if known       |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------|------------------------|
| <input type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.<br><input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously. |              | Application Number      | 14/278,627-Conf. #7986 |
|                                                                                                                                                                                                                                                                      |              | Filing Date             | May 15, 2014           |
|                                                                                                                                                                                                                                                                      |              | First Named Inventor    | Robert A. Kennewick    |
|                                                                                                                                                                                                                                                                      |              | Examiner Name           | M. Lerner              |
|                                                                                                                                                                                                                                                                      |              | Art Unit                | 2657                   |
| TOTAL AMOUNT OF PAYMENT                                                                                                                                                                                                                                              | (\$ ) 200.00 | Practitioner Docket No. | N0484.71158US09        |

**METHOD OF PAYMENT** (check all that apply)

☐ Check   
 ☒ Credit Card   
 ☐ Money Order   
 ☐ None   
 ☐ Other (please identify): \_\_\_\_\_

☒ Deposit Account   
 Deposit Account Number: 23/2825   
 Deposit Account Name: Wolf, Greenfield & Sacks, P.C.

For the above-identified deposit account, the Director is hereby authorized to (check all that apply):

☐ Charge fee(s) indicated below   
 ☐ Charge fee(s) indicated below, **except for the filing fee**  
☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17   
 ☒ Credit any overpayment of fee(s)

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

**FEE CALCULATION**

**1. BASIC FILING, SEARCH, AND EXAMINATION FEES (U = undiscounted fee; S = small entity fee; M = micro entity fee)**

| Application Type | FILING FEES |        |        | SEARCH FEES |        |        | EXAMINATION FEES |        |        | Fees Paid (\$) |
|------------------|-------------|--------|--------|-------------|--------|--------|------------------|--------|--------|----------------|
|                  | U (\$)      | S (\$) | M (\$) | U (\$)      | S (\$) | M (\$) | U (\$)           | S (\$) | M (\$) |                |
| Utility          | 280         | 140*   | 70     | 600         | 300    | 150    | 720              | 360    | 180    |                |
| Design           | 180         | 90     | 45     | 120         | 60     | 30     | 460              | 230    | 115    |                |
| Plant            | 180         | 90     | 45     | 380         | 190    | 95     | 580              | 290    | 145    |                |
| Reissue          | 280         | 140    | 70     | 600         | 300    | 150    | 2,160            | 1,080  | 540    |                |
| Provisional      | 260         | 130    | 65     | 0           | 0      | 0      | 0                | 0      | 0      |                |

\* The \$140 small entity status filing fee for a utility application is further reduced to \$70 for a small entity status applicant who files the application via EFS-Web.

**2. EXCESS CLAIM FEES**

| Fee Description                                    | Undiscounted Fee (\$) | Small Entity Fee (\$) | Micro Entity Fee (\$) |
|----------------------------------------------------|-----------------------|-----------------------|-----------------------|
| Each claim over 20 (including Reissues)            | 80                    | 40                    | 20                    |
| Each independent claim over 3 (including Reissues) | 420                   | 210                   | 105                   |
| Multiple dependent claims                          | 780                   | 390                   | 195                   |

**Total Claims**    **Extra Claims**    **Fee (\$)**    **Fee Paid (\$)**    **Multiple Dependent Claims**  
8 - 20 or HP = 0 x \_\_\_\_\_ = \_\_\_\_\_    **Fee (\$)**    **Fee Paid (\$)**  
 HP = highest number of total claims paid for, if greater than 20.

**Indep. Claims**    **Extra Claims**    **Fee (\$)**    **Fee Paid (\$)**  
2 - 3 or HP = 0 x \_\_\_\_\_ = \_\_\_\_\_    **Fee Paid (\$)**  
 HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$400 (\$200 for small entity) (\$100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

| Total Sheets | Extra Sheets | Number of each additional 50 or fraction thereof | Fee (\$) | Fee Paid (\$) |
|--------------|--------------|--------------------------------------------------|----------|---------------|
| _____        | _____        | _____                                            | _____    | _____         |

\_\_\_\_\_ - 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

**4. OTHER FEE(S)**

Non-English specification, \$130 fee (no small or micro entity discount)

Non-electronic filing fee under 37 CFR 1.16(t) for a utility application, \$400 fee (\$200 small or micro entity)

Other (e.g., late filing surcharge): 1251 Extension for response within first month    200.00

| SUBMITTED BY      |                         |                                   |                |
|-------------------|-------------------------|-----------------------------------|----------------|
| Signature         | /Daniel T. Wehner/      | Registration No. (Attorney/Agent) | 63,480         |
| Name (Print/Type) | Daniel T. Wehner, Ph.D. | Telephone                         | 617.646.8000   |
|                   |                         | Date                              | March 22, 2017 |

|                                                                                                                                                                                                         |                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Certificate of Electronic Filing under 37 CFR §1.8                                                                                                                                                      |                                             |
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office's electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                             |
| Dated: March 22, 2017                                                                                                                                                                                   | Signature: <u>/Lynn Silva/</u> (Lynn Silva) |

5337309.1

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

|                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------|------------------------------------|----------------------------------|-----------|---------------------------------------|---------------------|
| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875                                                                                                                                                                                                                                                                                                                                           |                                                                                          |                                                                                                                                                                                                                               |                                  | Application or Docket Number<br><b>14/278,627</b> |                                    | Filing Date<br><b>05/15/2014</b> |           | <input type="checkbox"/> To be Mailed |                     |
| ENTITY: <input checked="" type="checkbox"/> LARGE <input type="checkbox"/> SMALL <input type="checkbox"/> MICRO                                                                                                                                                                                                                                                                                                             |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
| <b>APPLICATION AS FILED – PART I</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                          | (Column 2)                                                                                                                                                                                                                    |                                  |                                                   |                                    |                                  |           |                                       |                     |
| FOR                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                          | NUMBER FILED                                                                                                                                                                                                                  |                                  | NUMBER EXTRA                                      |                                    | RATE (\$)                        |           | FEE (\$)                              |                     |
| <input type="checkbox"/> BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))                                                                                                                                                                                                                                                                                                                                                         |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                               |                                    | N/A                              |           |                                       |                     |
| <input type="checkbox"/> SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m))                                                                                                                                                                                                                                                                                                                                                        |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                               |                                    | N/A                              |           |                                       |                     |
| <input type="checkbox"/> EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))                                                                                                                                                                                                                                                                                                                                                   |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                               |                                    | N/A                              |           |                                       |                     |
| TOTAL CLAIMS<br>(37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                          | minus 20 =                                                                                                                                                                                                                    |                                  | *                                                 |                                    | X \$ =                           |           |                                       |                     |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                          | minus 3 =                                                                                                                                                                                                                     |                                  | *                                                 |                                    | X \$ =                           |           |                                       |                     |
| <input type="checkbox"/> APPLICATION SIZE FEE<br>(37 CFR 1.16(s))                                                                                                                                                                                                                                                                                                                                                           |                                                                                          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |                                  |                                                   |                                    |                                  |           |                                       |                     |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))                                                                                                                                                                                                                                                                                                                                                  |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
| * If the difference in column 1 is less than zero, enter "0" in column 2.                                                                                                                                                                                                                                                                                                                                                   |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    | TOTAL                            |           |                                       |                     |
| <b>APPLICATION AS AMENDED – PART II</b>                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                          | (Column 2)                                                                                                                                                                                                                    |                                  | (Column 3)                                        |                                    |                                  |           |                                       |                     |
| AMENDMENT                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>03/22/2017</b>                                                                        |                                                                                                                                                                                                                               | CLAIMS REMAINING AFTER AMENDMENT |                                                   | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA                    | RATE (\$) |                                       | ADDITIONAL FEE (\$) |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | Total (37 CFR 1.16(j))                                                                   |                                                                                                                                                                                                                               | * 8                              | Minus                                             | ** 20                              | = 0                              | X \$80 =  |                                       | 0                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | Independent (37 CFR 1.16(h))                                                             |                                                                                                                                                                                                                               | * 2                              | Minus                                             | ***3                               | = 0                              | X \$420 = |                                       | 0                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    | TOTAL ADD'L FEE                  |           | <b>0</b>                              |                     |
| (Column 1)                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                          | (Column 2)                                                                                                                                                                                                                    |                                  | (Column 3)                                        |                                    |                                  |           |                                       |                     |
| AMENDMENT                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                          |                                                                                                                                                                                                                               | CLAIMS REMAINING AFTER AMENDMENT |                                                   | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA                    | RATE (\$) |                                       | ADDITIONAL FEE (\$) |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | Total (37 CFR 1.16(j))                                                                   |                                                                                                                                                                                                                               | *                                | Minus                                             | **                                 | =                                | X \$ =    |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | Independent (37 CFR 1.16(h))                                                             |                                                                                                                                                                                                                               | *                                | Minus                                             | ***                                | =                                | X \$ =    |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    | TOTAL ADD'L FEE                  |           |                                       |                     |
| <p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.<br/>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".<br/>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".<br/>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p> |                                                                                          |                                                                                                                                                                                                                               |                                  |                                                   |                                    |                                  |           |                                       |                     |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**  
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
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## NOTICE OF ALLOWANCE AND FEE(S) DUE

