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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b>  <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Attorney Docket No.</td> <td>62KC-303780</td> </tr> <tr> <td>First Named Inventor</td> <td>Larry BALDWIN</td> </tr> <tr> <td>Title</td> <td>See the Application Data Sheet</td> </tr> <tr> <td>Priority Mail Express® Label No.</td> <td></td> </tr> </table>	Attorney Docket No.	62KC-303780	First Named Inventor	Larry BALDWIN	Title	See the Application Data Sheet	Priority Mail Express® Label No.	
Attorney Docket No.	62KC-303780								
First Named Inventor	Larry BALDWIN								
Title	See the Application Data Sheet								
Priority Mail Express® Label No.									

<b>APPLICATION ELEMENTS</b> <i>See MPEP chapter 600 concerning utility patent application contents.</i>	<b>ADDRESS TO:</b> <div style="text-align: right;"> <b>Commissioner for Patents</b>  <b>P.O. Box 1450</b>  <b>Alexandria, VA 22313-1450</b> </div>
<ol style="list-style-type: none"> <li>1. <input type="checkbox"/> <b>Fee Transmittal Form</b> (PTO/SB/17 or equivalent)</li> <li>2. <input type="checkbox"/> <b>Applicant asserts small entity status.</b> See 37 CFR 1.27</li> <li>3. <input type="checkbox"/> <b>Applicant certifies micro entity status.</b> See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.</li> <li>4. <input checked="" type="checkbox"/> <b>Specification</b> [Total Pages <u>38</u>] Both the claims and abstract must start on a new page. (See MPEP § 608.01(a) for information on the preferred arrangement)</li> <li>5. <input checked="" type="checkbox"/> <b>Drawing(s)</b> (35 U.S.C. 113) [Total Sheets <u>3</u>]</li> <li>6. <b>Inventor's Oath or Declaration</b> [Total Pages <u>5</u>] (including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> Newly executed (original or copy)</li> <li>b. <input checked="" type="checkbox"/> A copy from a prior application (37 CFR 1.63(d))</li> </ol> </li> <li>7. <input checked="" type="checkbox"/> <b>Application Data Sheet</b> * See note below. See 37 CFR 1.76 (PTO/AIA/14 or equivalent)</li> <li>8. <b>CD-ROM or CD-R</b> in duplicate, large table, or Computer Program (Appendix) <input type="checkbox"/> Landscape Table on CD</li> <li>9. <b>Nucleotide and/or Amino Acid Sequence Submission</b> (if applicable, items a. – c. are required)             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> Computer Readable Form (CRF)</li> <li>b. <input type="checkbox"/> Specification Sequence Listing on:                 <ol style="list-style-type: none"> <li>i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or</li> <li>ii. <input type="checkbox"/> Paper</li> </ol> </li> <li>c. <input type="checkbox"/> Statements verifying identity of above copies</li> </ol> </li> </ol>	<b>ACCOMPANYING APPLICATION PAPERS</b> <ol style="list-style-type: none"> <li>10. <input type="checkbox"/> <b>Assignment Papers</b> (cover sheet &amp; document(s)) Name of Assignee _____</li> <li>11. <input type="checkbox"/> <b>37 CFR 3.73(c) Statement</b> <input checked="" type="checkbox"/> <b>Power of Attorney</b> (when there is an assignee)</li> <li>12. <input type="checkbox"/> <b>English Translation Document</b> (if applicable)</li> <li>13. <input checked="" type="checkbox"/> <b>Information Disclosure Statement</b> (PTO/SB/08 or PTO-1449) <input type="checkbox"/> Copies of citations attached</li> <li>14. <input type="checkbox"/> <b>Preliminary Amendment</b></li> <li>15. <input type="checkbox"/> <b>Return Receipt Postcard</b> (MPEP § 503) (Should be specifically itemized)</li> <li>16. <input type="checkbox"/> <b>Certified Copy of Priority Document(s)</b> (if foreign priority is claimed)</li> <li>17. <input type="checkbox"/> <b>Nonpublication Request</b> Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.</li> <li>18. <input type="checkbox"/> <b>Other:</b> _____ _____ _____ _____</li> </ol>

**\*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>133759</u> OR <input type="checkbox"/> Correspondence address below				
Name				
Address				
City	State	Zip Code		
Country	Telephone	Email		

Signature	/Mark A. Patrick/	Date	August 29, 2019
Name (Print/Type)	Mark A. Patrick	Registration No. (Attorney/Agent)	72,958

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.

## 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.

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

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
<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:

<input type="checkbox"/>	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.)
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## Inventor Information:

Inventor 1					Remove				
Legal Name									
Prefix	Given Name			Middle Name			Family Name		Suffix
	Larry						BALDWIN		
Residence Information (Select One)					<input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service				
City	Maple Valley			State/Province	WA		Country of Residence	US	
Mailing Address of Inventor:									
Address 1		25498 S.E. 274th Place							
Address 2									
City	Maple Valley			State/Province	WA				
Postal Code	98038			Country i	US				
Inventor 2					Remove				
Legal Name									
Prefix	Given Name			Middle Name			Family Name		Suffix
	Tom						FREEMAN		
Residence Information (Select One)					<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	US	
Mailing Address of Inventor:									
Address 1		6735 83rd Avenue S.E.							
Address 2									
City	Mercer Island			State/Province	WA				
Postal Code	98040			Country i	US				
Inventor 3					Remove				
Legal Name									
Prefix	Given Name			Middle Name			Family Name		Suffix
	Michael						TJALVE		
Residence Information (Select One)					<input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service				

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

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

City	Bellevue	State/Province	WA	Country of Residence	US
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**Mailing Address of Inventor:**

Address 1	14904 SE 47th Court				
Address 2					
City	Bellevue	State/Province	WA		
Postal Code	98006	Country	US		
Inventor	4				<input type="button" value="Remove"/>

**Legal Name**

Prefix	Given Name	Middle Name	Family Name	Suffix
	Blane		EBERSOLD	

Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service

City	Seattle	State/Province	WA	Country of Residence	US
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**Mailing Address of Inventor:**

Address 1	4721 Admiral Way S.W.				
Address 2					
City	Seattle	State/Province	WA		
Postal Code	98116	Country	US		
Inventor	5				<input type="button" value="Remove"/>

**Legal Name**

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		WEIDER	

Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service

City	Seattle	State/Province	WA	Country of Residence	US
------	---------	----------------	----	----------------------	----

**Mailing Address of Inventor:**

Address 1	10757 Greenwood Avenue N.				
Address 2	#202				
City	Seattle	State/Province	WA		
Postal Code	98133	Country	US		

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.**Correspondence Information:**Enter either Customer Number or complete the Correspondence Information section below.  
For further information see 37 CFR 1.33(a).☐ An Address is being provided for the correspondence information of this application.

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

Customer Number	133759		
Email Address	DMIPDocketing@sheppardmullin.com	<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

**Application Information:**

Title of the Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
Attorney Docket Number	62KC-303780	Small Entity Status Claimed	<input type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	3	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.

**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.											
<table border="1"> <tr> <td>Please Select One:</td> <td><input checked="" type="radio"/> Customer Number</td> <td><input type="radio"/> US Patent Practitioner</td> <td><input type="radio"/> Limited Recognition (37 CFR 11.9)</td> </tr> <tr> <td>Customer Number</td> <td colspan="3">133759</td> </tr> </table>				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	133759		
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	133759										

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim 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" field blank.

Prior Application Status		Pending	Remove			
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
	Continuation of		16417173	2019-05-20		
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
16417173	Division of	14691445	2015-04-20	10297249	2019-05-21	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
14691445	Continuation of	13987645	2013-08-19	9015049	2015-04-21	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
13987645	Division of	13251712	2011-10-03	8515765	2013-08-20	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
13251712	Continuation of	11580926	2006-10-16	8073681	2011-12-06	
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the <b>Add</b> button.				Add		

## 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. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)<sup>i</sup> the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(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).

			Remove
Application Number	Country <sup>i</sup>	Filing Date (YYYY-MM-DD)	Access Code <sup>i</sup> (if applicable)

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

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

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.



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.

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

## Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

**NOTE:** This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

### 1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

**A. Priority Document Exchange (PDX)** - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

**B. Search Results from U.S. Application to EPO** - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

### 2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

**NOTE:** Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

## Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

<b>Applicant</b>	1	<a href="#">Remove</a>
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p> <p style="text-align: right;"><a href="#">Clear</a></p>		
<input checked="" type="radio"/> Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
Name of the Deceased or Legally Incapacitated Inventor: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
If the Applicant is an Organization check here. <input checked="" type="checkbox"/>		
Organization Name	VB Assets, LLC	
<b>Mailing Address Information For Applicant:</b>		
Address 1	13407 NE 37th Place	
Address 2		
City	Bellevue	State/Province
Country	US	Postal Code
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. <a href="#">Add</a>		

## Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	62KC-303780
		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

<b>Assignee</b>	1		
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
			<a href="#">Remove</a>
If the Assignee or Non-Applicant Assignee is an Organization check here. <input checked="" type="checkbox"/>			
Organization Name	VB Assets, LLC		
<b>Mailing Address Information For Assignee including Non-Applicant Assignee:</b>			
Address 1	13407 NE 37th Place		
Address 2			
City	Bellevue	State/Province	WA
Country <sup>i</sup>	US	Postal Code	98005
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. <a href="#">Add</a>			

**Signature:**[Remove](#)

**NOTE:** This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

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		Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		

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## **SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE**

### **CROSS-REFERENCE TO RELATED APPLICATIONS**

[001] This application is a continuation of U.S. Patent Application Serial No. 16/417,173, entitled "SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE", filed May 20, 2019, which is a divisional of U.S. Patent Application Serial No. 14/691,445, entitled "SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE," filed April 20, 2015 (which issued as U.S. Patent No. 10,297,249 on May 21, 2019), which is a continuation of U.S. Patent Application Serial No. 13/987,645, entitled "SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE," filed August 19, 2013 (which issued as U.S. Patent No. 9,015,049 on April 21, 2015), which is a divisional of U.S. Patent Application Serial No. 13/251,712, entitled "SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE," filed October 3, 2011 (which issued as U.S. Patent No. 8,515,765 on August 20, 2013), which is a continuation of U.S. Patent Application Serial No. 11/580,926, entitled "SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE," filed October 16, 2006 (which issued as U.S. Patent No. 8,073,681 on December 6, 2011), each of which are hereby incorporated by reference in its entirety.

### **FIELD OF THE INVENTION**

[002] The invention relates to a cooperative conversational model for a human to machine voice user interface.

### **BACKGROUND OF THE INVENTION**

[003] Advances in technology, particularly within the convergence space, have resulted in an increase in demand for voice recognition software that can exploit technology in ways that are intuitive to humans. While communication between human beings is most often "cooperative," in that information and/or context is shared to advance mutual conversational goals, existing Human-to-Machine interfaces fail to provide the same level of intuitive interaction. For example, each human participant in a conversation can contribute to an exchange for the benefit of the exchange. This is done through shared assumptions and

expectations regarding various aspects of the conversation, such as the topic, participant knowledge about the topic, expectations of the other participant's knowledge about the topic, appropriate word usage for the topic and/or participants, conversational development based on previous utterances, the participants' tone or inflection, the quality and quantity of contribution expected from each participant, and many other factors. Participating in conversations that continually build and draw upon shared information is a natural and intuitive way for humans to converse.

[004] In contrast, complex Human-to-Machine interfaces do not allow users to exploit technology in an intuitive way, which inhibits mass-market adoption for various technologies. Incorporating a speech interface helps to alleviate this burden by making interaction easier and faster, but existing speech interfaces (when they actually work) still require significant learning on the part of the user. That is, existing speech interfaces are unable to bridge the gap between archaic Human-to-Machine interfaces and conversational speech that would make interaction with systems feel normal. Users should be able to directly request what they want from a system in a normal, conversational fashion, without having to memorize exact words or phrases. Alternatively, when users are uncertain of particular needs, they should be able to engage the system in a productive, cooperative dialogue to resolve their requests. Instead, existing speech interfaces force users to dumb down their requests to match simple sets of instructions in simple languages in order to communicate requests in ways that systems can understand. Using existing speech interfaces, there is virtually no option for dialogue between the user and the system to satisfy mutual goals.

[005] Therefore, existing systems lack a conversational speech model that can provide users with the ability to interact with systems in ways that are inherently intuitive to human beings. Existing systems suffer from these and other problems.

#### **SUMMARY OF THE INVENTION**

[006] According to various embodiments and aspects of the invention, a cooperative conversational voice user interface may understand free form human utterances, freeing users from being restricted to a fixed set of commands and/or requests. Rather, users can engage in

cooperative conversations with a machine to complete a request or series of requests using a natural, intuitive, free form manner of expression.

**[007]** According to an aspect of the invention, an exemplary system architecture for implementing a cooperative conversational voice user interface is provided. The system may receive an input, which may include a human utterance received by an input device, where the utterance may include one or more requests. As used herein, an “utterance” may be words, syllables, phonemes, or any other audible sound made by a human being. As used herein, a “request” may be a command, directive, or other instruction for a device, computer, or other machine to retrieve information, perform a task, or take some other action. In one implementation, the input may be a multi-modal input, where at least part of the multi-modal input is an utterance. The utterance component of the input may be processed by a speech recognition engine (which may alternatively be referred to as an Automatic Speech Recognizer or ASR) to generate one or more preliminary interpretations of the utterance. The one or more preliminary interpretations may then be provided to a conversational speech engine for further processing, where the conversational speech engine may communicate with one or more databases to generate an adaptive conversational response, which may be returned to the user as an output. In one implementation, the output may be a multi-modal output. For example, the utterance may include a request to perform an action, and the output may include a conversational response reporting success or failure, as well as an execution of the action.