91337 7590 04/12/2017  
Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206

|                |              |
|----------------|--------------|
| EXAMINER       |              |
| LERNER, MARTIN |              |
| ART UNIT       | PAPER NUMBER |
| 2657           |              |

DATE MAILED: 04/12/2017

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 14/278,627      | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09     | 7986             |

TITLE OF INVENTION: METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE

| APPLN. TYPE    | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|---------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | UNDISCOUNTED  | \$960         | \$0                 | \$0                  | \$960            | 07/12/2017 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

91337 7590 04/12/2017  
Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

|                    |
|--------------------|
| (Depositor's name) |
| (Signature)        |
| (Date)             |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 14/278,627      | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09     | 7986             |

TITLE OF INVENTION: METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE

| APPLN. TYPE    | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|---------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | UNDISCOUNTED  | \$960         | \$0                 | \$0                  | \$960            | 07/12/2017 |

| EXAMINER       | ART UNIT | CLASS-SUBCLASS |
|----------------|----------|----------------|
| LERNER, MARTIN | 2657     | 704-257000     |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev. 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

**NOTE:** Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

**NOTE:** If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

**NOTE:** Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

**NOTE:** This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_



# UNITED STATES PATENT AND TRADEMARK OFFICE

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|                                                                                                                   |             |                      |                     |                  |
|-------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.                                                                                                   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 14/278,627                                                                                                        | 05/15/2014  | ROBERT A. KENNEWICK  | N0484.71158US09     | 7986             |
| 91337                                                                                                             | 7590        | 04/12/2017           |                     |                  |
| Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206 |             |                      |                     |                  |
| EXAMINER                                                                                                          |             |                      |                     |                  |
| LERNER, MARTIN                                                                                                    |             |                      |                     |                  |
| ART UNIT                                                                                                          |             | PAPER NUMBER         |                     |                  |
| 2657                                                                                                              |             |                      |                     |                  |

DATE MAILED: 04/12/2017

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

|                               |                                      |                                         |                                                  |
|-------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------------------|
| <b>Notice of Allowability</b> | <b>Application No.</b><br>14/278,627 | <b>Applicant(s)</b><br>KENNEWICK ET AL. |                                                  |
|                               | <b>Examiner</b><br>MARTIN LERNER     | <b>Art Unit</b><br>2657                 | <b>AIA (First Inventor to File) Status</b><br>No |

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

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 22 March 2017.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1 to 8. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
**Certified copies:**  
a) ☐ All    b) ☐ Some    \*c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

|                                                                                                            |                                                                                      |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 7. <input type="checkbox"/> Other _____                                              |
| 4. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____                      |                                                                                      |

### **EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance:

Independent claims 1 and 5 are allowable because the prior art of record does not disclose or reasonably suggest a system and method responsive to a user generated natural language speech utterance, comprising a plurality of autonomous executable domain agents, each of which is configured to respond to queries and/or commands within a particular domain, wherein the particular domain indicates an area of expertise within which the domain agent is configured to respond to the queries and/or commands, a speech recognition engine configured to recognize one or more words in the user generated natural language speech utterance, and a parser configured to receive from a system agent or an active domain agent of the plurality of autonomous executable domain agents, keyword and associated prior probabilities or fuzzy probabilities, determine for the natural language speech utterance, a score for each of at least two possible contexts, wherein the scores are determined based on the received keyword and associated prior probabilities or fuzzy probabilities, determine a domain for the user generated natural language utterance based on the recognized one or more words of the natural language utterance and determined scores for each of the at least two possible contexts, select at least one of the plurality of domain agents based, at least in part, on the determined domain, and provide at least one query and/or command based on the natural language utterance to the selected at least one of the plurality of domain agents, wherein each of the selected at least one of the plurality of

domain agents is configured to create one or more queries based on the at least one query and/or command and send the one or more queries in an asynchronous manner to one or more local or external information sources before Applicants' priority date of 03 June 2002.

*Halverson et al.* (U.S. Patent No. 6,523,061) appears to remain the best prior art before Applicants' priority date. However, *Halverson et al.* does not disclose determining a score for possible contexts based on a received keyword and associated prior or fuzzy probabilities, or that domain agents are configured to create and send queries in an asynchronous manner. *Halverson et al.* discloses that interpretation of natural language requests extracts words from voice data based on likely words or phrases from a lexicon that is dynamically adjusted to reflect a current user context. (Column 7, Lines 18 to 63) Moreover, *Halverson et al.* discloses that a natural language interpreter learns from past usage patterns. (Column 8, Lines 42 to 45) But *Halverson et al.* does not clearly disclose scoring context based on keywords and associated prior or fuzzy probabilities, or sending queries in an asynchronous manner. Even if scoring context based on keywords and associated prior probabilities is taught by *Reisman* (U.S. Patent No. 7,062,488), the prior art of record would still not disclose or reasonably suggest sending queries in an asynchronous manner.

Applicants' parent and related patents were reviewed, but an obviousness double patenting rejection does not appear appropriate given that the current claims are patentably distinct from any of these parent and related patents.

Any comments considered necessary by Applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **CONCLUSION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 14/278,627

Page 5

Art Unit: 2657

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARTIN LERNER/

Primary Examiner

Art Unit 2657

April 7, 2017

|                                   |                                       |  |                                                                |             |
|-----------------------------------|---------------------------------------|--|----------------------------------------------------------------|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>14/278,627 |  | Applicant(s)/Patent Under<br>Reexamination<br>KENNEWICK ET AL. |             |
|                                   | Examiner<br>MARTIN LERNER             |  | Art Unit<br>2657                                               | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                   | CPC Classification | US Classification |
|---|---|--------------------------------------------------|-----------------|------------------------|--------------------|-------------------|
| * | A | US-5,915,001 A                                   | 06-1999         | Uppaluru; Premkumar V. | H04M3/4938         | 379/88.17         |
| * | B | US-6,192,338 B1                                  | 02-2001         | Haszto; Edward Dennis  | G10L15/30          | 704/257           |
| * | C | US-6,785,651 B1                                  | 08-2004         | Wang; Kuansan          | G06F17/279         | 379/88.01         |
| * | D | US-6,950,793 B2                                  | 09-2005         | Ross; Steven I.        | G10L15/22          | 704/270           |
| * | E | US-7,058,565 B2                                  | 06-2006         | Gusler; Carl Phillip   | G10L15/26          | 379/88.01         |
| * | F | US-7,137,126 B1                                  | 11-2006         | Coffman; Daniel        | G10L15/22          | 704/200           |
| * | G | US-7,398,209 B2                                  | 07-2008         | Kennewick; Robert A.   | G10L15/22          | 704/255           |
| * | H | US-7,457,397 B1                                  | 11-2008         | Saylor; Michael J.     | H04M3/4938         | 379/88.17         |
| * | I | US-8,731,929 B2                                  | 05-2014         | Kennewick; Robert A.   | G10L15/22          | 704/246           |
| * | J | US-2002/0138266 A1                               | 09-2002         | Ross, Steven I.        | G10L15/1822        | 704/251           |
| * | K | US-2002/0173960 A1                               | 11-2002         | Ross, Steven I.        | G10L15/22          | 704/257           |
|   | L | US-                                              |                 |                        |                    |                   |
|   | M | US-                                              |                 |                        |                    |                   |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | CPC Classification |
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**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
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|   | U |                                                                                           |
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\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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## BIB DATA SHEET

CONFIRMATION NO. 7986

| SERIAL NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | FILING or 371(c)<br>DATE                                                                                          | CLASS                                                    | GROUP ART UNIT                | ATTORNEY DOCKET<br>NO.                                                                                                                                                                                                                                                    |                          |                                |
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| 14/278,627                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 05/15/2014                                                                                                        | 704                                                      | 2657                          | N0484.71158US09                                                                                                                                                                                                                                                           |                          |                                |
| <b>APPLICANTS</b><br>Nuance Communications, Inc., Burlington, MA;<br><b>INVENTORS</b><br>ROBERT A. KENNEWICK, BELLEVUE, WA;<br>DAVID LOCKE, REDMOND, WA;<br>MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;<br>MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;<br>RICHARD KENNEWICK, WOODINVILLE, WA;<br>TOM FREEMAN, MERCER ISLAND, WA;<br><b>** CONTINUING DATA *****</b><br>This application is a CON of 12/365,516 02/04/2009 PAT 8731929<br>which is a CON of 11/747,547 05/11/2007 PAT 7502738<br>which is a DIV of 10/452,147 06/03/2003 PAT 7398209<br>which claims benefit of 60/384,388 06/03/2002<br><b>** FOREIGN APPLICATIONS *****</b><br><b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b><br>05/28/2014 |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Verified and Acknowledged <u>/MARTIN LERNER/</u><br>Examiner's Signature                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                   | <input type="checkbox"/> Met after Allowance<br>Initials | <b>STATE OR COUNTRY</b><br>WA | <b>SHEETS DRAWINGS</b><br>7                                                                                                                                                                                                                                               | <b>TOTAL CLAIMS</b><br>1 | <b>INDEPENDENT CLAIMS</b><br>1 |
| <b>ADDRESS</b><br>Nuance Communications, Inc.<br>c/o Wolf, Greenfield & Sacks, P.C.<br>600 Atlantic Avenue<br>Boston, MA 02210-2206<br>UNITED STATES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>TITLE</b><br>METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                   |                                                          |                               |                                                                                                                                                                                                                                                                           |                          |                                |
| <b>FILING FEE RECEIVED</b><br>800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | FEES: Authority has been given in Paper<br>No. _____ to charge/credit DEPOSIT ACCOUNT<br>No. _____ for following: |                                                          |                               | <input type="checkbox"/> All Fees<br><input type="checkbox"/> 1.16 Fees (Filing)<br><input type="checkbox"/> 1.17 Fees (Processing Ext. of time)<br><input type="checkbox"/> 1.18 Fees (Issue)<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Credit |                          |                                |

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| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br>KENNEWICK ET AL. |  |
|                                                                                                                  | <b>Examiner</b><br>MARTIN LERNER           | <b>Art Unit</b><br>2657                                            |  |

| CPC    |  |     |  |       |      |            |
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| Symbol |  |     |  |       | Type | Version    |
| G10L   |  | 15  |  | 1822  | F    | 2013-01-01 |
| G10L   |  | 15  |  | 22    | I    | 2013-01-01 |
| Y10S   |  | 707 |  | 99933 | A    | 2013-01-01 |
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| NONE                                               |          | <b>Total Claims Allowed:</b> |                   |
| (Assistant Examiner)                               | (Date)   | 8                            |                   |
| /MARTIN LERNER/<br>Primary Examiner. Art Unit 2657 | 4/7/2017 | O.G. Print Claim(s)          | O.G. Print Figure |
| (Primary Examiner)                                 | (Date)   | 5                            | 1                 |

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| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br>KENNEWICK ET AL. |
|                                                                                                                  | <b>Examiner</b><br>MARTIN LERNER           | <b>Art Unit</b><br>2657                                            |

| US ORIGINAL CLASSIFICATION |                                   |          |  |  |  | INTERNATIONAL CLASSIFICATION |   |   |   |                      |             |  |  |  |  |
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| CLASS                      |                                   | SUBCLASS |  |  |  | CLAIMED                      |   |   |   |                      | NON-CLAIMED |  |  |  |  |
| 704                        |                                   | 257      |  |  |  | G                            | 1 | 0 | L | 15 / 18 (2013.01.01) |             |  |  |  |  |
| CROSS REFERENCE(S)         |                                   |          |  |  |  | G                            | 1 | 0 | L | 15 / 1822            |             |  |  |  |  |
|                            |                                   |          |  |  |  | G                            | 0 | 6 | F | 17 / 279             |             |  |  |  |  |
|                            |                                   |          |  |  |  | G                            | 0 | 6 | F | 17 / 30445           |             |  |  |  |  |
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| 704                        | 240                               |          |  |  |  |                              |   |   |   |                      |             |  |  |  |  |
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| NONE                                               |          | <b>Total Claims Allowed:</b> |                   |
|                                                    |          | 8                            |                   |
| (Assistant Examiner)                               | (Date)   |                              |                   |
| /MARTIN LERNER/<br>Primary Examiner. Art Unit 2657 | 4/7/2017 | O.G. Print Claim(s)          | O.G. Print Figure |
| (Primary Examiner)                                 | (Date)   | 5                            | 1                 |

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|------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br>KENNEWICK ET AL. |
|                                                                                                                  | <b>Examiner</b><br>MARTIN LERNER           | <b>Art Unit</b><br>2657                                            |

| <input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b> |          |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
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| Final                                                                                                                                                                                                                    | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
| 1                                                                                                                                                                                                                        | 1        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 2                                                                                                                                                                                                                        | 2        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 3                                                                                                                                                                                                                        | 3        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 4                                                                                                                                                                                                                        | 4        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 5                                                                                                                                                                                                                        | 5        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 6                                                                                                                                                                                                                        | 6        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 7                                                                                                                                                                                                                        | 7        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
| 8                                                                                                                                                                                                                        | 8        |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
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| NONE<br><br>(Assistant Examiner) _____ (Date) _____                                                |  | <b>Total Claims Allowed:</b><br>8 |                        |
| /MARTIN LERNER/<br>Primary Examiner. Art Unit 2657<br><br>(Primary Examiner) _____ (Date) 4/7/2017 |  | O.G. Print Claim(s)<br>5          | O.G. Print Figure<br>1 |