**[008]** According to another aspect of the invention, an exemplary conversational speech engine may generate an adaptive conversational response to a request or series of requests. The conversational speech engine may include a free form voice search module that may understand an utterance made using typical, day-to-day language (i.e., in free form), and may account for variations in how humans normally speak, the vocabulary they use, and the conditions in which they speak. To account for intangible variables of human speech, the free form search module may include models of casual human speech. For example, in one implementation, the free form search module may understand specialized jargon and/or slang, tolerate variations in word order, and tolerate verbalized pauses or stuttered speech. For example, formalized English requests, where a verb precedes a noun, may be treated in an

equivalent manner to requests where the noun precedes the verb. In another implementation, compound requests and/or compound tasks with multiple variables may be identified in a single utterance. By identifying all relevant information for completing one or more tasks from a single utterance, advantages may be provided over existing voice user interfaces, such as Command and Control systems that use verbal menus to restrict information that a person can provide at a given point. In another implementation, inferring intended requests from incomplete or ambiguous requests may provide a conversational feel. By modeling what contextual signifiers, qualifiers, or other information may be required to perform a task in an identified context, an adaptive response may be generated, such as prompting a user for missing contextual signifiers, qualifiers, or other information. In one implementation, the response may ask for missing information in a way that most restricts possible interpretations, and the response may be framed to establish a domain for a subsequent user utterance. In another implementation, common alternatives for nouns and verbs may be recognized to reflect variations in usage patterns according to various criteria. Thus, variations in expression may be supported because word order is unimportant or unanticipated, and nouns and/or verbs may be represented in different ways to give simplistic, yet representative, examples. In another implementation, requests may be inferred from contradictory or otherwise inaccurate information, such as when an utterance includes starts and stops, restarts, stutters, run-on sentences, or other imperfect speech. For example, a user may sometimes change their mind, and thus alter the request in mid-utterance, and the imperfect speech feature may nonetheless be able to infer a request based on models of human speech. For example, various models may indicate that a last criterion is most likely to be correct, or intonation, emphasis, stress, use of the word "not," or other models may indicate which criterion is most likely to be correct.

**[009]** According to another aspect of the invention, the conversational speech engine may include a noise tolerance module that may discard words or noise which has no meaning in a given context to reduce a likelihood of confusion. Moreover, the noise tolerance module may filter out environmental and non-human noise to further reduce a likelihood of confusion. In one implementation, the noise tolerance module may cooperate with other modules and features to filter out words that do not fit into an identified context. For example, the noise

tolerance module may filter other human conversations and/or utterances within a range of one or more microphones. For example, a single device may include multiple microphones, or multiple devices may each include one or more microphones, and the noise tolerance module may collate inputs and cooperatively filter out sound by comparing a speech signal from the various microphones. The noise tolerance module may also filter out non-human environmental noise within range of the microphones, out-of-vocabulary words caused by speaker ambiguity or malapropisms, or other noise that may be unrelated to a target request. Performance benchmarks for the noise tolerance module may be defined by noise models based on human criteria. For example, if a driver of a car is 92% likely to be understood by a passenger when traveling at 65 miles-per-hour with windows cracked, then performance benchmarks for the noise tolerance module may have a similar performance under such conditions.

**[010]** According to another aspect of the invention, the conversational speech engine may include a context determination process that determines one or more contexts for a request to establish meaning within a conversation. The one or more contexts may be determined by having one or more context domain agents compete to determine a most appropriate domain for a given utterance. Once a given domain agent “wins” the competition, the winning domain agent may be responsible for establishing or inferring further contexts and updating short-term and long-term shared knowledge. If there is a deadlock between context domain agents, an adaptive conversational response may prompt the user to assist in disambiguating between the deadlocked agents. Moreover, the context determination process may infer intended operations and/or context based on previous utterances and/or requests, whereas existing systems consider each utterance independently, potentially making the same errors over and over again. For example, if a given interpretation turns out to be incorrect, the incorrect interpretation may be removed as a potential interpretation from one or more grammars associated with the speech recognition engine and/or from possible interpretations determined by the conversational speech engine, thereby assuring that a mistake will not be repeated for an identical utterance.

[011] The context determination process may provide advantages over existing voice user interfaces by continually updating one or more models of an existing context and establishing context as a by-product of a conversation, which cannot be established a priori. Rather, the context determination process may track conversation topics and attempt to fit a current utterance into recent contexts, including switching between contexts as tasks are completed, partially completed, requested, etc. The context determination process may identify one or more context domains for an utterance by defining a collection of related functions that may be useful for users in various context domains. Moreover, each context domain may have relevant vocabularies and thought collections to model word groupings, which when evaluated together, may disambiguate one context domain from another. Thus, eliminating out-of-context words and noise words when searching for relevant combinations may enhance accuracy of inferences. This provides advantages over existing systems that attempt to assign meaning to every component of an utterance (i.e., including out-of-context words and noise words), which results in nearly infinite possible combinations and greater likelihood of confusion. The context determination process may also be self-aware, assigning degrees of certainty to one or more generated hypotheses, where a hypothesis may be developed to account for variations in environmental conditions, speaker ambiguity, accents, or other factors. By identifying a context, capabilities within the context, vocabularies within the context, what tasks are done most often historically in the context, what task was just completed, etc., the context determination process may establish intent from rather meager phonetic clues. Moreover, just as in human-to-human conversation, users may switch contexts at any time without confusion, enabling various context domains to be rapidly selected, without menu-driven dead ends, when an utterance is unambiguous.

[012] According to another aspect of the invention, an exemplary cooperative conversational model may build upon free form voice search, noise tolerance, and context determination to implement a conversational Human-to-Machine interface that reflects human interaction and normal conversational behavior. That is, the cooperative conversational model enables humans and machines to participate in a conversation with an accepted purpose or direction, with each participant contributing to the conversation for the benefit of the conversation. By

taking advantage of human presumptions about utterances that humans rely upon, both as speakers and listeners, a Human-to-Machine interface may be analogous to everyday human-to-human conversation. In one implementation, the exemplary cooperative conversation model may take incoming data (shared knowledge) to inform a decision (intelligent hypothesis building), and then may refine the decision and generate a response (adaptive response building).

**[013]** According to another aspect of the invention, shared knowledge may include both short-term and long-term knowledge. Short-term knowledge may accumulate during a single conversation, where input received during a single conversation may be retained. The shared knowledge may include cross-modality awareness, where in addition to accumulating input relating to user utterances, requests, locations, etc., the shared knowledge may accumulate a current user interface state relating to other modal inputs to further build shared knowledge models. The shared knowledge may be used to build one or more intelligent hypotheses using current and relevant information, build long-term shared knowledge by identifying information with long-term significance, and generate adaptive responses with relevant state and word usage information. Moreover, because cooperative conversations model human conversations, short-term session data may be expired after a psychologically appropriate amount of time, thereby humanizing system behavior, reducing a likelihood of contextual confusion based on stale data, while also adding relevant information from an expired session context to long-term knowledge models. Long-term shared knowledge may generally be user-centric, rather than session-based, where inputs may be accumulated over time to build user, environmental, cognitive, historical, or other long-term knowledge models. Long-term and short-term shared knowledge may be used simultaneously anytime a user engages in a cooperative conversation. Long-term shared knowledge may include explicit and/or implicit user preferences, a history of recent contexts, requests, tasks, etc., user-specific jargon related to vocabularies and/or capabilities of a context, most often used word choices, or other information. The long-term shared knowledge may be used to build one or more intelligent hypotheses using current and relevant information, generate adaptive responses with appropriate word choices when unavailable via short-term shared knowledge, refine long-term shared knowledge models,

identify a frequency of specific tasks, identify tasks a user frequently has difficulty with, or provide other information and/or analysis to generate more accurate conversational responses. Shared knowledge may also be used to adapt a level of unprompted support (e.g., for novices versus experienced users, users who are frequently misrecognized, etc.) Thus, shared knowledge may enable a user and a voice user interface to share assumptions and expectations such as topic knowledge, conversation history, word usage, jargon, tone, or other assumptions and/or expectations that facilitate a cooperative conversation between human users and a system.

**[014]** According to another aspect of the invention, a conversation type may be identified for any given utterance. Categorizing and developing conceptual models for various types of exchanges may consistently align user expectations and domain capabilities. One or more intelligent hypotheses may be generated as to a conversation type by considering conversational goals, participant roles, and/or an allocation of information among the participants. Based on the conversational goals, participant roles, and allocation of information, the intelligent hypotheses may consider various factors to classify a conversation (or utterance) into general types of conversations that can interact with one another to form many more variations and permutations of conversation types (e.g., a conversation type may change dynamically as information is reallocated from one participant to another, or as conversational goals change based on the reallocation of information).

**[015]** According to another aspect of the invention, the intelligent hypotheses may include one or more hypotheses of a user's intent in an utterance. In addition, the intelligent hypotheses may use short-term and/or long-term shared knowledge to proactively build and evaluate interaction with a user as a conversation progresses or over time. The hypotheses may model human-to-human interaction to include a varying degree of certainty for each hypothesis. That is, just as humans rely on knowledge shared by participants to examine how much and what kind of information was available, the intelligent hypotheses may leverage the identified conversation type and shared knowledge to generate a degree of certainty for each hypothesis.

[016] According to another aspect of the invention, syntactically, grammatically, and contextually sensitive “intelligent responses” may be generated from the intelligent hypotheses that can be used to generate a conversational experience for a user, while also guiding the user to reply in a manner favorable for recognition. The intelligent responses may create a conversational feel by adapting to a user’s manner of speaking, framing responses appropriately, and having natural variation and/or personality (e.g., by varying tone, pace, timing, inflection, word use, jargon, and other variables in a verbal or audible response).

[017] According to another aspect of the invention, the intelligent responses may adapt to a user’s manner of speaking by using contextual signifiers and grammatical rules to generate one or more sentences that may cooperate with the user. By taking advantage of shared knowledge about how a user utters a request, the responses may be modeled using similar techniques used to recognize requests. The intelligent responses may rate possible responses statistically and/or randomize responses, which creates an opportunity to build an exchange with natural variation and conversational feel. This provides advantages over existing voice user interfaces where input and output is incongruous, as the input is “conversational” and the output is “computerese.”

[018] According to another aspect of the invention, the intelligent responses may frame responses to influence a user reply utterance for easy recognition. For example, the responses may be modeled to illicit utterances from the user that may be more likely to result in a completed request. Thus, the responses may conform to a cooperative nature of human dialog and a natural human tendency to “parrot” what was just heard as part of a next utterance. Moreover, knowledge of current context may enhance responses to generate more meaningful conversational responses. Framing the responses may also deal with misrecognitions according to human models. For example, humans frequently remember a number of recent utterances, especially when one or more previous utterances were misrecognized or unrecognized. Another participant in the conversation may limit correction to a part of the utterance that was misrecognized or unrecognized, or over subsequent utterances and/or other interactions, clues may be provided to indicate the initial interpretation was incorrect. Thus, by storing and

analyzing multiple utterances, utterances from earlier in a conversation may be corrected as the conversation progresses.

[019] According to another aspect of the invention, the intelligent responses may include multi-modal, or cross-modal, responses to a user. In one implementation, responses may be aware of and control one or more devices and/or interfaces, and users may respond by using whichever input method, or combination of input methods, is most convenient.

[020] According to another aspect of the invention, the intelligent responses may correct a course of a conversation without interrupting conversational flow. That is, even though the intelligent responses may be reasonably “sure,” the intelligent responses may nonetheless sometimes be incorrect. While existing voice user interfaces tend to fail on average conversational missteps, normal human interactions may expect missteps and deal with them appropriately. Thus, responses after misrecognitions may be modeled after clarifications, rather than errors, and words may be chosen in subsequent responses to move conversation forward and establish an appropriate domain to be explored with the user.

[021] Other objects and advantages of the invention will be apparent to those skilled in the art based on the following drawings and detailed description.

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

[022] Figure 1 is an exemplary block diagram of a system architecture according to one aspect of the invention.

[023] Figure 2 is an exemplary block diagram of a conversational speech engine according to one aspect of the invention.

[024] Figure 3 is an exemplary block diagram of a cooperative conversational model according to one aspect of the invention.

#### **DETAILED DESCRIPTION**

[025] Referring to Figure 1, an exemplary system architecture for implementing a cooperative conversational voice user interface is illustrated according to one aspect of the invention. The system may receive an input 105 from a user, where in one implementation, input 105 may be an utterance received by an input device (e.g., a microphone), where the utterance may include

one or more requests. Input 105 may also be a multi-modal input, where at least part of the multi-modal input is an utterance. For example, the input device may include a combination of a microphone and a touch-screen device, and input 105 may include an utterance that includes a request relating to a portion of a display on the touch-screen device that the user is touching. For instance, the touch-screen device may be a navigation device, and input 105 may include an utterance of "Give me directions to here," where the user may be requesting directions to a desired destination on the display of the navigation device.