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| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>14278627 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>KENNEWICK ET AL. |
|                                                                                                              | <b>Examiner</b><br><br>MARTIN LERNER           | <b>Art Unit</b><br><br>2657                                            |

| CPC- SEARCHED                       |           |          |
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| Symbol                              | Date      | Examiner |
| G10L 15/18, 15/183, 15/30, 2015/223 | 1/14/2016 | ML       |
| G10L 15/1822                        | 4/7/2017  | ML       |
| G06F 17/279, 17/30445               | 4/7/2017  | ML       |

| CPC COMBINATION SETS - SEARCHED |      |          |
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| US CLASSIFICATION SEARCHED |                           |           |          |
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| Class                      | Subclass                  | Date      | Examiner |
| 704                        | 231, 257, 270, 270.1, 275 | 1/14/2016 | ML       |
| 704                        | 240                       | 4/7/2017  | ML       |
| 707                        | 755                       | 4/7/2017  | ML       |

| SEARCH NOTES                |            |          |
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| Search Notes                | Date       | Examiner |
| EAST Search Attached        | 1/14/2016  | ML       |
| Parent Applications Checked | 1/14/2016  | ML       |
| EAST Search Attached        | 5/17/2016  | ML       |
| EAST Search Attached        | 11/16/2016 | ML       |
| EAST Search Attached        | 4/7/2017   | ML       |

| INTERFERENCE SEARCH     |                         |          |          |
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| US Class/<br>CPC Symbol | US Subclass / CPC Group | Date     | Examiner |
| 704                     | 240, 257                | 4/7/2017 | ML       |
| 707                     | 755                     | 4/7/2017 | ML       |
| G10L                    | 15/18, 15/1822          | 4/7/2017 | ML       |
| G06F                    | 17/279, 17/30445        | 4/7/2017 | ML       |

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**EAST Search History****EAST Search History (Prior Art)**

| Ref # | Hits | Search Query                                                                                            | DBs             | Default Operator | Plurals | Time Stamp       |
|-------|------|---------------------------------------------------------------------------------------------------------|-----------------|------------------|---------|------------------|
| L1    | 1796 | keyword and agent and context and @ad<"20020603"                                                        | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:16 |
| L2    | 226  | keyword and agent and context and @ad<"20020603" and speech adj recognition                             | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:16 |
| L3    | 134  | keyword and agent and context and domain and @ad<"20020603" and speech adj recognition                  | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:16 |
| L4    | 3    | keyword with probability and agent and context and domain and @ad<"20020603" and speech adj recognition | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:18 |
| L5    | 103  | asynchronous with search adj engine                                                                     | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:20 |
| L6    | 10   | 5 and @ad<"20020603"                                                                                    | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:21 |
| L7    | 0    | G06F17/304448.cpc.                                                                                      | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:27 |
| L8    | 552  | G06F17/30448.cpc.                                                                                       | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:27 |
| L9    | 24   | 8 and @ad<"20020603"                                                                                    | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:28 |
| L10   | 2    | (keyword and agent and context and speech adj recognition).ab.                                          | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:30 |
| L11   | 108  | kennewick.in.                                                                                           | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:30 |
| L12   | 49   | kennewick.in. and asynchronous                                                                          | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:31 |
| L13   | 10   | kennewick.in. and asynchronous\$.clm.                                                                   | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:31 |
| L14   | 10   | kennewick.in. and (fuzzy and asynchronous\$).clm.                                                       | US-PGPUB; USPAT | OR               | ON      | 2017/04/06 14:32 |

**4/6/2017 2:35:33 PM**



**EAST Search History****EAST Search History (Prior Art)**

| Ref # | Hits | Search Query                                                | DBs                | Default Operator | Plurals | Time Stamp          |
|-------|------|-------------------------------------------------------------|--------------------|------------------|---------|---------------------|
| L1    | 65   | baldwin.in. and natural adj language                        | US-PGPUB;<br>USPAT | OR               | ON      | 2017/03/30<br>15:35 |
| L2    | 1    | baldwin.in. and natural adj language<br>and @ad< "20030603" | US-PGPUB;<br>USPAT | OR               | ON      | 2017/03/30<br>15:37 |

**3/ 30/ 2017 3:41:36 PM**

**EAST Search History****EAST Search History (Prior Art)**

| <b>Ref #</b> | <b>Hits</b> | <b>Search Query</b>                                                                          | <b>DBs</b>      | <b>Default Operator</b> | <b>Plurals</b> | <b>Time Stamp</b> |
|--------------|-------------|----------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|-------------------|
| L1           | 5           | (fuzzy and probability and context and domain and agent and asynchronous).clm.               | US-PGPUB; USPAT | OR                      | ON             | 2017/03/30 15:22  |
| L2           | 872         | prior adj probability and context and domain and agent                                       | US-PGPUB; USPAT | OR                      | ON             | 2017/03/30 15:31  |
| L3           | 253         | prior adj probability and context and domain and agent and asynchronous\$                    | US-PGPUB; USPAT | OR                      | ON             | 2017/03/30 15:31  |
| L4           | 18          | prior adj probability and context and domain and agent and asynchronous\$ and @ad<"20030603" | US-PGPUB; USPAT | OR                      | ON             | 2017/03/30 15:31  |

**3/ 30/ 2017 3:32:46 PM**

**EAST Search History****EAST Search History (Prior Art)**

| Ref # | Hits | Search Query                                                                   | DBs             | Default Operator | Plurals | Time Stamp       |
|-------|------|--------------------------------------------------------------------------------|-----------------|------------------|---------|------------------|
| L1    | 5    | (fuzzy and probability and context and domain and agent and asynchronous).clm. | US-PGPUB; USPAT | OR               | ON      | 2017/03/30 15:22 |

**3/ 30/ 2017 3:30:21 PM**

**EAST Search History****EAST Search History (Prior Art)**

| Ref # | Hits | Search Query                                             | DBs                       | Default Operator | Plurals | Time Stamp          |
|-------|------|----------------------------------------------------------|---------------------------|------------------|---------|---------------------|
| L1    | 655  | (707/707).OCLS.                                          | US-PGPUB;<br>USPAT; USOCR | OR               | OFF     | 2017/04/07<br>06:55 |
| L2    | 50   | 1 and asynchronous                                       | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>06:55 |
| L3    | 1095 | (707/755).OCLS.                                          | US-PGPUB;<br>USPAT; USOCR | OR               | OFF     | 2017/04/07<br>06:57 |
| L4    | 70   | 3 and asynchronous                                       | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>06:57 |
| L5    | 108  | kennewick.in.                                            | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>06:58 |
| L6    | 269  | david.in. and locke.in.                                  | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:04 |
| L7    | 2    | david.in. adj locke.in.                                  | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:04 |
| L8    | 2    | david adj locke.in.                                      | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:04 |
| L9    | 23   | david.in. and locke.in. and natural<br>adj language      | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:05 |
| L10   | 41   | tom.in. and freeman.in. and natural<br>adj language      | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:06 |
| L11   | 85   | G10L15\$.cpc. and domain and agent<br>and @ad<"20020603" | US-PGPUB;<br>USPAT        | OR               | ON      | 2017/04/07<br>07:16 |

**4/ 7/ 2017 8:11:34 AM**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** Mail **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

WOLF, GREENFIELD & SACKS, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2206

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below:

|                    |
|--------------------|
| (Depositor's name) |
| (Signature)        |
| (Date)             |

| APPLICATION NO.                                                                                                                     | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 14/278,627                                                                                                                          | 05/15/2014  | Robert A. Kennewick  | N0484.71158US09     | 7986             |
| TITLE OF INVENTION: METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |             |                      |                     |                  |

| APPLN. TYPE    | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|---------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | UNDISCOUNTED  | \$960.00      |                     |                      | \$960.00         | 07/12/2017 |
| EXAMINER       |               | ART UNIT      | CLASS-SUBCLASS      |                      |                  |            |
| M. Lerner      |               | 2657          |                     |                      |                  |            |

|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                         |                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).<br><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.<br><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b> | 2. For printing on the patent front page, list<br>(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,<br>(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. | 1. <u>Wolf, Greenfield &amp; Sacks, P.C.</u> |
|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                         | 2. _____                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                         | 3. _____                                     |

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Nuance Communications, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY) Burlington, Massachusetts

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

|                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4a. The following fee(s) are submitted:<br><input checked="" type="checkbox"/> Issue Fee<br><input type="checkbox"/> Publication Fee (No small entity discount permitted)<br><input type="checkbox"/> Advance Order - # of Copies _____ | 4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)<br><input type="checkbox"/> A check is enclosed.<br><input checked="" type="checkbox"/> Payment by credit card. <del>Form PTO-2038 is attached.</del><br><input checked="" type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number <u>23/2825</u> (enclose an extra copy of this form). |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29 **NOTE:** Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27 **NOTE:** If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status. **NOTE:** Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

|                                                     |                                |
|-----------------------------------------------------|--------------------------------|
| Authorized Signature _____ /Daniel T. Wehner/       | Date <u>July 11, 2017</u>      |
| Typed or printed name _____ Daniel T. Wehner, Ph.D. | Registration No. <u>63,480</u> |

## Certificate of Mailing or Transmission under 37 CFR 1.8

I hereby certify that this correspondence is being:

1. ☐ Deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:  
Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
on \_\_\_\_\_ .  
Date

2. ☐ Facsimile transmitted to the United States Patent and Trademark Office, or  
OR

3. ☒ EFS-Web transmitted to the USPTO.

\_\_\_\_\_  
/Lynn M. Silva/  
Signature

\_\_\_\_\_  
Lynn M. Silva  
Typed or printed name

\_\_\_\_\_  
July 11, 2017  
Date

\_\_\_\_\_  
617-646-8507  
Telephone number

Note: Each paper must have its own certificate of mailing or transmission, or this certificate must identify each submitted paper:

Issue Fee Transmittal (1 page)

5422751.1

| Electronic Patent Application Fee Transmittal      |                 |                                                                                                                 |               |                             |
|----------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|
| <b>Application Number:</b>                         |                 | 14278627                                                                                                        |               |                             |
| <b>Filing Date:</b>                                |                 | 15-May-2014                                                                                                     |               |                             |
| <b>Title of Invention:</b>                         |                 | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |               |                             |
| <b>First Named Inventor/Applicant Name:</b>        |                 | ROBERT A. KENNEWICK                                                                                             |               |                             |
| <b>Filer:</b>                                      |                 | Daniel T. Wehner/Lynn Silva                                                                                     |               |                             |
| <b>Attorney Docket Number:</b>                     |                 | N0484.71158US09                                                                                                 |               |                             |
| Filed as Large Entity                              |                 |                                                                                                                 |               |                             |
| <b>Filing Fees for Utility under 35 USC 111(a)</b> |                 |                                                                                                                 |               |                             |
| <b>Description</b>                                 | <b>Fee Code</b> | <b>Quantity</b>                                                                                                 | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                               |                 |                                                                                                                 |               |                             |
| <b>Pages:</b>                                      |                 |                                                                                                                 |               |                             |
| <b>Claims:</b>                                     |                 |                                                                                                                 |               |                             |
| <b>Miscellaneous-Filing:</b>                       |                 |                                                                                                                 |               |                             |
| <b>Petition:</b>                                   |                 |                                                                                                                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>            |                 |                                                                                                                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>           |                 |                                                                                                                 |               |                             |
| UTILITY APPL ISSUE FEE                             | 1501            | 1                                                                                                               | 960           | 960                         |

| Description        | Fee Code | Quantity | Amount | Sub-Total in<br>USD(\$) |
|--------------------|----------|----------|--------|-------------------------|
| Extension-of-Time: |          |          |        |                         |
| Miscellaneous:     |          |          |        |                         |
| Total in USD (\$)  |          |          |        | 960                     |

| Electronic Acknowledgement Receipt          |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>EFS ID:</b>                              | 29747619                                                                                                        |
| <b>Application Number:</b>                  | 14278627                                                                                                        |
| <b>International Application Number:</b>    |                                                                                                                 |
| <b>Confirmation Number:</b>                 | 7986                                                                                                            |
| <b>Title of Invention:</b>                  | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                                                                             |
| <b>Customer Number:</b>                     | 91337                                                                                                           |
| <b>Filer:</b>                               | Daniel T. Wehner/Lynn Silva                                                                                     |
| <b>Filer Authorized By:</b>                 | Daniel T. Wehner                                                                                                |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                                                                                 |
| <b>Receipt Date:</b>                        | 11-JUL-2017                                                                                                     |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                                                                     |
| <b>Time Stamp:</b>                          | 14:36:11                                                                                                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                                                                     |

**Payment information:**

|                                                                                                                |                       |
|----------------------------------------------------------------------------------------------------------------|-----------------------|
| Submitted with Payment                                                                                         | yes                   |
| Payment Type                                                                                                   | CARD                  |
| Payment was successfully received in RAM                                                                       | \$960                 |
| RAM confirmation Number                                                                                        | 071217INTEFSW14375400 |
| Deposit Account                                                                                                |                       |
| Authorized User                                                                                                |                       |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: |                       |

| <b>File Listing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                   |                                          |                  |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------|------------------------------------------|------------------|------------------|
| Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Document Description          | File Name                         | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Miscellaneous Incoming Letter | N048471158US09-TRN-DTW.<br>pdf    | 25054                                    | no               | 1                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                   | 8141a609f4837b7e1ad274aa4bd8a4a207f75a78 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                   |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                   |                                          |                  |                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Issue Fee Payment (PTO-85B)   | N048471158US09-ISSFEE-DTW.<br>pdf | 50198                                    | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                   | be83c23e715ac5376bed96aaac5dcbc98ee11801 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                   |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                   |                                          |                  |                  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06)          | fee-info.pdf                      | 30572                                    | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                   | f0e5ee9331d455d592348d9d45f83d7e90a047cf |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                   |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                   |                                          |                  |                  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                   | 105824                                   |                  |                  |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                               |                                   |                                          |                  |                  |

|                                                                                                    |                        |                        |
|----------------------------------------------------------------------------------------------------|------------------------|------------------------|
| <b>TRANSMITTAL<br/>FORM</b><br><br><i>(to be used for all correspondence after initial filing)</i> | Application Number     | 14/278,627-Conf. #7986 |
|                                                                                                    | Filing Date            | May 15, 2014           |
|                                                                                                    | First Named Inventor   | Robert A. Kennewick    |
|                                                                                                    | Art Unit               | 2657                   |
|                                                                                                    | Examiner Name          | M. Lerner              |
| Total Number of Pages in This Submission                                                           | Attorney Docket Number | N0484.71158US09        |

| ENCLOSURES (Check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Reply to Missing Parts/Incomplete Application<br><input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):<br>Part B - Fee Transmittal |         |
| <table border="1"><tr><td>Remarks</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Remarks |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                |          |        |
|--------------------------------------------|--------------------------------|----------|--------|
| Firm Name                                  | WOLF, GREENFIELD & SACKS, P.C. |          |        |
| Signature                                  | /Daniel T. Wehner/             |          |        |
| Printed name                               | Daniel T. Wehner, Ph.D.        |          |        |
| Date                                       | July 11, 2017                  | Reg. No. | 63,480 |

| Certificate of Electronic Filing under 37 CFR §1.8                                                                                                                                                      |                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office's electronic filing system in accordance with 37 CFR § 1.6(a)(4). |                                            |
| Dated: July 11, 2017                                                                                                                                                                                    | Signature: /Lynn M. Silva/ (Lynn M. Silva) |

5422750.1



# UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|------------|------------|---------------------|------------------|
| 14/278,627      | 08/15/2017 | 9734825    | N0484.71158US09     | 7986             |

91337 7590 07/26/2017  
Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206

## ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

### **Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)** (application filed on or after May 29, 2000)

The Patent Term Adjustment is 162 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