**[026]** The utterance component of input 105 may be processed by a speech recognition engine 110 (which may alternatively be referred to herein as Automatic Speech Recognizer 110, or as shown in Fig. 1, ASR 110) to generate one or more preliminary interpretations of the utterance. The speech recognition engine 110 may process the utterance using any suitable technique known in the art. For example, in one implementation, the speech recognition engine 110 may interpret the utterance using techniques of phonetic dictation to recognize a phoneme stream, as described in U.S. Patent Application Serial No. 11/513,269, entitled "Dynamic Speech Sharpening," filed August 31, 2006, which issued as U.S. Patent No. 7,634,409 on December 15, 2009, and which is hereby incorporated by reference in its entirety. The one or more preliminary interpretations generated by the speech recognition engine 110 may then be provided to a conversational speech engine 115 for further processing. Conversational speech engine 115 may include a conversational language processor 120 and/or a voice search engine 125, described in greater detail in Fig. 2 below. Conversational speech engine 115 may communicate with one or more databases 130 to generate an adaptive conversational response, which may be returned to the user as an output 140. In one implementation, output 140 may be a multi-modal output and/or an interaction with one or more applications 145 to complete the request. For example, output 140 may include a combination of an audible response and a display of a route on a navigation device. For example, the utterance may include a request to perform an action, and output 140 may include a conversational response reporting success or failure, as well as an execution of the action. In addition, in various implementations, the speech recognition engine 110, conversational speech engine 115, and/or databases 130 may reside locally (e.g., on a user device), remotely (e.g., on a server), or a

hybrid model of local and remote processing may be used (e.g., lightweight applications may be processed locally while computationally intensive applications may be processed remotely).

[027] Referring to Figure 2, an exemplary block diagram is provided illustrating a conversational speech engine 215 according to one aspect of the invention. Conversational speech engine 215 may include a conversational language processor 220 that generates an adaptive conversational response to a request or series of requests using a free form voice search module 245, a noise tolerance module 250, and/or a context determination process 255. According to one aspect of the invention, modules 245-255 may communicate with a voice search engine 225 that includes one or more context domain agents 230 and/or one or more vocabularies 235 to aid in interpreting utterances and generating responses, as described in “Enhancing the VUE™ (Voce-User-Experience) Through Conversational Speech,” by Tom Freeman and Larry Baldwin, which is herein incorporated by reference in its entirety. Conversational speech engine 215 may generate an adaptive conversational response to one or more requests, where the requests may depend on unspoken assumptions, incomplete information, context established by previous utterances, user profiles, historical profiles, environmental profiles, or other information. Moreover, conversational speech engine 215 may track which requests have been completed, which requests are being processed, and/or which requests cannot be processed due to incomplete or inaccurate information, and the response may be generated accordingly.

[028] According to one aspect of the invention, free form voice search module 245 may understand an utterance made using typical, day-to-day language (i.e., in free form), and may account for variations in how humans normally speak, the vocabulary they use, and the conditions in which they speak. Because variables such as stress, distraction, and serendipity are always different and infinitely varied, free form search module 245 may be designed with a goal of understanding that no human will come to the same Human-to-Machine interface situation in the same way twice. Thus, free form search module 245 may implement one or more features that model casual human speech. In various implementations, free form search module 245 may include, among other things, a free form utterance feature, a one-step access

feature, an inferencing intended operations feature, an alternative expression feature, and/or an imperfect speech feature.

**[029]** The free form utterance feature may understand specialized jargon and/or slang, tolerate variations in word order (e.g., whether a subject of a request comes before or after a verb may be irrelevant), and tolerate verbalized pauses (e.g., “um,” “ah,” “eh,” and other utterances without meaning). For example, the free form utterance feature may treat formalized English verb-before-noun requests in an equivalent manner to free form requests where a noun may precede a verb. For example, user utterances of “Change it to the Squizz” and “You know, um, that Squizz channel, ah, switch it there” may be treated equivalently (where Squizz is a channel on XM Satellite Radio). In either case, the free form utterance feature is able to identify “Squizz” as a subject of the utterance and “Change it” or “switch it” as a verb or request for the utterance (e.g., by cooperating with context determination process 255, or other features, and identifying a relevant context domain agent 230 and/or vocabulary 235 to interpret the utterance).

**[030]** The one-step access feature may understand utterances that include compound requests with multiple variables. For example, a user utterance may be “What is the forecast for Boston this weekend?” The one-step access feature may identify “weather” as a context (e.g., by cooperating with context determination process 255, or other features, and identifying “forecast” as a synonym of “weather”), and search for a city equal to “Boston” and a time equal to “weekend.” By identifying all relevant information for completing a task from a single utterance, the one-step access feature may overcome drawbacks of existing voice user interfaces, such as Command and Control systems that use verbal menus to restrict information that a person can provide at a given point (e.g., a Command and Control system for a phone directory service may say: “State please,” . . . “City please,” . . . “What listing,” etc.). Moreover, some utterances may include compound requests, and the one-step access feature may decompose the compound requests into sub-tasks. For example, a user utterance of “I need to be at a meeting tomorrow in San Francisco at 8:00 am” may be decomposed into a set of sub-tasks such as (1) checking availability and reserving a flight on an evening before the meeting, (2) checking availability and reserving a hotel, (3) checking availability and reserving a car, etc.,

where users may further designate preferences for various tasks (e.g., first check availability on an airline for which the user is a frequent flyer). Depending on a level of shared knowledge about a user's preferences and/or historical patterns, the one-step access feature may infer additional tasks from a request. For example, in the above example, the one-step access feature may also check a weather forecast, and if the weather is "nice" (as defined by the user preferences and/or as inferred from historical patterns), the one-step access feature may schedule a tee-time at a preferred golf course in San Francisco.

**[031]** The inferencing intended operations feature may identify an intended request from incomplete or ambiguous requests. For example, when a user utters "Route <indecipherable> Chicago <indecipherable> here," where the user intended to say "Route calculation to Chicago from here," the inferencing intended operations feature may model what is required to calculate a route (an origination point and a destination point). Because the utterance includes the origination point and the destination point, a request to calculate a route from the user's present location to Chicago may be inferred. Similarly, when the inferencing intended operations feature does not have sufficient information to infer a complete request, an adaptive conversational response may be generated to prompt the user for missing information. For example, when an utterance includes a request for a stock quote but not a company name (e.g., "Get me the stock price for <indecipherable>"), the response may be "What company's stock quote do you want?" The user may then provide an utterance including the company name, and the request may be completed. In one implementation, the response may ask for missing information in a way that most restricts possible interpretations (e.g., in a request for a task that requires both a city and a state, the state may be asked for first because there are fewer states than cities). Moreover, the inferencing intended operations feature may model compound tasks and/or requests by maintaining context and identifying relevant and/or missing information at both a composite and sub-task level.

**[032]** The alternative expression feature may recognize common alternatives for nouns and verbs to reflect variations in usage patterns according to various criteria. For example, users may vary expression based on age, socio-economics, ethnicity, user whims, or other factors. Thus, the alternative expression feature may support variations in expression where word order

is unimportant or unanticipated. Alternatives in expression based on various criteria or demographics may be loaded into context domain agents 230 and/or vocabularies 235, and the alternative expression feature may update context domain agents 230 and/or vocabularies 235 based on inferred or newly discovered variations. In one implementation, conversational speech engine 215 may include a subscription interface to update changes to context domain agents 230 and/or vocabularies 235 (e.g., a repository may aggregate various user utterances and deploy updates system wide). In operation, the alternative expression feature may allow nouns and/or verbs to be represented in different ways to give simplistic, yet representative, examples. For example, a user interested in a weather forecast for Washington, D.C. may provide any of the following utterances, each of which are interpreted equivalently: "What's the weather like in DC," "Is it raining inside the Beltway," "Gimme the forecast for the capital," etc. Similarly, utterances of "Go to my home," "Go home," "Show route to home," and "I would like to know my way home" may all be interpreted equivalently, where a user profile may include the user's home address and a navigation route to the home address may be calculated.

**[033]** The imperfect speech feature may be able to infer requests from contradictory or otherwise inaccurate information, such as when an utterance includes starts and stops, restarts, stutters, run-on sentences, or other imperfect speech. For example, a user may sometimes change their mind, and thus alter the request in mid-utterance, and the imperfect speech feature may nonetheless be able to infer a request based on models of human speech. For example, for an utterance of "Well, I wanna . . . Mexi . . . no, steak restaurant please, I'm hungry," existing voice user interfaces make no assumptions regarding models of human speech and would be unable to infer whether the user wanted a Mexican or steak restaurant. The imperfect speech feature overcomes these drawbacks by using various models of human understanding that may indicate that a last criterion is most likely to be correct, or intonation, emphasis, stress, use of the word "not," or other models may indicate which criterion is most likely to be correct. Thus, in the above example, the imperfect speech feature may infer that the user wants a steak restaurant.

**[034]** According to one aspect of the invention, noise tolerance module 250 may be closely related to the imperfect speech feature, and may operate to discard words or noise that has no meaning in a given context so as not to create confusion. Moreover, noise tolerance module 250 may filter out environmental and non-human noise to further reduce a likelihood of confusion. In one implementation, noise tolerance module 250 may cooperate with other modules and features to filter out words that do not fit into a context. For example, one or more contexts may be identified, and words that have no meaning with respect to system capabilities, random human utterances without meaning and other noise may be filtered out. Thus, noise tolerance module 250 may model real-world conditions to identify meaningful requests. For example, noise tolerance module 250 may filter other human conversations and/or utterances within a range of one or more microphones. For example, a single device may include multiple microphones, or multiple devices may each include one or more microphones, and the noise tolerance module may collate inputs and cooperatively filter out sound by comparing a speech signal from the various microphones. Noise tolerance module 250 may also filter out non-human environmental noise within the range of the microphones, out-of-vocabulary words, which could be a result of speaker ambiguity or malapropisms, or other noise that may be unrelated to a target request. Noise models in noise tolerance module 250 may define performance benchmarks based on human criteria. For example, if a driver of a car, traveling at 65 miles-per-hour, with windows cracked is 92% likely to be understood by a passenger, then noise tolerance module 250 may have a similar performance under those conditions.

**[035]** According to one aspect of the invention, conversational speech engine 215 may include a context determination process 255 that determines one or more contexts for a request to establish meaning within a conversation. The one or more contexts may be determined by having one or more context domain agents compete to determine a most appropriate domain for a given utterance, as described in U.S. Patent Application Serial No. 11/197,504, entitled "Systems and Methods for Responding to Natural Language Speech Utterance," filed August 5, 2005, which issued as U.S. Patent No. 7,640,160 on December 29, 2009 and U.S. Patent Application Serial No. 11/212,693, entitled "Mobile Systems and Methods of Supporting

Natural Language Human-Machine Interactions,” filed August 29, 2005, which issued as U.S. Patent No. 7,949,529 on May 24, 2011, both of which are hereby incorporated by reference in their entirety. Once a given context domain agent “wins” the competition, the winning agent may be responsible for establishing or inferring further contexts and updating short-term and long-term shared knowledge. If there is a deadlock between context domain agents, an adaptive conversational response may prompt the user to assist in disambiguating between the deadlocked agents. For example, a user utterance of “What about traffic?” may have a distinct meaning in various contexts. That is, “traffic” may have a first meaning when the user is querying a system’s media player (i.e., “traffic” would be a Rock and Roll band led by singer/songwriter Steve Winwood), a second meaning when the user is querying a search interface regarding Michael Douglas films (i.e., “traffic” would be a film directed by Steven Soderbergh), a third meaning when the user is querying a navigation device for directions to an airport (i.e., “traffic” would be related to conditions on roads along a route to the airport).

**[036]** Moreover, context determination process 255 may infer intended operations and/or context based on previous utterances and/or requests, whereas existing systems consider each utterance independently, potentially making the same errors over and over again. For example, if a given interpretation turns out to be incorrect, the incorrect interpretation may be removed as a potential interpretation from one or more grammars associated with the speech recognition engine and/or from possible subsequent interpretations determined by context determination process 255, thereby assuring that a mistake will not be repeated for an identical utterance.

**[037]** Context determination process 255 may overcome drawbacks of existing systems by continually updating one or more models of an existing context, where establishing context may be a by-product of a conversation, which cannot be established a priori. Context determination process 255 may establish a first context domain, change to a second context domain, change back to the first context domain, and so on, as tasks are completed, partially completed, requested, etc., and a context stack may track conversation topics and attempt to fit a current utterance into a most-recent context, next-most-recent topic, etc., traversing the context stack until a most likely intent can be established. For example, a user may utter

“What’s the traffic report,” and context determination process 255 may establish Traffic as a context, and return an output including a traffic report, which does not happen to mention traffic on Interstate-5. The user may then utter “What about I-5?” and context determination process 255 may know that the current context is Traffic, a traffic report including information about Interstate-5 may be searched for, and the traffic report indicating that Interstate-5 is crowded may be returned as an output. The user may then utter “Is there a faster way?” and context determination module 255 may know that the current context is still Traffic, and may search for routes to a specified destination with light traffic and avoiding Interstate-5. Moreover, context determination process 255 may build context based on user profiles, environmental profiles, historical profiles, or other information to further refine the context. For example, the profiles may indicate that Interstate-5 is a typical route taken Monday through Friday.

**[038]** The profiles may be particularly meaningful when attempting to disambiguate between contexts where a word has different meanings in different contexts. For example, a user may utter “What’s the weather in Seattle?” and context determination process 255 may establish Weather as a context, as well as establishing Seattle as an environmental context. The user may then utter “and Portland?” and context determination process 255 may return a weather report for Portland, Oregon based on the Weather and an environmental proximity between Portland, Oregon and Seattle, Washington. The user may then ask “What time does the game start?” and a search for sports events with teams from Seattle and/or Portland may occur, with results presented conversationally according to methods described in greater detail below in Figure 3. Correlatively, had user originally uttered “What’s the weather in Portsmouth, New Hampshire,” in the second utterance, context determination process 255 may instead retrieve a weather report for Portland, Maine based on an environmental proximity to New Hampshire. Moreover, when environmental profiles, contextual shared knowledge, and/or other short-term and/or long-term shared knowledge does not provide enough information to disambiguate between possibilities, responses may prompt the user with a request for further information (e.g., “Did you mean Portland, Maine, or Portland, Oregon?”).