ROBERT A. KENNEWICK, BELLEVUE, WA;  
Nuance Communications, Inc., Burlington, MA;  
DAVID LOCKE, REDMOND, WA;  
MICHAEL R. KENNEWICK Sr., BELLEVUE, WA;  
MICHAEL R. KENNEWICK Jr., BELLEVUE, WA;  
RICHARD KENNEWICK, WOODINVILLE, WA;  
TOM FREEMAN, MERCER ISLAND, WA;

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## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT6700444

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>SUBMISSION TYPE:</b>           | NEW ASSIGNMENT        |
| <b>NATURE OF CONVEYANCE:</b>      | ASSIGNMENT            |
| <b>CONVEYING PARTY DATA</b>       |                       |
| <b>Name</b>                       | <b>Execution Date</b> |
| NUANCE COMMUNICATIONS, INC.       | 01/01/2021            |
| <b>RECEIVING PARTY DATA</b>       |                       |
| <b>Name:</b>                      | VOICE INVENTIONS, LLC |
| <b>Street Address:</b>            | 2 EXECUTIVE DRIVE     |
| <b>Internal Address:</b>          | STE. 270              |
| <b>City:</b>                      | FORT LEE              |
| <b>State/Country:</b>             | NEW JERSEY            |
| <b>Postal Code:</b>               | 07024                 |
| <b>PROPERTY NUMBERS Total: 29</b> |                       |
| <b>Property Type</b>              | <b>Number</b>         |
| Patent Number:                    | 7398209               |
| Patent Number:                    | 7502738               |
| Patent Number:                    | 7809570               |
| Patent Number:                    | 8015006               |
| Patent Number:                    | 8112275               |
| Patent Number:                    | 8140327               |
| Patent Number:                    | 8155962               |
| Patent Number:                    | 8731929               |
| Patent Number:                    | 9734825               |
| Patent Number:                    | 7693720               |
| Patent Number:                    | 9031845               |
| Patent Number:                    | 7640160               |
| Patent Number:                    | 7917367               |
| Patent Number:                    | 8326634               |
| Patent Number:                    | 8849670               |
| Patent Number:                    | 9263039               |
| Patent Number:                    | 7620549               |
| Patent Number:                    | 8332224               |
| Patent Number:                    | 8620659               |

| Property Type  | Number  |
|----------------|---------|
| Patent Number: | 9626959 |
| Patent Number: | 7949529 |
| Patent Number: | 8195468 |
| Patent Number: | 8447607 |
| Patent Number: | 8849652 |
| Patent Number: | 9495957 |
| Patent Number: | 7634409 |
| Patent Number: | 7983917 |
| Patent Number: | 8069046 |
| Patent Number: | 8150694 |

#### CORRESPONDENCE DATA

**Fax Number:**

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Email:** eddie.weiss@voiceinventions.com

**Correspondent Name:** EDWARD WEISS

**Address Line 1:** 2 EXECUTIVE DRIVE

**Address Line 2:** STE. 270

**Address Line 4:** FORT LEE, NEW JERSEY 07024

|                           |                                                            |
|---------------------------|------------------------------------------------------------|
| <b>NAME OF SUBMITTER:</b> | EDWARD WEISS                                               |
| <b>SIGNATURE:</b>         | /Edward Weiss/                                             |
| <b>DATE SIGNED:</b>       | 05/10/2021                                                 |
|                           | This document serves as an Oath/Declaration (37 CFR 1.63). |

#### Total Attachments: 4

source=2020-12-24 - Assignment Nuance to Voice Inventions#page1.tif

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source=2020-12-24 - Assignment Nuance to Voice Inventions#page4.tif

## PATENT ASSIGNMENT AGREEMENT

This PATENT ASSIGNMENT AGREEMENT (the "Assignment Agreement") between Nuance Communications, Inc., a Delaware corporation, with an address at One Wayside Road, Burlington, MA 01803 ("Assignor"), and Voice Inventions, LLC, a Texas Limited Liability Company, with an address at 2 Executive Drive, Suite 270, Fort Lee, NJ 07024 ("Assignee").

### RECITALS

WHEREAS the parties have entered into a certain Patent Purchase and Licensing Agreement (the "Purchase Agreement"), with an effective date of January 1, 2021;

WHEREAS Assignor possesses all legal rights, title, and interests in and to the patents listed in Exhibit A (the "Assigned Patent Portfolio") to this Assignment Agreement;

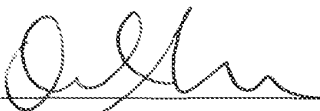
WHEREAS the parties desire to effectuate the assignment and transfer of the Assigned Patent Portfolio to Assignee such that Assignee shall acquire, and thus hereby acquires, all of Assignor's worldwide rights, title, and interests in and to the Assigned Patent Portfolio; and

WHEREAS the parties further desire that the assignment of the Assigned Patent Portfolio be undertaken in a such a manner as to allow Assignee to make such assignment a matter of record in the appropriate domestic and international patent offices;

NOW THEREFORE, for good and valuable consideration, the receipt of which by Assignor is hereby acknowledged, Assignor hereby sells, assigns, and transfers to Assignee, and Assignee hereby purchases and accepts from Assignor, all of Assignor's worldwide rights, title and interest, in and to the Assigned Patent Portfolio, including any and all of Assignor's rights to sue for past damages, subject to the terms and conditions of the Purchase Agreement.

IN WITNESS WHEREOF, intending to be legally bound, Assignor has caused this Assignment Agreement to be executed by its duly authorized representative and made effective, as of January 1, 2021.

**Nuance Communications, Inc.**  
**Assignor**

By 

Name: David Greenbaum  
Title: VP, Litigation & IP

**Exhibit A**

**Assigned Patent Portfolio**

|    | COUNTRY | TITLE                                                                                                                            | APPLICATION NUMBER | DATE FILED   | PATENT NUMBER |
|----|---------|----------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|---------------|
| 1  | US      | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE                                                          | 10/452,147         | Jun 3, 2003  | 7,398,209     |
| 2  | US      | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE                                                          | 11/747,547         | May 11, 2007 | 7,502,738     |
| 3  | US      | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE                                                          | 12/168,554         | Jul 7, 2008  | 7,809,570     |
| 4  | US      | SYSTEMS AND METHODS FOR PROCESSING NATURAL LANGUAGE SPEECH UTTERANCES WITH CONTEXT-SPECIFIC DOMAIN AGENTS                        | 12/130,397         | May 30, 2008 | 8,015,006     |
| 5  | US      | SYSTEM AND METHOD FOR USER-SPECIFIC SPEECH RECOGNITION                                                                           | 12/765,733         | Apr 22, 2010 | 8,112,275     |
| 6  | US      | SYSTEM AND METHOD FOR FILTERING AND ELIMINATING NOISE FROM NATURAL LANGUAGE UTTERANCES TO IMPROVE SPEECH RECOGNITION AND PARSING | 12/765,753         | Apr 22, 2010 | 8,140,327     |
| 7  | US      | METHOD AND SYSTEM FOR ASYNCHRONOUSLY PROCESSING NATURAL LANGUAGE UTTERANCES                                                      | 12/838,982         | Jul 19, 2010 | 8,155,962     |
| 8  | US      | AGENT ARCHITECTURE FOR DETERMINING MEANINGS OF NATURAL LANGUAGE UTTERANCES                                                       | 12/365,516         | Feb 4, 2009  | 8,731,929     |
| 9  | US      | SYSTEM AND METHOD FOR PROCESSING NATURAL LANGUAGE UTTERANCES                                                                     | 14/278,627         | May 15, 2014 | 9,734,825     |
| 10 | US      | MOBILE SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCES                                                  | 10/618,633         | Jul 15, 2003 | 7,693,720     |
| 11 | US      | MOBILE SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE                                                   | 12/705,311         | Feb 12, 2010 | 9,031,845     |

|    |    |                                                                         |            |              |           |
|----|----|-------------------------------------------------------------------------|------------|--------------|-----------|
| 12 | US | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE | 11/197,504 | Aug 5, 2005  | 7,640,160 |
| 13 | US | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE | 12/617,506 | Nov 12, 2009 | 7,917,367 |
| 14 | US | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE | 13/019,834 | Feb 2, 2011  | 8,326,634 |
| 15 | US | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE | 13/690,895 | Nov 30, 2012 | 8,849,670 |
| 16 | US | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE | 14/500,723 | Sep 29, 2014 | 9,263,039 |

|    |    |                                                                                  |            |              |           |
|----|----|----------------------------------------------------------------------------------|------------|--------------|-----------|
| 17 | US | SYSTEM AND METHOD OF SUPPORTING ADAPTIVE MISRECOGNITION IN CONVERSATIONAL SPEECH | 11/200,164 | Aug 10, 2005 | 7,620,549 |
| 18 | US | SYSTEM AND METHOD OF SUPPORTING ADAPTIVE MISRECOGNITION IN CONVERSATIONAL SPEECH | 12/571,795 | Oct 1, 2009  | 8,332,224 |
| 19 | US | SYSTEM AND METHOD OF SUPPORTING ADAPTIVE MISRECOGNITION IN CONVERSATIONAL SPEECH | 13/022,370 | Feb 7, 2011  | 8,620,659 |
| 20 | US | SYSTEM AND METHOD OF SUPPORTING ADAPTIVE MISRECOGNITION IN CONVERSATIONAL SPEECH | 14/143,903 | Dec 30, 2013 | 9,626,959 |

|    |    |                                                                                      |            |              |           |
|----|----|--------------------------------------------------------------------------------------|------------|--------------|-----------|
| 21 | US | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 11/212,693 | Aug 29, 2005 | 7,949,529 |
| 22 | US | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 13/084,197 | Apr 11, 2011 | 8,195,468 |
| 23 | US | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 13/488,299 | Jun 4, 2012  | 8,447,607 |
| 24 | US | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 13/898,045 | May 20, 2013 | 8,849,652 |

|    |    |                                                                                      |            |              |           |
|----|----|--------------------------------------------------------------------------------------|------------|--------------|-----------|
| 25 | US | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 14/467,641 | Aug 25, 2014 | 9,495,957 |
|----|----|--------------------------------------------------------------------------------------|------------|--------------|-----------|

|    |    |                                                                                                  |            |              |           |
|----|----|--------------------------------------------------------------------------------------------------|------------|--------------|-----------|
| 26 | US | DYNAMIC SPEECH SHARPENING                                                                        | 11/513,269 | Aug 31, 2006 | 7,634,409 |
| 27 | US | DYNAMIC SPEECH SHARPENING                                                                        | 12/608,544 | Oct 29, 2009 | 7,983,917 |
| 28 | US | DYNAMIC SPEECH SHARPENING                                                                        | 12/608,572 | Oct 29, 2009 | 8,069,046 |
| 29 | US | SYSTEM AND METHOD FOR PROVIDING AN ACOUSTIC GRAMMAR TO DYNAMICALLY SHARPEN SPEECH INTERPRETATION | 13/150,977 | Jun 1, 2011  | 8,150,694 |

|    |    |                                                                                      |               |              |                  |
|----|----|--------------------------------------------------------------------------------------|---------------|--------------|------------------|
| 30 | CN | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE              | 2006800362006 | Aug 4, 2006  | ZL200680036200.6 |
| 31 | CN | SYSTEMS AND METHODS FOR RESPONDING TO NATURAL LANGUAGE SPEECH UTTERANCE              | 2015102059396 | Aug 4, 2006  | ZL201510205939.6 |
| 32 | CN | MOBILE SYSTEMS AND METHODS OF SUPPORTING NATURAL LANGUAGE HUMAN-MACHINE INTERACTIONS | 200680038560  | Aug 29, 2006 | 200680038560     |

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|                                                                                                                                                            |                      |                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|
| <b>PATENT - POWER OF ATTORNEY<br/>OR<br/>REVOCATION OF POWER OF ATTORNEY<br/>WITH A NEW POWER OF ATTORNEY<br/>AND<br/>CHANGE OF CORRESPONDENCE ADDRESS</b> | Patent Number        | 9734825                                                                 |
|                                                                                                                                                            | Issue Date           | 08/15/17                                                                |
|                                                                                                                                                            | First Named Inventor | Kennewick, Robert A.                                                    |
|                                                                                                                                                            | Title                | Methods and apparatus for determining a domain based on the content and |
|                                                                                                                                                            | Attorney Docket No.  | 9032-0030                                                               |

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

174889

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

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|----------------------|---------------------|
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Please recognize or change the correspondence address for the above-identified patent to:

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OR

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OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on \_\_\_\_\_.

**SIGNATURE of Applicant or Patent Owner**

Signature

/Jeff Ronaldi/

Date

02/27/2023

Name

Jeff Ronaldi

Telephone

(571) 334-1112

Title and Company

Manager, Dialect, LLC

**NOTE:** Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.☐ A total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: Dialect, LLC  
Application No./Patent No.: 9734825 Filed/Issue Date: 08/15/17  
Titled: Methods and apparatus for determining a domain based on the content and context of a  
Dialect, LLC, a limited liability company  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Kennewick, Robert A et al. To: VoiceBox Technologies, Inc.

The document was recorded in the United States Patent and Trademark Office at  
Reel 033473, Frame 0491, or for which a copy thereof is attached.

2. From: VoiceBox Technologies, Inc. To: VoiceBox Technologies Corporation

The document was recorded in the United States Patent and Trademark Office at  
Reel 033473, Frame 0578, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: VoiceBox Technologies Corporation To: Nuance Communications, Inc.

The document was recorded in the United States Patent and Trademark Office at  
Reel 034703, Frame 0429, or for which a copy thereof is attached.

4. From: Nuance Communications, Inc. To: Voice Inventions, LLC

The document was recorded in the United States Patent and Trademark Office at  
Reel 056185, Frame 0742, or for which a copy thereof is attached.

5. From: Voice Inventions, LLC To: Dialect, LLC

The document was recorded in the United States Patent and Trademark Office at  
Reel 060820, Frame 0857, or for which a copy thereof is attached.

6. From: \_\_\_\_\_ To: \_\_\_\_\_

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Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Jeff Ronaldi/

Signature

Jeff Ronaldi

Printed or Typed Name

02/27/2023

Date

Manager, Dialect, LLC

Title or Registration Number

[Page 2 of 2]

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

| Electronic Acknowledgement Receipt          |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>EFS ID:</b>                              | 47603774                                                                                                        |
| <b>Application Number:</b>                  | 14278627                                                                                                        |
| <b>International Application Number:</b>    |                                                                                                                 |
| <b>Confirmation Number:</b>                 | 7986                                                                                                            |
| <b>Title of Invention:</b>                  | METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE |
| <b>First Named Inventor/Applicant Name:</b> | ROBERT A. KENNEWICK                                                                                             |
| <b>Customer Number:</b>                     | 91337                                                                                                           |
| <b>Filer:</b>                               | David Alexander Gerasimow                                                                                       |
| <b>Filer Authorized By:</b>                 |                                                                                                                 |
| <b>Attorney Docket Number:</b>              | N0484.71158US09                                                                                                 |
| <b>Receipt Date:</b>                        | 28-FEB-2023                                                                                                     |
| <b>Filing Date:</b>                         | 15-MAY-2014                                                                                                     |
| <b>Time Stamp:</b>                          | 13:25:54                                                                                                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                                                                                     |

### Payment information:

| Submitted with Payment |                      | no          |                                          |                  |                  |
|------------------------|----------------------|-------------|------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                      |             |                                          |                  |                  |
| Document Number        | Document Description | File Name   | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
| 1                      | Power of Attorney    | 9734825.pdf | 206955                                   | no               | 2                |
|                        |                      |             | e7d6163455e8af5031f820a01efa28b9c9e854cd |                  |                  |
| <b>Warnings:</b>       |                      |             |                                          |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               |                     |                                              |    |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------|----------------------------------------------|----|---|
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                     |                                              |    |   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Assignee showing of ownership per 37 CFR 3.73 | 9734825-aia0096.pdf | 202242                                       | no | 3 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               |                     | 1786a3c8a388bbc8bc72464667211148cca<br>b14f5 |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                     |                                              |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                     |                                              |    |   |
| Total Files Size (in bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                               |                     | 409197                                       |    |   |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                               |                     |                                              |    |   |



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | N0484.71158US09        |

**CONFIRMATION NO. 7986**  
**IMPROPER CPOA LETTER**

91337  
Nuance Communications, Inc.  
c/o Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210-2206



Date Mailed: 03/07/2023

**NOTICE REGARDING POWER OF ATTORNEY**

This is in response to the power of attorney filed 02/28/2023. The power of attorney in this application is not accepted for the reason(s) listed below:

- The person(s) appointed in the power of attorney is/are not registered to practice before the U.S. Patent and Trademark Office.