**[039]** Context determination process 255 may cooperate with context domain agents 230, where each context domain agent 230 may define a collection of related functions that may be useful for users. Moreover, each context domain agent 230 may include a relevant vocabulary 235 and thought collections that model word groupings, which when evaluated together, may disambiguate one context domain from another (e.g., a Music context domain agent 230 may include a vocabulary 235 for songs, artists, albums, etc., whereas a Stock context domain agent 230 may include a vocabulary 235 for company names, ticker symbols, financial metrics, etc.). Thus, accuracy in identifying meaning may be enhanced by eliminating out-of-context words and noise words when searching for relevant combinations. In contrast, existing systems attempt to assign meaning to every component of an utterance (e.g., including out-of-context words and noise words), which results in nearly infinite possible combinations and greater likelihood of confusion. Moreover, context domain agents 230 may include metadata for each criteria to further assist in interpreting utterances, inferring intent, completing incomplete requests, etc. (e.g., a Space Needle vocabulary word may include metadata for Seattle, landmark, tourism, Sky City restaurant, etc.). Given a disambiguated criterion, context determination process 255 may thus be able to automatically determine other information needed to complete a request, discard importance of word order, and perform other enhancements for conversational speech.

**[040]** Context domain agents 230 may also be self-aware, assigning degrees of certainty to one or more generated hypotheses, where a hypothesis may be developed to account for variations in environmental conditions, speaker ambiguity, accents, or other factors. Conceptually, context domain agents 230 may be designed to model utterances as a hard-of-hearing person would at a noisy party. By identifying a context, capabilities within the context, vocabularies within the context, what tasks are done most often historically in the context, what task was just completed, etc., a context domain agent 230 may establish intent from rather meager phonetic clues. Moreover, the context stack may be one of a plurality of components for establishing context, and thus not a constraint upon the user. All context domains may be accessible, allowing the user to switch contexts at any time without confusion. Thus, just as in human-to-human conversation, context domains may be rapidly selected,

without menu-driven dead ends, when an utterance is unambiguous. For example, a user may utter, "Please call Rich Kennewick on his cell phone," and a system response of "Do you wish me to call Rich Kennewick on his cell?" may be generated. The user may decide at that point to call Rich Kennewick later, and instead, listen to some music. Thus, the user may then utter, "No, play the Louis Armstrong version of Body and Soul from my iPod," and a system response of "Playing Body and Soul by Louis Armstrong" may be generated as Body and Soul is played through a media player. In this example, the later utterance has no contextual connection to the first utterance, yet because request criteria in the utterances are unambiguous, contexts can be switched easily without relying on the context stack.

**[041]** Referring to Figure 3, an exemplary cooperative conversational model 300 is illustrated according to an aspect of the invention. Cooperative conversational model 300 may build upon free form voice search 245, noise tolerance 250, and context determination 255 to implement a conversational Human-to-Machine interface that reflects how humans interact with each other and their normal behavior in conversation. Simply put, cooperative conversational model 300 enables humans and machines to participate in a conversation with an accepted purpose or direction, with each participant contributing to the conversation for the benefit of the conversation. That is, cooperative conversational model 300 incorporates technology and process-flow that takes advantage of human presumptions about utterances that humans rely upon, both as speakers and listeners, thereby creating a Human-to-Machine interface that is analogous to everyday human-to-human conversation. In one implementation, a cooperative conversation may take incoming data (shared knowledge) 305 to inform a decision (intelligent hypothesis building) 310, and then may refine the decision and generate a response (adaptive response building) 315.

**[042]** According to one aspect of the invention, shared knowledge 305 includes both short-term and long-term knowledge about incoming data. Short-term knowledge may accumulate during a single conversation, while long-term knowledge may accumulate over time to build user profiles, environmental profiles, historical profiles, cognitive profiles, etc.

**[043]** Input received during a single conversation may be retained in a Session Input Accumulator. The Session Input Accumulator may include cross-modality awareness, where in

addition to accumulating input relating to user utterances, requests, locations, etc., the Session Input Accumulator may accumulate a current user interface state relating to other modal inputs to further build shared knowledge models and more accurate adaptive responses (e.g., when a user utters a request relating to a portion of a touch-screen device, as described above). For example, the Session Input Accumulator may accumulate inputs including recognition text for each utterance, a recorded speech file for each utterance, a list-item selection history, a graphical user interface manipulation history, or other input data. Thus, the Session Input Accumulator may populate Intelligent Hypothesis Builder 310 with current and relevant information, build long-term shared knowledge by identifying information with long-term significance, provide Adaptive Response Builder 315 with relevant state and word usage information, retain recent contexts for use with Intelligent Hypothesis Builder 310, and/or retain utterances for reprocessing during multi-pass evaluations. Moreover, because cooperative conversations 300 model human conversations, short-term session data may be expired after a psychologically appropriate amount of time, thereby humanizing system behavior. For example, a human is unlikely to recall a context of a conversation from two years ago, but because the context would be identifiable by a machine, session context is expired after a predetermined amount of time to reduce a likelihood of contextual confusion based on stale data. However, relevant information from an expired session context may nonetheless be added to user, historical, environmental, cognitive, or other long-term knowledge models.

**[044]** Long-term shared knowledge may generally be user-centric, rather than session-based. That is, inputs may be accumulated over time to build user, environmental, cognitive, historical, or other long-term knowledge models. Long-term and short-term shared knowledge (collectively, shared knowledge 305) may be used simultaneously anytime a user engages in a cooperative conversation 300. Long-term shared knowledge may include explicit and/or implicit user preferences, a history of most recently used agents, contexts, requests, tasks, etc., user-specific jargon related to vocabularies and/or capabilities of an agent and/or context, most often used word choices, or other information. The long-term shared knowledge may be used to populate Intelligent Hypothesis Builder 310 with current and relevant information, provide Adaptive Response Builder 315 with appropriate word choices when the appropriate word

choices are unavailable via the Session Input Accumulator, refine long-term shared knowledge models, identify a frequency of specific tasks, identify tasks a user frequently has difficulty with, or provide other information and/or analysis to generate more accurate conversational responses.

**[045]** As described above, shared knowledge 305 may be used to populate Intelligent Hypothesis Builder 310, such that a user and a voice user interface may share assumptions and expectations such as topic knowledge, conversation history, word usage, jargon, tone (e.g., formal, humorous, terse, etc.), or other assumptions and/or expectations that facilitate interaction at a Human-to-Machine interface.

**[046]** According to an aspect of the invention, one component of a successful cooperative conversation may be identifying a type of conversation from an utterance. By categorizing and developing conceptual models for various types of exchanges, user expectations and domain capabilities may be consistently aligned. Intelligent Hypothesis Builder 310 may generate a hypothesis as to a conversation type by considering conversational goals, participant roles, and/or an allocation of information among the participants. Conversational goals may broadly include: (1) getting a discrete piece of information or performing a discrete task, (2) gathering related pieces of information to make a decision, and/or (3) disseminating or gathering large amounts of information to build expertise. Participant roles may broadly include: (1) a leader that controls a conversation, (2) a supporter that follows the leader and provides input as requested, and/or (3) a consumer that uses information. Information may be held by one or more of the participants at the outset of a conversation, where a participant may hold most (or all) of the information, little (or none) of the information, or the information may be allocated roughly equally amongst the participants. Based on the conversational goals, participant roles, and allocation of information, Intelligent Hypothesis Builder 310 may consider various factors to classify a conversation (or utterance) into general types of conversations that can interact with one another to form many more variations and permutations of conversation types (e.g., a conversation type may change dynamically as information is reallocated from one participant to another, or as conversational goals change based on the reallocation of information).

**[047]** For example, in one implementation, a query conversation may include a conversational goal of getting a discrete piece of information or performing a particular task, where a leader of the query conversation may have a specific goal in mind and may lead the conversation toward achieving the goal. The other participant may hold the information and may support the leader by providing the information. In a didactic conversation, a leader of the conversation may control information desired by a supporter of the conversation. The supporter's role may be limited to regulating an overall progression of the conversation and interjecting queries for clarification. In an exploratory conversation, both participants share leader and supporter roles, and the conversation may have no specific goal, or the goal may be improvised as the conversation progresses. Based on this model, Intelligent Hypothesis Builder 310 may broadly categorize a conversation (or utterance) according to the following diagram:

QUERY		
	<i>Participant A</i>	<i>Participant B</i>
	<u>User</u>	<u>Voice User Interface</u>
GOAL	Get information/action	Provide information/action
ROLE	Leader/Consumer	Supporter/Dispenser
INFORMATION ALLOCATION	Less	More

DIDACTIC		
	<i>Participant A</i>	<i>Participant B</i>
	<u>User</u>	<u>Voice User Interface</u>
GOAL	Get information	Provide information
ROLE	Follower/Consumer	Leader/Dispenser
INFORMATION ALLOCATION	Less	More

EXPLORATORY		
	<i>Participant A</i>	<i>Participant B</i>
	<u>User</u>	<u>Voice User Interface</u>
GOAL	Gather/share information	Gather/share information
ROLE	Follower/Consumer <u>and</u> Leader/Dispenser	Follower/Consumer <u>and</u> Leader/Dispenser
INFORMATION ALLOCATION	Equal or alternating	Equal or alternating

**[048]** Intelligent Hypothesis Builder 310 may use an identified conversation type to assist in generating a set of hypotheses as to a user's intent in an utterance. In addition, Intelligent Hypothesis Builder 310 may use short-term shared knowledge from the Session Input Accumulator to proactively build and evaluate interaction with a user as a conversation progresses, as well as long-term shared knowledge to proactively build and evaluate interaction with the user over time. Intelligent Hypothesis Builder 310 may thus adaptively arrive at a set of N-best hypotheses about user intent, and the N-best hypotheses may be provided to an Adaptive Response Builder 315. In addition, Intelligent Hypothesis Builder 310 may model human-to-human interaction by calculating a degree of certainty for each of the hypotheses. That is, just as humans rely on knowledge shared by participants to examine how much and what kind of information was available, Intelligent Hypothesis Builder 310 may leverage the identified conversation type and short-term and long-term shared knowledge to generate a degree of certainty for each hypothesis.

**[049]** According to another aspect of the invention, Intelligent Hypothesis Builder 310 may generate one or more explicit hypotheses of a user's intent when an utterance contains all information (including qualifiers) needed to complete a request or task. Each hypothesis may have a corresponding degree of certainty, which may be used to determine a level of unprompted support to provide in a response. For example, a response may include a confirmation to ensure the utterance was not misunderstood or the response may adaptively prompt a user to provide missing information.

**[050]** According to another aspect of the invention, Intelligent Hypothesis Builder 310 may use short-term knowledge to generate one or more implicit hypotheses of a user's intent when an utterance may be missing required qualifiers or other information needed to complete a request or task. Each hypothesis may have a corresponding degree of certainty. For instance, when a conversation begins, short-term knowledge stored in the Session Input Accumulator may be empty, and as the conversation progresses, the Session Input Accumulator may build a history of the conversation. Intelligent Hypothesis Builder 310 may use data in the Session Input Accumulator to supplement or infer additional information about a current utterance. For example, Intelligent Hypothesis Builder 310 may evaluate a degree of certainty based on a

number of previous requests relevant to the current utterance. In another example, when the current utterance contains insufficient information to complete a request or task, data in the Session Input Accumulator may be used to infer missing information so that a hypothesis can be generated. In still another example, Intelligent Hypothesis Builder 310 may identify syntax and/or grammar to be used by Adaptive Response Builder 315 to formulate personalized and conversational response. In yet another example, when the current utterance contains a threshold amount of information needed to complete a request or task, data in the Session Input Accumulator may be relied upon to tune a degree of certainty.

**[051]** According to another aspect of the invention, Intelligent Hypothesis Builder 310 may use long-term shared knowledge to generate one or more implicit hypotheses of a user's intent when an utterance is missing qualifiers or other information needed to complete a request or task. Each hypothesis may have a corresponding degree of certainty. Using long-term knowledge may be substantially similar to using short-term shared knowledge, except that information may be unconstrained by a current session, and an input mechanism may include information from additional sources other than conversational sessions. For example, Intelligent Hypothesis Builder 310 may use information from long-term shared knowledge at any time, even when a new conversation is initiated, whereas short-term shared knowledge may be limited to an existing conversation (where no short-term shared knowledge would be available when a new conversation is initiated). Long-term shared knowledge may come from several sources, including user preferences or a plug-in data source (e.g., a subscription interface to a remote database), expertise of a user (e.g., based on a frequency of errors, types of tasks requested, etc., the user may be identified as a novice, intermediate, experienced, or other type of user), agent-specific information and/or language that may also apply to other agents (e.g., by decoupling information from an agent to incorporate the information into other agents), frequently used topics passed in from the Session Input Accumulator, frequently used verbs, nouns, or other parts of speech, and/or other syntax information passed in from the Session Input Accumulator, or other sources of long-term shared knowledge may be used.

**[052]** According to another aspect of the invention, knowledge-enabled utterances, as generated by Intelligent Hypothesis Builder 310, may include one or more explicit (supplied by

a user), and one or more implicit (supplied by Intelligent Hypothesis Builder 310) contextual signifiers, qualifiers, criteria, and other information that can be used to identify and evaluate relevant tasks. At that point, Intelligent Hypothesis Builder 310 may provide an input to Adaptive Response Builder 315. The input received by Adaptive Response Builder 315 may include at least a ranked list of hypotheses, including explicit and/or implicit hypotheses, each of which may have a corresponding degree of certainty. A hypothesis may be assigned one of four degrees of certainty: (1) “sure,” where contextual signifiers and qualifiers relate to one task, context and qualifiers relate to one task, and a confidence level associated with a preliminary interpretation generated at the speech recognition engine exceeds a predetermined threshold; (2) “pretty sure,” where contextual signifiers and qualifiers relate to more than one task (select top-ranked task) and criteria relates to one request, and/or the confidence level associated with the preliminary interpretation generated at the speech recognition engine is below the predetermined threshold; (3) “not sure,” where additional contextual signifiers or qualifiers are needed to indicate or rank a task; and (4) “no hypothesis,” where little or no information can be deciphered. Each degree of certainty may further be classified as explicit or implicit, which may be used to adjust a response. The input received by Adaptive Response Builder 310 may also include a context, user syntax and/or grammar, context domain agent specific information and/or preferences (e.g., a travel context domain agent may know a user frequently requests information about France, which may be shared with a movie context domain agent so that responses may occasionally include French movies).

**[053]** According to another aspect of the invention, Adaptive Response Builder 315 may build syntactically, grammatically, and contextually sensitive “intelligent responses” that can be used with one or more agents to generate a conversational experience for a user, while also guiding the user to reply in a manner favorable for recognition. In one implementation, the intelligent responses may include a verbal or audible reply played through an output device (e.g., a speaker), and/or an action performed by a device, computer, or machine (e.g., downloading a web page, showing a list, executing an application, etc.). In one implementation, an appropriate response may not require conversational adaptation, and default replies and/or randomly selected response sets for a given task may be used.

**[054]** According to another aspect of the invention, Adaptive Response Builder 310 may draw on information maintained by Intelligence Hypothesis Builder 310 to generate responses that may be sensitive to context, task recognition of a current utterance, what a user already knows about a topic, what an application already knows about the topic, shared knowledge regarding user preferences and/or related topics, appropriate contextual word usage (e.g., jargon), words uttered by the user in recent utterances, conversational development and/or course correction, conversational tone, type of conversation, natural variation in wording of responses, or other information. As a result, Adaptive Response Builder 315 may generate intelligent responses that create conversational feel, adapt to information that accumulates over a duration of a conversation, maintain cross-modal awareness, and keep the conversation on course.

**[055]** According to another aspect of the invention, Adaptive Response Builder 315 may create a conversational feel by adapting to a user's manner of speaking, framing responses appropriately, and having natural variation and/or personality (e.g., by varying tone, pace, timing, inflection, word use, jargon, and other variables in a verbal or audible response). Adapting to a user's manner of speaking may include using contextual signifiers and grammatical rules to generate one or more sentences for use as response sets that may cooperate with the user. By taking advantage of short-term (from the Session Input Accumulator) and long-term (from one or more profiles) shared knowledge about how a user utters a request, the responses may be modeled using techniques used to recognize requests. Adaptive Response Builder 315 may rate possible responses statistically and/or randomize responses, which creates an opportunity to build an exchange with natural variation and conversational feel. This may be a significant advantage over existing voice user interfaces with incongruous input and output, where the input is "conversational" and the output is "computerese." The following examples may demonstrate how a response may adapt to a user's input word choices and manner of speaking:

<u>User</u>	<b>Do you know</b> <i>[mumbled words]</i> Seattle <i>[more mumbled words]</i> ?
<u>Voice User Interface</u>	Did you want Seattle sports scores, weather, traffic, or news?

<u>User</u>	<b>Find me</b> <i>[mumbled words]</i> Seattle <i>[more mumbled words]</i> ?
<u>Voice User Interface</u>	I <i>found</i> Seattle, did you want sports scores, weather, traffic, or news?

<u>User</u>	<b>Get me</b> <i>[mumbled words]</i> Seattle <i>[more mumbled words]</i> ?
<u>Voice User Interface</u>	I've <i>got</i> Seattle, did you want me to <i>get</i> sports scores, weather, traffic, or news?

[056] According to another aspect of the invention, Adaptive Response Builder 315 may frame responses to influence a user to reply with an utterance that may be easily recognized. For example, a user may utter, “Get me the news” and a voice user interface response may be “Which of these categories? Top news stories, international news, political news, or sports news?” The response may be likely to illicit utterances from the user, such as “Top news stories” or “International news,” which are more likely to result in a completed request. Thus, the responses may conform to a cooperative nature of human dialog, and a natural human tendency to “parrot” what was just heard as part of a next utterance. Moreover, knowledge of current context may enhance responses to generate more meaningful conversational responses, such as in the following exchange:

<u>User</u>	What’s the weather like in Dallas?
<u>Voice User Interface</u>	In Dallas, it’s sunny and 90 degrees.
<u>User</u>	What theaters are showing the movie “The Fantastic Four” there?
<u>Voice User Interface</u>	10 theaters in Dallas are showing “The Fantastic Four.” Do you want show times for a particular theater?

**[057]** Framing the responses may also deal with misrecognitions according to human models. For example, humans frequently remember a number of recent utterances, especially when one or more previous utterances were misrecognized or unrecognized. Another participant in the conversation may limit correction to a part of the utterance that was misrecognized or unrecognized, or over subsequent utterances and/or other interactions, clues may be provided to indicate the initial interpretation was incorrect. Thus, by storing and analyzing multiple utterances, utterances from earlier in a conversation may be corrected as the conversation progresses.

**[058]** According to another aspect of the invention, Adaptive Response Builder 315 may generate multi-modal, or cross-modal, responses to a user. In one implementation, responses may be aware of and control one or more devices and/or interfaces, and users may respond by using whichever input method, or combination of input methods, is most convenient. For example, a response asking the user to direct an utterance with a “Yes” or “No” in a multi-modal environment may also display alternatives visually.

**[059]** According to another aspect of the invention, Adaptive Response Builder 315 may correct a course of a conversation without interrupting conversational flow. Adaptive Response Builder 315 may generate intelligent responses based on the ranked list of hypotheses and corresponding degrees of certainty, which may be used to correct a course of a conversation without interrupting conversational flow. That is, even though the intelligent responses may be reasonably “sure,” the intelligent responses may nonetheless sometimes be incorrect. While existing voice user interfaces tend to fail on average conversational missteps, normal human interactions may expect missteps and deal with them appropriately. Thus, responses after a misrecognition may be modeled after clarifications, rather than errors, and words may be chosen in subsequent responses that move conversation forward and establish an appropriate domain to be explored with the user. For example, course correction may result in the following exchange:

<u>User</u>	Can you <b>get</b> <i>[mumbled words here]</i> Mariners <i>[more mumbled words]</i> ?
<u>Voice User Interface</u>	<i>I've got</i> the score for the Mariners game? 4-2 Mariners.
<u>User</u>	No, the start time for tomorrow's game.
<u>Voice User Interface</u>	Oh, 7:05.

**[060]** The above disclosure has been described in terms of specific exemplary aspects, implementations, and embodiments of the invention. However, those skilled in the art will recognize various changes and modifications that may be made without departing from the scope and spirit of the invention. Therefore, the specification and drawings are to be regarded as exemplary only, and the scope of the invention is to be determined solely by the appended claims.

**CLAIMS**

What is claimed is:

1. A computer-implemented method of facilitating natural language system responses utilizing accumulated short-term and long-term knowledge, the method being implemented by a computer system that includes one or more physical processors executing one or more computer program instructions which, when executed, perform the method, the method comprising:
  - accumulating, by the computer system, short-term knowledge based on one or more natural language utterances received during a predetermined time period;
  - expiring, by the computer system, one or more items of short-term knowledge that are based on one or more natural language utterances received prior to the predetermined time period;
  - accumulating, by the computer system, long-term knowledge based on one or more natural language utterances received prior to the predetermined time period, wherein the long-term knowledge includes at least one of the one or more expired items of short-term knowledge;
  - receiving, at the computer system, a first natural language utterance via an input device;
  - determining, by the computer system, based on the short-term knowledge and the long-term knowledge, a first context for the first natural language utterance;
  - determining, by the computer system, based on the first context, an interpretation of the first natural language utterance; and
  - generating, by the computer system, a first response to the first natural language utterance based on the interpretation.
2. The method of claim 1, wherein the one or more natural language utterances received during the predetermined time period are related to a single conversation between a user and the computer system.

3. The method of claim 1, wherein the long-term knowledge comprises one or more of user preferences, an indication of utilized domain agents, contexts of prior natural language utterances, requests of prior natural language utterances, and/or tasks performed in response to prior natural language utterances.
4. The method of claim 1, the method further comprising:
  - receiving, by the computer system, a second natural language utterance in responsive to the first response;
  - identifying, by the computer system, one or more user preferences based on the second natural language utterance; and
  - updating, by the computer system, the long-term knowledge based on the identified user preferences.
5. The method of claim 1, wherein the long-term knowledge is associated with a first user, the method further comprising:
  - generating, by the computer system, a profile associated with the first user based on the long-term knowledge, wherein the first context for the first natural language utterance is determined based further on the profile associated with the first user.
6. The method of claim 1, the method further comprising:
  - generating, by the computer system, one or more of a user profile, an environmental profile, a historical profile, and/or a cognitive profile based on the long-term knowledge, wherein subsequent natural language utterances are processed based at least on the one or more of the user profile, the environmental profile, the historical profile. and/or the cognitive profile.

7. The method of claim 1, wherein accumulating the long-term knowledge comprises:  
accumulating, by the computer system, first long-term knowledge associated with a first user based on one or more prior natural language utterances received from the first user; and  
accumulating, by the computer system, second long-term knowledge associated with a second user based on one or more prior natural language utterances received from the second user, wherein the long-term knowledge includes the first long-term knowledge associated with the first user and the second long-term knowledge associated with the second user.
8. The method of claim 1, the method further comprising:  
receiving, by the computer system, information from a remote data source, wherein the long-term knowledge is based further on the information obtained from the remote data source.
9. The method of claim 1, wherein determining the interpretation of the natural language utterance comprises:  
determining, by the computer system, an interpretation of one or more recognized words of the first natural language utterance based on the first context.
10. The method of claim 1, the method further comprising:  
causing, by the computer system, the response to the first natural language utterance to be provided to the user.

11. A system for facilitating natural language system responses utilizing accumulated short-term and long-term knowledge, the system comprising:

one or more physical processors programmed with one or more computer program instructions which, when executed, configure the one or more physical processors to:

accumulate short-term knowledge based on one or more natural language utterances received during a predetermined time period;

expire one or more items of short-term knowledge that are based on one or more natural language utterances received prior to the predetermined time period;

accumulate long-term knowledge based on one or more natural language utterances received prior to the predetermined time period, wherein the long-term knowledge includes at least one of the one or more expired items of short-term knowledge;

receive a first natural language utterance via an input device;

determine a first context for the first natural language utterance based on the short-term knowledge and the long-term knowledge;

determine an interpretation of the first natural language utterance based on the first context; and

generate a first response to the first natural language utterance based on the interpretation.

12. The system of claim 11, wherein the one or more natural language utterances received during the predetermined time period are related to a single conversation between a user and the computer system.

13. The system of claim 11, wherein the long-term knowledge comprises one or more of user preferences, an indication of utilized domain agents, contexts of prior natural language utterances, requests of prior natural language utterances, and/or tasks performed in response to prior natural language utterances.

14. The system of claim 11, wherein the one or more physical processors are further configured to:

receive a second natural language utterance in responsive to the first response;

identify one or more user preferences based on the second natural language utterance;

and

update the long-term knowledge based on the identified user preferences.

15. The system of claim 11, wherein the long-term knowledge is associated with a first user, and wherein the one or more physical processors are further configured to:

generate a profile associated with the first user based on the long-term knowledge,

wherein the first context for the first natural language utterance is determined based further on the profile associated with the first user.

16. The system of claim 11, wherein the one or more physical processors are further configured to:

generate one or more of a user profile, an environmental profile, a historical profile,

and/or a cognitive profile based on the long-term knowledge, wherein subsequent natural language utterances are processed based at least on the one or more of the user profile, the environmental profile, the historical profile. and/or the cognitive profile.

17. The system of claim 11, wherein to accumulating the long-term knowledge, the one or more physical processors are configured to:

accumulate first long-term knowledge associated with a first user based on one or more prior natural language utterances received from the first user; and

accumulate second long-term knowledge associated with a second user based on one or more prior natural language utterances received from the second user, wherein the long-term knowledge includes the first long-term knowledge associated with the first user and the second long-term knowledge associated with the second user.

18. The system of claim 11, wherein the one or more physical processors are further configured to:

receive information from a remote data source, wherein the long-term knowledge is based further on the information obtained from the remote data source.

19. The system of claim 11, wherein to determine the interpretation of the natural language utterance, the one or more physical processors are configured to:

determine an interpretation of one or more recognized words of the first natural language utterance based on the first context.

20. The system of claim 11, wherein the one or more physical processors are further configured to:

cause the response to the first natural language utterance to be provided to the user.

## **ABSTRACT**

A cooperative conversational voice user interface is provided. The cooperative conversational voice user interface may build upon short-term and long-term shared knowledge to generate one or more explicit and/or implicit hypotheses about an intent of a user utterance. The hypotheses may be ranked based on varying degrees of certainty, and an adaptive response may be generated for the user. Responses may be worded based on the degrees of certainty and to frame an appropriate domain for a subsequent utterance. In one implementation, misrecognitions may be tolerated, and conversational course may be corrected based on subsequent utterances and/or responses.