/s/torres/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

174889  
Carbon Research, Inc (aka Research Carbon, Inc)  
43 Luke St  
Prospect, CT 06712  
UNITED STATES

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

|                                                                                                                                                            |                      |                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------|
| <b>PATENT - POWER OF ATTORNEY<br/>OR<br/>REVOCATION OF POWER OF ATTORNEY<br/>WITH A NEW POWER OF ATTORNEY<br/>AND<br/>CHANGE OF CORRESPONDENCE ADDRESS</b> | Patent Number        | 9734825                                                                 |
|                                                                                                                                                            | Issue Date           | 08/15/17                                                                |
|                                                                                                                                                            | First Named Inventor | Kennewick, Robert A.                                                    |
|                                                                                                                                                            | Title                | Methods and apparatus for determining a domain based on the content and |
|                                                                                                                                                            | Attorney Docket No.  | 9032-0030                                                               |

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

174899

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

| Practitioner(s) Name | Registration Number |
|----------------------|---------------------|
|                      |                     |
|                      |                     |
|                      |                     |
|                      |                     |

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on 02/28/2023.

**SIGNATURE of Applicant or Patent Owner**

|                   |                       |           |                |
|-------------------|-----------------------|-----------|----------------|
| Signature         | /I eff Ronaldi/       | Date      | 11/06/2023     |
| Name              | I eff Ronaldi         | Telephone | (571) 334-1112 |
| Title and Company | Manager, Dialect, LLC |           |                |

**NOTE:** Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



## ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #  
**14/278,627**

RECEIPT DATE / TIME  
**11/27/2023 03:39:09 PM Z ET**

ATTORNEY DOCKET #  
**N0484.71158US09**

### Title of Invention

METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND CONTEXT OF A NATURAL LANGUAGE UTTERANCE

### Application Information

APPLICATION TYPE Utility - Nonprovisional Application  
under 35 USC 111(a)

PATENT # 9734825

CONFIRMATION # 7986

FILED BY David Gerasimow

PATENT CENTER # 63385507

FILING DATE 05/15/2014

CUSTOMER # 91337

FIRST NAMED INVENTOR ROBERT A. KENNEWICK

CORRESPONDENCE ADDRESS -

AUTHORIZED BY -

### Documents

**TOTAL DOCUMENTS: 1**

| DOCUMENT    | PAGES | DESCRIPTION       | SIZE (KB) |
|-------------|-------|-------------------|-----------|
| 9734825.pdf | 2     | Power of Attorney | 208 KB    |

### Digest

| DOCUMENT    | MESSAGE DIGEST(SHA-512)                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 9734825.pdf | 001B09F51D596651C27470B987383EC2B88108AE32F163BE35<br>6EA91F2D0684933436788FC200724CEDB3BBD8772AA9C8628<br>C0A5ABF7E2B6474E970C3F9886F75 |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized

by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | N0484.71158US09        |

**CONFIRMATION NO. 7986**

91337

Nuance Communications, Inc.  
One Wayside Road  
Burlington, MA 01803

**POWER OF ATTORNEY NOTICE**



\*OC000000065476801\*

Date Mailed: 12/07/2023

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 11/27/2023.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/zabaha/



UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 14/278,627         | 05/15/2014            | ROBERT A. KENNEWICK   | 9032-0030              |

**CONFIRMATION NO. 7986**

**POA ACCEPTANCE LETTER**



\*OC000000065476899\*

174899

The Law Offices of David A. Gerasimow, P.C.  
211 W. Wacker Dr.  
Ste. 1717  
Chicago, IL 60606

Date Mailed: 12/07/2023

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 11/27/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/zabaha/

Doc Code: MFEE.C.AD  
Document Description: Maintenance Fee Address Change

PTO/SB/47 (11-21)  
Approved for use through 11/30/2024. OMB 0651-0016  
U.S. Patent and Trademark Office; U.S. Department of Commerce

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| "FEE ADDRESS" INDICATION FORM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Address to:<br>Mail Stop Maintenance Fee<br>Director of the United States<br>Patent and Trademark Office<br>P.O. Box 1450<br>Alexandria, VA 22313-1450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                  |
| -OR-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Fax to: 571-273-6500                                             |
| <b>INSTRUCTIONS:</b> The issue fee must have been paid for application(s) listed on this form. In addition, only an address represented by a Customer Number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application.<br><b>When to check the first box below:</b> If you have a Customer Number to represent the fee address.<br><b>When to check the second box below:</b> If you have no Customer Number representing the desired fee address, in which case a completed Request for Customer Number (PTO/SB/125) must be attached to this form. For more information on Customer Numbers, see section 403 of the Manual of Patent Examining Procedure (MPEP). |                                                                  |
| For the following listed application(s), please recognize as the "Fee Address" under the provisions of 37 CFR 1.363 the address associated with:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                  |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Customer Number 174899                                           |
| OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                  |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The attached Request for Customer Number (PTO/SB/125) form.      |
| PATENT NUMBER<br>(if known)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPLICATION NUMBER                                               |
| 9734825                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 14/278,627                                                       |
| Completed by (check one):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                  |
| <input type="checkbox"/> Applicant/Inventor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | /David A. Gerasimow/<br>Signature                                |
| <input checked="" type="checkbox"/> Attorney or agent of record                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 57,512<br>(Reg. No.) David A. Gerasimow<br>Typed or printed name |
| <input type="checkbox"/> Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) (Form PTO/SB/96) is enclosed or was filed on                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (312) 919-4254<br>Requester's telephone number                   |
| (Date)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12/11/2023<br>Date                                               |
| NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. If the assignee is a juristic entity, this form must be signed by a patent practitioner (attorney or agent) of record. Submit multiple forms if more than one signature is required (see below*).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                  |
| <input type="checkbox"/> *Total of _____ PTO/SB/47 forms are submitted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                  |

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## ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #  
**14/278,627**RECEIPT DATE / TIME  
**12/14/2023 03:36:31 PM Z ET**ATTORNEY DOCKET #  
**9032-0030****Title of Invention**METHODS AND APPARATUS FOR DETERMINING A DOMAIN BASED ON THE CONTENT AND  
CONTEXT OF A NATURAL LANGUAGE UTTERANCE**Application Information**APPLICATION TYPE Utility - Nonprovisional Application  
under 35 USC 111(a)

PATENT # 9734825

CONFIRMATION # 7986

FILED BY David Gerasimow

PATENT CENTER # 63619347

FILING DATE 05/15/2014

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FIRST NAMED INVENTOR ROBERT A. KENNEWICK

CORRESPONDENCE ADDRESS -

AUTHORIZED BY -

**Documents****TOTAL DOCUMENTS: 1**

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