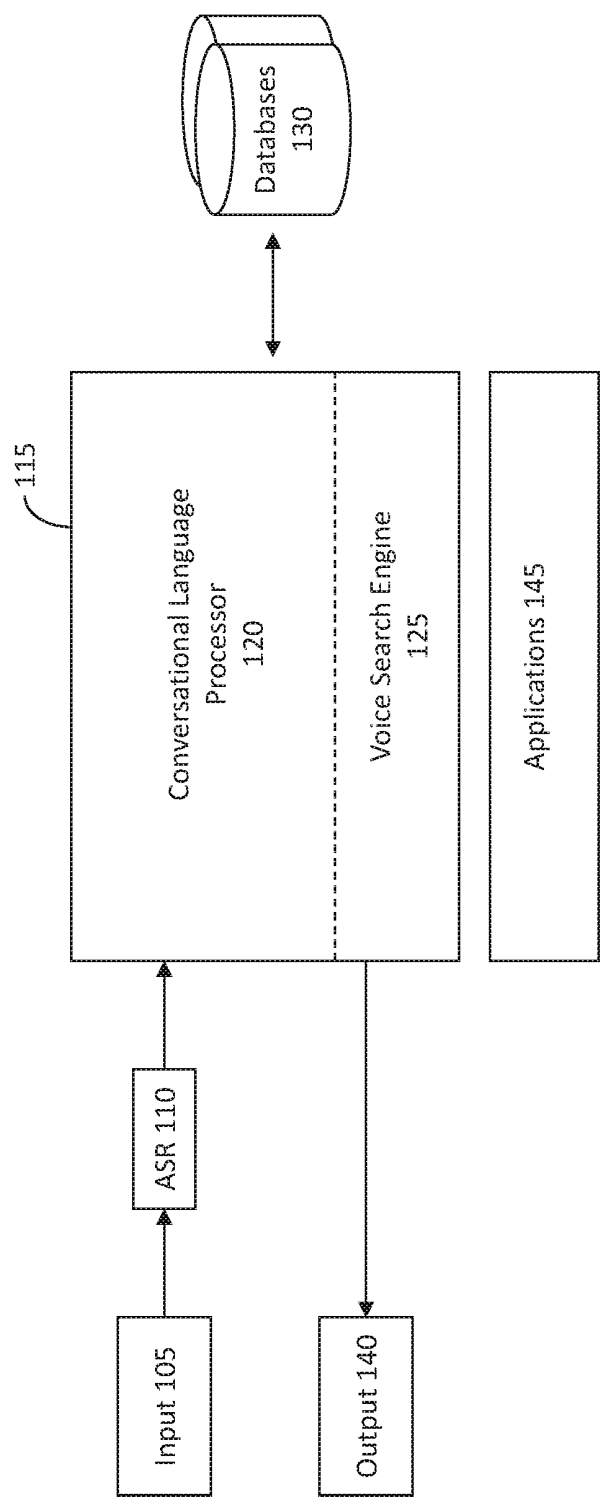


Figure 1

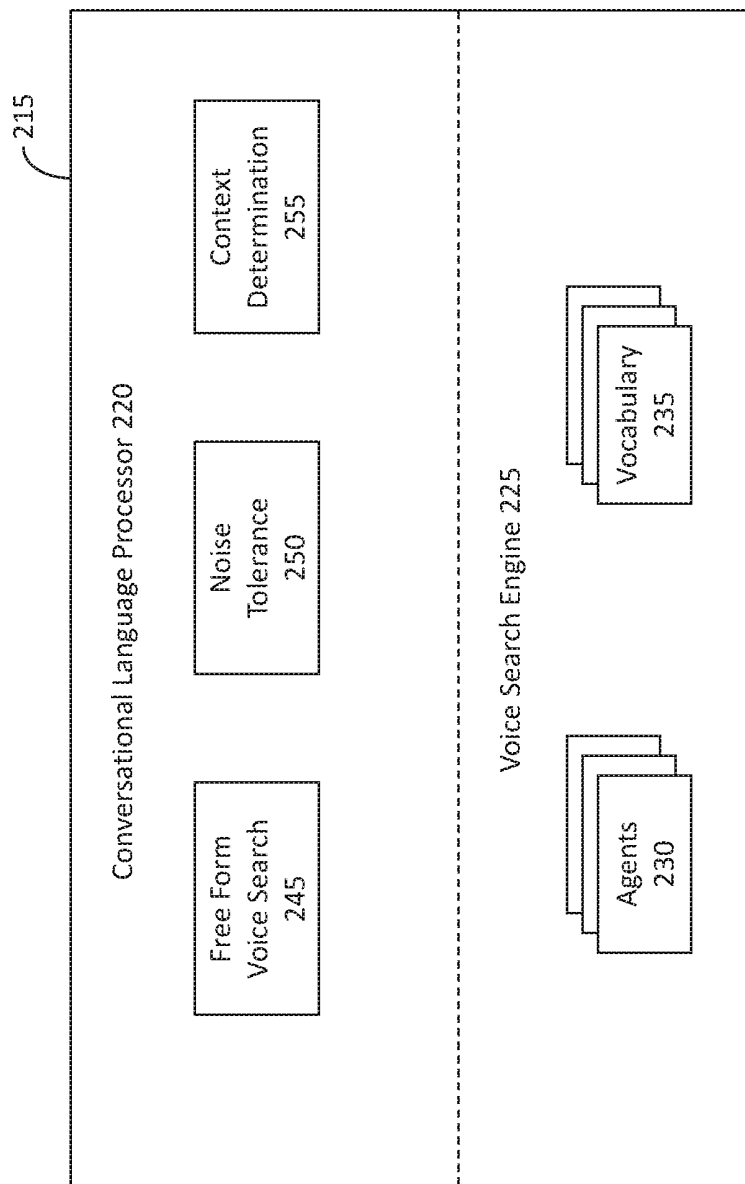
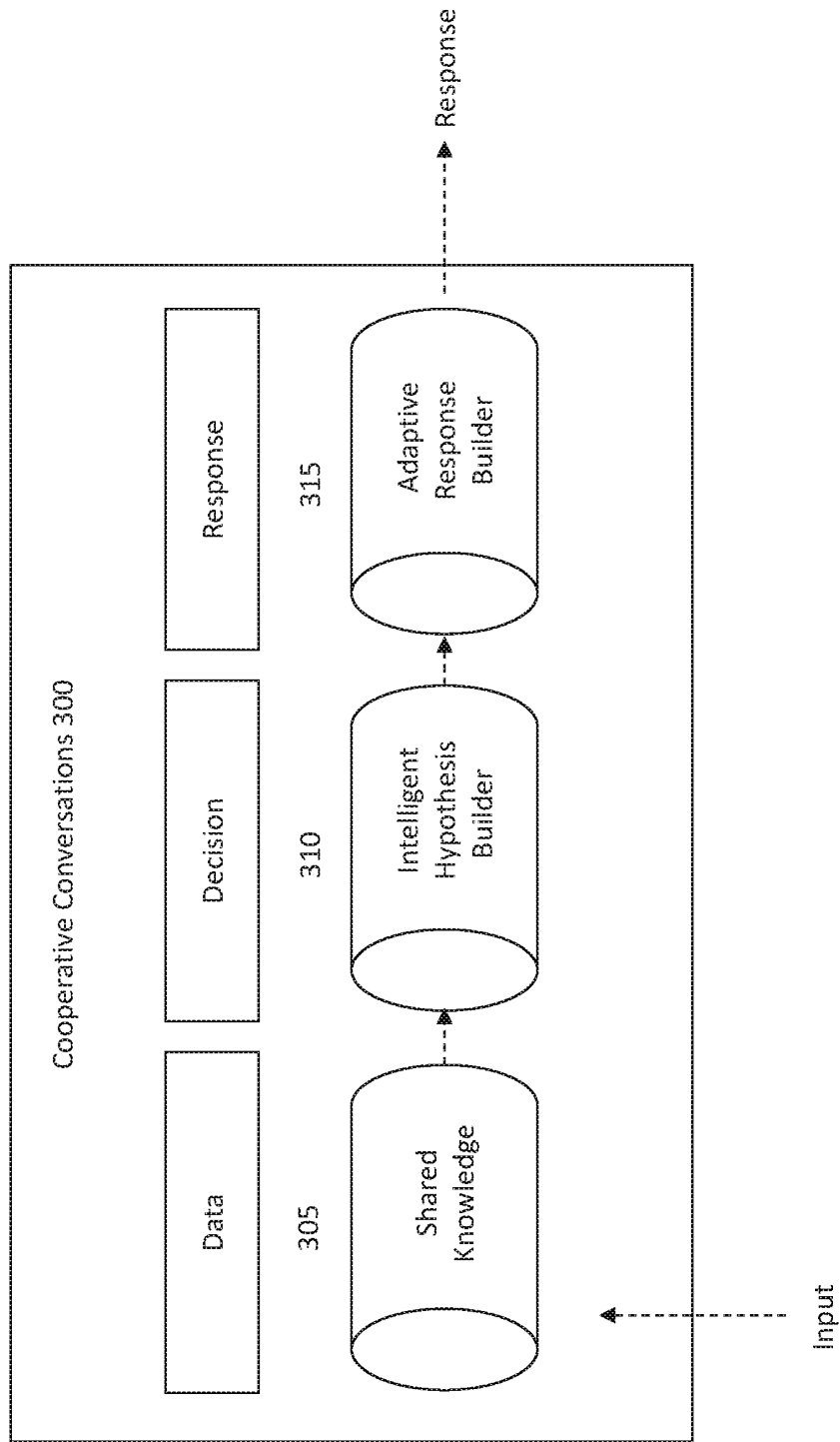


Figure 2



**Figure 3**

ATTORNEY DOCKET NUMBER: 090611-0424826

**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 A COOPERATIVE CONVERSATIONAL  
VOICE USER INTERFACE**

As a below named inventor, I hereby declare that:

This declaration is directed to United States application number 13/987,645 filed on August 19, 2013.

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: **LARRY BALDWIN**

Signature: 

Date: 5-16-14

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

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

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

(3) Legal Name of Inventor: **MICHAEL TJALVE**

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

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

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(1) Legal Name of Inventor: **LARRY BALDWIN**

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

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

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

(3) Legal Name of Inventor: **MICHAEL TJALVE**

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

**DECLARATION (37 C.F.R. 1.63) FOR UTILITY PATENT APPLICATION USING AN  
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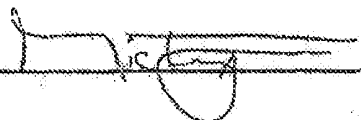
(1) Legal Name of Inventor: **LARRY BALDWIN**

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

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

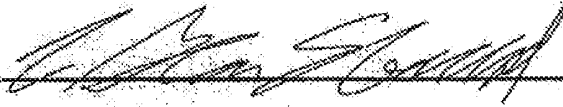
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(3) Legal Name of Inventor: **MICHAEL TJALVE**

Signature:  \_\_\_\_\_ Date: 5/18/2014

ATTORNEY DOCKET NUMBER: 090611-0424826

(4) Legal Name of Inventor: BLANE EBERSOLD

Signature: 

Date: 6/11/2014

(5) Legal Name of Inventor: CHRIS WEIDER

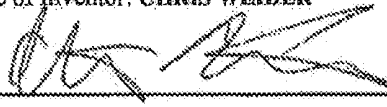
Signature: \_\_\_\_\_

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

(4) Legal Name of Inventor: **BLANE EBERSOLD**

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

(5) Legal Name of Inventor: **CHRIS WEIDER**

Signature:  \_\_\_\_\_ Date: 5/13/14

## TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	To Be Assigned
Filing Date	August 29, 2019
First Named Inventor	Larry BALDWIN
Title	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
Art Unit	To Be Assigned
Examiner Name	To Be Assigned
Attorney Docket Number	62KC-303780

### SIGNATURE of Applicant or Patent Practitioner

Signature	/Mark A. Patrick/	Date (Optional)	August 29, 2019
Name	Mark A. Patrick	Registration Number	72,958
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

**NOTE:** This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

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\*Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.

## POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

See the Transmittal Letter

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I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

133759

OR



I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:



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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

VB Assets, LLC



Inventor or Joint Inventor (title not required below)



Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)



Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)



Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

### SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

Name

Michael Kyle Kennewick

Title

Chief Executive Officer of VB Assets, LLC

**NOTE:** Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.



Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	<b>Application Number</b>	TBD
	<b>Filing Date</b>	08/29/2019
	<b>First Named Inventor</b>	Larry BALDWIN
	<b>Art Unit</b>	TBD
Page 1 of 1	<b>Matter Number</b>	62KC-303780

<b>GENERAL</b>
<p>Pursuant to 37 C.F.R. 1.97 and 1.98 and to the duty of disclosure set forth in 37 C.F.R. 1.56, the Examiner in charge of the above-identified application is requested to consider and make of record the references listed herewith. A copy of each listed reference, other than U.S. patents/applications and references cited in a parent application, is enclosed.</p> <p>Although the information submitted herewith may be "material" to the Examiner's consideration of the subject application, this submission is not intended to constitute an admission that such information is "prior art" as to the claimed invention.</p> <p>In accordance with 37 C.F.R. 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.</p>

<b>TIMING</b>
<p>In accordance with 37 CFR 1.97(b), this Information Disclosure Statement is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits; or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.</p>

<b>CERTIFICATION STATEMENT</b>
<p>No certification statement is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(b).</p>

<b>FEE</b>
<p>No fee is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(b).</p>

<b>ADDITIONAL COMMENTS</b>
<p>The Foreign Patent Documents and the Non-Patent Literature Documents were cited by or submitted to the Office in Application No. 16/417,173, filed May 20, 2019, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus copies of these documents are not attached. 37 C.F.R. § 1.98(d).</p>

<b>SIGNATURE</b>			
<b>Signature</b>	/ Mark A. Patrick /	<b>Date</b>	2019-08-29
<b>Name</b>	Mark A. Patrick	<b>Registration Number</b>	72,958

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		TBD
	Filing Date		2019-08-29
	First Named Inventor	Larry BALDWIN	
	Art Unit		TBD
	Examiner Name	TBD	
	Attorney Docket Number		62KC-303780

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	1	4430669		1984-02-07	Cheung	
	2	4821027		1989-04-11	Mallory	
	3	4829423		1989-05-09	Tennant	
	4	4887212		1989-12-12	Zamora	
	5	4910784		1990-03-20	Doddington	
	6	5027406		1991-06-25	Roberts	
	7	5155743		1992-10-13	Jacobs	
	8	5164904		1992-11-17	Sumner	

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39	5675629		1997-10-07	Raffel	
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41	5708422		1998-01-13	Blonder	

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51	5774841		1998-06-30	Salazar	
52	5774859		1998-06-30	Houser	

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71	5897613		1999-04-27	Chan	
72	5898760		1999-04-27	SMETS RAYMOND J	
73	5899991		1999-05-04	Robert Karch	
74	5902347		1999-05-11	Backman	

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75	5911120		1999-06-08	Jarett	
76	5918222		1999-06-29	Fukui	
77	5926784		1999-07-20	Richardson	
78	5933822		1999-08-03	Braden-Harder	
79	5950167		1999-09-07	Yaker	
80	5953393		1999-09-14	Culbreth	
81	5960384		1999-09-28	Douglas E. Brash	
82	5960397		1999-09-28	Rahim	
83	5960399		1999-09-28	Barclay	
84	5960447		1999-09-28	Holt	
85	5963894		1999-10-05	Richardson	

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86	5963940		1999-10-05	Liddy	
87	5982906		1999-11-09	ONO YOSHIHIRO	
88	5983190		1999-11-09	TrowerII	
89	5987404		1999-11-16	DellaPietra	
90	5991721		1999-11-23	Asano	
91	5995119		1999-11-30	Cosatto	
92	5995928		1999-11-30	Nguyen	
93	5995943		1999-11-30	Bull	
94	6009382		1999-12-28	Martino	
95	6014559		2000-01-11	Amin	
96	6018708		2000-01-25	Dahan	

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97	6021384		2000-02-01	Gorin	
98	6028514		2000-02-22	Lemelson	
99	6035267		2000-03-07	Watanabe	
100	6044347		2000-03-28	Abella	
101	6049602		2000-04-11	Foladare	
102	6049607		2000-04-11	Marash	
103	6058187		2000-05-02	Chen	
104	6067513		2000-05-23	Ishimitsu	
105	6073098		2000-06-06	Buchsbaum	
106	6076059		2000-06-13	Glickman	
107	6078886		2000-06-20	Dragosh	

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108	6081774		2000-06-27	deHita	
109	6085186		2000-07-04	Christianson	
110	6101241		2000-08-08	Boyce	
111	6108631		2000-08-22	Ruhl	
112	6119087		2000-09-12	Kuhn	
113	6119101		2000-09-12	Peckover	
114	6122613		2000-09-19	Baker	
115	6134235		2000-10-17	Goldman	
116	6144667		2000-11-07	Doshi	
117	6144938		2000-11-07	Surace	
118	6154526		2000-11-28	Dahlke	

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119	6160883		2000-12-12	Jackson	
120	6167377		2000-12-26	Gillick	
121	6173266		2001-01-09	Marx	
122	6173279		2001-01-09	Levin	
123	6175858		2001-01-16	Bulfer	
124	6185535		2001-02-06	Hedin	
125	6188982		2001-02-13	Chiang	
126	6192110		2001-02-20	Abella	
127	6192338		2001-02-20	Haszto	
128	6195634		2001-02-27	Dudemaine	
129	6195651		2001-02-27	Handel	

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130	6199043		2001-03-06	Happ	
131	6208964		2001-03-27	Sabourin	
132	6208972		2001-03-27	Grant	
133	6219346		2001-04-17	Maxemchuk	
134	6219643		2001-04-17	Cohen	
135	6219645		2001-04-17	BYERS CHARLES CALVIN	
136	6226612		2001-05-01	Srenger	
137	6233556		2001-05-15	Teunen	
138	6233559		2001-05-15	Balakrishnan	
139	6233561		2001-05-15	Junqua	
140	6236968		2001-05-22	Kanevsky	

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141	6243679		2001-06-05	Mehryar Mohri	
142	6246981		2001-06-12	Papineni	
143	6246990		2001-06-12	Happ	
144	6266636		2001-07-24	Kosaka	
145	6269336		2001-07-31	Ladd	
146	6272455		2001-08-07	Hoshen	
147	6272461		2001-08-07	Phillip C. Meredith	
148	6275231		2001-08-14	Obradovich	
149	6278377		2001-08-21	DeLine	
150	6278968		2001-08-21	Franz	
151	6286002		2001-09-04	Axaopoulos	

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152	6288319		2001-09-11	Catona	
153	6292767		2001-09-18	Jackson	
154	6301560		2001-10-09	Masters	
155	6308151		2001-10-23	Smith	
156	6311159		2001-10-30	VanTichelen	
157	6314402		2001-11-06	Monaco	
158	6321196		2001-11-20	Franceschi	
159	6356869		2002-03-12	Chapados	
160	6362748		2002-03-26	Huang	
161	6366882		2002-04-02	Bijl	
162	6366886		2002-04-02	Dragosh	

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163	6374214		2002-04-16	Friedland	
164	6374226		2002-04-16	Andrew J. Hunt	
165	6377913		2002-04-23	Coffman	
166	6377919		2002-04-23	BURNETT GREG C	
167	6381535		2002-04-30	Durocher	
168	6385596		2002-05-07	Wiser	
169	6385646		2002-05-07	Brown	
170	6389398		2002-05-14	LUSTGARTEN PAUL C	
171	6393403		2002-05-21	Majaniemi	
172	6393428		2002-05-21	Miller	
173	6397181		2002-05-28	Li	

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174	6404878		2002-06-11	Jackson	
175	6405170		2002-06-11	Phillips	
176	6408272		2002-06-18	White	
177	6411810		2002-06-25	Maxemchuk	
178	6411893		2002-06-25	Ruhl	
179	6415257		2002-07-02	Junqua	
180	6418210		2002-07-09	Sayko	
181	6420975		2002-07-16	DeLine	
182	6429813		2002-08-06	Feigen	
183	6430285		2002-08-06	Bauer	
184	6430531		2002-08-06	Polish	

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185	6434523		2002-08-13	Monaco	
186	6434524		2002-08-13	Weber	
187	6434529		2002-08-13	Walker	
188	6442522		2002-08-27	Carberry	
189	6446114		2002-09-03	Bulfer	
190	6453153		2002-09-17	Bowker	
191	6453292		2002-09-17	Ramaswamy	
192	6456711		2002-09-24	Cheung	
193	6456974		2002-09-24	Baker	
194	6466654		2002-10-15	Cooper	
195	6466899		2002-10-15	Yano	

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196	6470315		2002-10-22	Netsch	
197	6487494		2002-11-26	Odinak	
198	6487495		2002-11-26	Gale	
199	6498797		2002-12-24	Anerousis	
200	6499013		2002-12-24	Weber	
201	6501833		2002-12-31	Phillips	
202	6501834		2002-12-31	Milewski	
203	6505155		2003-01-07	Vanbuskirk	
204	6510417		2003-01-21	Woods	
205	6513006		2003-01-28	Howard	
206	6522746		2003-02-18	Marchok	

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207	6523061		2003-02-18	Halverson	
208	6532444		2003-03-11	Weber	
209	6539348		2003-03-25	Bond	
210	6549629		2003-04-15	Finn	
211	6553372		2003-04-22	Brassell	
212	6556970		2003-04-29	Sasaki	
213	6556973		2003-04-29	Lewin	
214	6560576		2003-05-06	Cohen	
215	6560590		2003-05-06	Shwe	
216	6567778		2003-05-20	ChaoChang	
217	6567797		2003-05-20	Schuetze	

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218	6567805		2003-05-20	Johnson	
219	6570555		2003-05-27	Prevost	
220	6570964		2003-05-27	Murveit	
221	6571279		2003-05-27	Herz	
222	6574597		2003-06-03	Mohri	
223	6574624		2003-06-03	Johnson	
224	6578022		2003-06-10	Foulger	
225	6581103		2003-06-17	Dengler	
226	6584439		2003-06-24	Geilhufe	
227	6587858		2003-07-01	Strazza	
228	6591185		2003-07-08	Ari Israel Polidi	

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229	6591239		2003-07-08	McCall	
230	6594257		2003-07-15	Doshi	
231	6594367		2003-07-15	Marash	
232	6598018		2003-07-22	Junqua	
233	6601026		2003-07-29	Appelt	
234	6601029		2003-07-29	John Brian Pickering	
235	6604075		2003-08-05	Brown	
236	6604077		2003-08-05	Dragosh	
237	6606598		2003-08-12	Holthouse	
238	6611692		2003-08-26	Raffel	
239	6614773		2003-09-02	Maxemchuk	

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240	6615172		2003-09-02	Bennett	
241	6622119		2003-09-16	Ramaswamy	
242	6629066		2003-09-30	Jackson	
243	6631346		2003-10-07	Karaorman	
244	6631351		2003-10-07	Ramachandran	
245	6633846		2003-10-14	Bennett	
246	6636790		2003-10-21	Lightner	
247	6643620		2003-11-04	Contolini	
248	6647363		2003-11-11	Claassen	
249	6650747		2003-11-18	Bala	
250	6658388		2003-12-02	Kleindienst	

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251	6678680		2004-01-13	Woo	
252	6681206		2004-01-20	Gorin	
253	6691151		2004-02-10	Cheyser	
254	6701294		2004-03-02	Ball	
255	6704396		2004-03-09	Parolkar	
256	6704576		2004-03-09	Brachman	
257	6704708		2004-03-09	Pickering	
258	6707421		2004-03-16	Drury	
259	6708150		2004-03-16	Hirayama	
260	6721001		2004-04-13	Berstis	
261	6721633		2004-04-13	Funk	

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262	6721706		2004-04-13	Strubbe	
263	6726636		2004-04-27	DerGhazarian	
264	6732088		2004-05-04	Natalie S. Glance	
265	6735592		2004-05-11	Neumann	
266	6739556		2004-05-25	Langston	
267	6741931		2004-05-25	Kohut	
268	6742021		2004-05-25	Halverson	
269	6745161		2004-06-01	Arnold	
270	6751591		2004-06-15	Gorin	
271	6751612		2004-06-15	Schuetze	
272	6754485		2004-06-22	Obradovich	

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273	6754627		2004-06-22	Woodward	
274	6754647		2004-06-22	Walter Tackett	
275	6757544		2004-06-29	Rangarajan	
276	6757718		2004-06-29	Halverson	
277	6785651		2004-08-31	Kuansan Wang	
278	6795808		2004-09-21	Strubbe	
279	6801604		2004-10-05	Maes	
280	6801893		2004-10-05	Backfried	
281	6804330		2004-10-12	Shannon Jones	
282	6810375		2004-10-26	Ejerhed	
283	6813341		2004-11-02	Mahoney	

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284	6816830		2004-11-09	Kempe	
285	6823308		2004-11-23	KEILLER ROBERT ALEXANDER	
286	6829603		2004-12-07	Chai	
287	6832230		2004-12-14	Zilliacus	
288	6833848		2004-12-21	Wolff	
289	6850603		2005-02-01	Eberle	
290	6856990		2005-02-15	Barile	
291	6865481		2005-03-08	Kawazoe	
292	6868380		2005-03-15	Kroecker	
293	6868385		2005-03-15	Gerson	
294	6871179		2005-03-22	Kist	

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295	6873837		2005-03-29	Yoshioka	
296	6877001		2005-04-05	Wolf	
297	6877134		2005-04-05	Fuller	
298	6882970		2005-04-19	GARNER PHILIP NEIL	
299	6901366		2005-05-31	Kuhn	
300	6910003		2005-06-21	Arnold	

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1	1433554A	CN		2003-07-30	QUACK COM		
2	1860496A	CN		2006-11-08	GOOGLE INC		
3	1320043A2	EP		2003-06-18	Hewlett-Packard Company		
4	1646037	EP		2006-04-12	France Telecom		
5	2001071289	JP		2001-03-21	SONY CORP		
6	2006146881	JP		2006-06-08	FRANCE TELECOM		
7	2008027454	JP		2008-02-07	QUACK COM		
8	2008058465	JP		2008-03-13	TOSHIBA CORP		
9	2008139928	JP		2008-06-19	YAHOO JAPAN CORP		
10	2011504304	JP		2011-02-03			
11	2012518847	JP		2012-08-16			×

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12	H08263258	JP		1996-10-11	Hitachi Ltd		<input type="checkbox"/>
13	JPH11249773	JP		1999-09-17	Toshiba Corp.		<input type="checkbox"/>
14	0021232	WO		2000-04-13	IBM		<input type="checkbox"/>
15	0046792	WO		2000-08-10	SOLILOQUY INC		<input type="checkbox"/>
16	0129742	WO		2001-04-26	TELLME NETWORKS INC		<input type="checkbox"/>
17	0171609A2	WO		2001-09-27	Quack.com		<input type="checkbox"/>
18	0178065	WO		2001-10-18	ONE VOICE TECHNOLOGIES INC		<input type="checkbox"/>
19	9946763	WO		1999-09-16	LERNOUT & HAUSPIE SPEECHPROD		<input type="checkbox"/>
20	2004072954	WO		2004-08-26	Siemens Aktiengesellschaft		<input type="checkbox"/>
21	2005010702A2	WO		2005-02-03	Google, Inc.		<input type="checkbox"/>
22	2007019318	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>

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23	2007021587	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
24	2007027546	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
25	2007027989	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
26	2008098039	WO		2008-01-24	Voicebox Technologies, Inc.		<input type="checkbox"/>
27	2008118195	WO		2008-01-31	Voicebox Technologies, Inc.		<input type="checkbox"/>
28	2009075912	WO		2009-01-15	Voicebox Technologies, Inc.		<input type="checkbox"/>
29	2009111721	WO		2009-09-11	Google Inc.		<input type="checkbox"/>
30	2009145796	WO		2009-01-29	Voicebox Technologies, Inc.		<input type="checkbox"/>
31	2010096752	WO		2010-01-28	Voicebox Technologies, Inc.		<input type="checkbox"/>
32	2016044290	WO		2016-03-24	Kennewick Michael R		<input type="checkbox"/>
33	2016044316	WO		2016-03-24	Kennewick Michael R Sr, Carter Daniel B		<input type="checkbox"/>

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34	2016044319	WO	2016-03-24	Kennewick Michael R Sr	<input type="checkbox"/>
35	2016044321	WO	2016-03-24	Min Tang	<input type="checkbox"/>
36	2016061309	WO	2016-04-21	Voicebox Technologies Corporation	<input type="checkbox"/>

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
	1	"Statement in Accordance with the Notice from the European Patent Office" dated 1 October 2007 Concerning Business Methods (OJ EPO 11/2007, 592-593), XP002456252	
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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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11	6959276		2005-10-25	Droppo	
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21	6990513		2006-01-24	Belfiore	
22	6996531		2006-02-07	Korall	
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27	7027586		2006-04-11	Bushey	
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32	7036128		2006-04-25	Julia	
33	7043425		2006-05-09	Pao	
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43	7092928		2006-08-15	Elad	
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112	7502730		2009-03-10	WANG KUANSAN	
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138	7697673		2010-04-13	Chiu	
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168	7984287		2011-07-19	Gopalakrishnan	
169	8005683		2011-08-23	Tessel	
170	8015006		2011-09-06	Kennewick	
171	8024186		2011-09-20	Jeremy S. De Bonet	
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173	8032383		2011-10-04	Bhardwaj	

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175	8069046		2011-11-29	Kennewick	
176	8073681		2011-12-06	Baldwin	
177	8077975		2011-12-13	Ma	
178	8082153		2011-12-20	Coffman	
179	8086463		2011-12-27	Ativanichayaphong	
180	8103510		2012-01-24	Sato	
181	8112275		2012-02-07	Kennewick	
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187	8170867		2012-05-01	Germain	
188	8180037		2012-05-15	Delker	
189	8190436		2012-05-29	BANGALORE SRINIVAS	
190	8195468		2012-06-05	Weider	
191	8200485		2012-06-12	Lee	
192	8204751		2012-06-19	Giuseppe Di Fabbrizio	
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197	8326599		2012-12-04	Nadi Tomeh	
198	8326627		2012-12-04	Kennewick	
199	8326634		2012-12-04	DiCristo	
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203	8346563		2013-01-01	Hjelm	
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209	8509403		2013-08-13	Chiu	
210	8515765		2013-08-20	Baldwin	
211	8527274		2013-09-03	Freeman	
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214	8612205		2013-12-17	Gregory Alan Hanneman	
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Attorney Docket Number	62KC-303780

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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

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61	20040205671		2004-10-14	Sukehiro	
62	20040220800		2004-11-04	KONG DONG-GEON	
63	20040243393		2004-12-02	Kuansan Wang	
64	20040243417		2004-12-02	Pitts	
65	20040247092		2004-12-09	Timmins	
66	20040249636		2004-12-09	Ted Applebaum	
67	20050015256		2005-01-20	Kargman	
68	20050021331		2005-01-27	Huang	
69	20050021334		2005-01-27	Iwahashi	
70	20050021470		2005-01-27	Martin	
71	20050021826		2005-01-27	Kumar	

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72	20050033574		2005-02-10	Kim	
73	20050033582		2005-02-10	Gadd	
74	20050043940		2005-02-24	Elder	
75	20050060142		2005-03-17	VISSER ERIK	
76	20050080632		2005-04-14	Endo	
77	20050080821		2005-04-14	BREIL PETER D	
78	20050102282		2005-05-12	Greg Linden	
79	20050114116		2005-05-26	Fiedler	
80	20050125232		2005-06-09	Gadd	
81	20050131673		2005-06-16	Koizumi	
82	20050137850		2005-06-23	Odell	

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83	20050137877		2005-06-23	Oesterling	
84	20050138168		2005-06-23	HOFFMAN PHILIP M	
85	20050143994		2005-06-30	Mori	
86	20050144013		2005-06-30	Fujimoto	
87	20050144187		2005-06-30	Che	
88	20050149319		2005-07-07	Honda	
89	20050169441		2005-08-04	YACOUN SHERIF	
90	20050216254		2005-09-29	Gupta	
91	20050222763		2005-10-06	Robert Uyeki	
92	20050234637		2005-10-20	Michael Obradovich	
93	20050234727		2005-10-20	Chiu	

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94	20050246174		2005-11-03	DeGolia	
95	20050283364		2005-12-22	Longe	
96	20050283532		2005-12-22	Doo Kim	
97	20050283752		2005-12-22	Fruchter	
98	20060041431		2006-02-23	Maes	
99	20060046740		2006-03-02	Karen Johnson	
100	20060047509		2006-03-02	Ding	
101	20060072738		2006-04-06	Louis	
102	20060074670		2006-04-06	Fuliang Weng	
103	20060074671		2006-04-06	Farmaner	
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106	20060106769		2006-05-18	Kevin Gibbs	
107	20060129409		2006-06-15	Kenji Mizutani	
108	20060130002		2006-06-15	Sadahiro Hirayama	
109	20060149633		2006-07-06	VOISIN CRAIG D	
110	20060182085		2006-08-17	Sweeney	
111	20060206310		2006-09-14	Ravikumar	
112	20060217133		2006-09-28	Christenson	
113	20060236343		2006-10-19	Hisao Chang	
114	20060242017		2006-10-26	Libes	
115	20060253247		2006-11-09	Andrew de Silva	

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116	20060253281		2006-11-09	Letzt	
117	20060285662		2006-12-21	Yin	
118	20070011159		2007-01-11	W. Daniel Hillis	
119	20070033005		2007-02-08	Di Cristo	
120	20070033020		2007-02-08	Francois	
121	20070033526		2007-02-08	William Thompson	
122	20070038436		2007-02-15	Cristo	
123	20070038445		2007-02-15	Helbing	
124	20070043569		2007-02-22	Potter	
125	20070043574		2007-02-22	Coffman	
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127	20070050191		2007-03-01	Weider	
128	20070050279		2007-03-01	Qingfeng Huang	
129	20070055525		2007-03-08	Kennewick	
130	20070060114		2007-03-15	RAMER JOREY	
131	20070061067		2007-03-15	Zeinstra	
132	20070061735		2007-03-15	Hoffberg	
133	20070067310		2007-03-22	GUPTA PUNEET	
134	20070073544		2007-03-29	Millett	
135	20070078708		2007-04-05	Yu	
136	20070078709		2007-04-05	Rajaram	
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139	20070100797		2007-05-03	Christopher Thun	
140	20070106499		2007-05-10	DAHLGREN KATHLEEN	
141	20070112555		2007-05-17	Lavi	
142	20070112630		2007-05-17	Lau	
143	20070118357		2007-05-24	Kasravi	
144	20070124057		2007-05-31	Prieto	
145	20070135101		2007-06-14	Ramati	
146	20070146833		2007-06-28	Satomi	
147	20070162296		2007-07-12	Altberg	
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149	20070179778		2007-08-02	Gong	
150	20070185859		2007-08-09	Flowers	
151	20070186165		2007-08-09	Maislos	
152	20070192309		2007-08-16	Fischer	
153	20070198267		2007-08-23	Jones	
154	20070203699		2007-08-30	Hisayuki Nagashima	
155	20070203736		2007-08-30	Ashton	
156	20070208732		2007-09-06	Flowers	
157	20070214182		2007-09-13	Rosenberg	
158	20070250901		2007-10-25	McIntire	
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161	20070276651		2007-11-29	Bliss	
162	20070294615		2007-12-20	Saleel Sathe	
163	20070299824		2007-12-27	Pan	
164	20080014908		2008-01-17	Abraham Vasant	
165	20080034032		2008-02-07	Healey	
166	20080046311		2008-02-21	Shahine	
167	20080059188		2008-03-06	Konopka	
168	20080065386		2008-03-13	Cross	
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170	20080065390		2008-03-13	ATIVANICHAYAPHONG SOONTHORN	

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171	20080086455		2008-04-10	Adrienne C. Meisels	
172	20080091406		2008-04-17	Baldwin	
173	20080103761		2008-05-01	Printz	
174	20080103781		2008-05-01	Wasson	
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176	20080109285		2008-05-08	Reuther	
177	20080115163		2008-05-15	Gilboa	
178	20080126091		2008-05-29	Jason W. Clark	
179	20080126284		2008-05-29	FORBES SCOTT C	
180	20080133215		2008-06-05	Sarukkai	
181	20080140385		2008-06-12	Mahajan	

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182	20080147396		2008-06-19	Wang	
183	20080147410		2008-06-19	Odinak	
184	20080147637		2008-06-19	Xin Li	
185	20080154604		2008-06-26	Sathish	
186	20080162471		2008-07-03	Bernard	
187	20080177530		2008-07-24	Cross	
188	20080184164		2008-07-31	Giuseppe Di Fabbrizio	
189	20080189110		2008-08-07	Freeman	
190	20080189187		2008-08-07	HAO BIAO	
191	20080228496		2008-09-18	Dong Yu	
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194	20080269958		2008-10-30	Dimitar Petrov Filev	
195	20080270135		2008-10-30	GOEL VAIBHAVA	
196	20080270224		2008-10-30	Eric A. Portman	
197	20080294437		2008-11-27	Nakano	
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199	20080306743		2008-12-11	Giuseppe Di Fabrizio	
200	20080319751		2008-12-25	Kennewick	
201	20090006077		2009-01-01	Keaveney	
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203	20090018829		2009-01-15	Michael Kuperstein	

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204	20090024476		2009-01-22	Baar	
205	20090030686		2009-01-29	WENG FULIANG	
206	20090052635		2009-02-26	Jones	
207	20090055176		2009-02-26	HU JUNLING	
208	20090067599		2009-03-12	Agarwal	
209	20090076827		2009-03-19	Bulitta	
210	20090106029		2009-04-23	DeLine	
211	20090117885		2009-05-07	Roth	
212	20090144131		2009-06-04	Chiu	
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216	20090164216		2009-06-25	Rathinavelu Chengalvarayan	
217	20090171664		2009-07-02	Kennewick	
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219	20090197582		2009-08-06	Robert C. Lewis	
220	20090216540		2009-08-27	Tessel	
221	20090248565		2009-10-01	Kai Chuang	
222	20090248605		2009-10-01	Mitchell	
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224	20090259646		2009-10-15	Fujita	
225	20090265163		2009-10-22	Li	

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227	20090273563		2009-11-05	Pryor	
228	20090276700		2009-11-05	Anderson	
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230	20090299745		2009-12-03	Kennewick	
231	20090299857		2009-12-03	Brubaker	
232	20090304161		2009-12-10	Pettyjohn	
233	20090307031		2009-12-10	Winkler	
234	20090313026		2009-12-17	Coffman	
235	20090319517		2009-12-24	Ramananthan V. Guha	
236	20100023320		2010-01-28	Cristo	

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237	20100023331		2010-01-28	OUTA NICOLAE	
238	20100029261		2010-02-04	Mikkelsen	
239	20100036967		2010-02-11	Caine	
240	20100049501		2010-02-25	Kennewick	
241	20100049514		2010-02-25	Kennewick	
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243	20100063880		2010-03-11	Atsmon	
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245	20100094707		2010-04-15	Freer	
246	20100138300		2010-06-03	R. Tyler Wallis	
247	20100145700		2010-06-10	Kennewick	

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248	20100185512		2010-07-22	Borger	
249	20100191856		2010-07-29	GUPTA APURV	
250	20100204986		2010-08-12	Kennewick	
251	20100204994		2010-08-12	Kennewick	
252	20100217604		2010-08-26	Baldwin	
253	20100268536		2010-10-21	SUENDERMANN DAVID	
254	20100286985		2010-11-11	Kennewick	
255	20100299142		2010-11-25	Freeman	
256	20100312547		2010-12-09	VAN OS MARCEL	
257	20100312566		2010-12-09	Odinak	
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259	20100331064		2010-12-30	Michelstein	
260	20110022393		2011-01-27	Waller	
261	20110106527		2011-05-05	Chiu	
262	20110112827		2011-05-12	Kennewick	
263	20110112921		2011-05-12	Kennewick	
264	20110119049		2011-05-19	Ylonen	
265	20110131036		2011-06-02	DiCristo	
266	20110131045		2011-06-02	Cristo	
267	20110231182		2011-09-22	Weider	
268	20110231188		2011-09-22	Kennewick	
269	20110238409		2011-09-29	Jean-Marie Henri Daniel Larcheveque	

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271	20120022857		2012-01-26	Baldwin	
272	20120041753		2012-02-16	Marc Dymetman	
273	20120046935		2012-02-23	Nagao	
274	20120101809		2012-04-26	Kennewick	
275	20120101810		2012-04-26	Kennewick	
276	20120109753		2012-05-03	Kennewick	
277	20120150620		2012-06-14	Mandyam	
278	20120150636		2012-06-14	Freeman	
279	20120239498		2012-09-20	Ramer	
280	20120240060		2012-09-20	Pennington	

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281	20120265528		2012-10-18	Thomas Robert Gruber	
282	20120278073		2012-11-01	Weider	
283	20130006734		2013-01-03	Ocko	
284	20130054228		2013-02-28	Baldwin	
285	20130060625		2013-03-07	Davis	
286	20130080177		2013-03-28	Chen	
287	20130211710		2013-08-15	Kennewick	
288	20130253929		2013-09-26	Weider	
289	20130254314		2013-09-26	Chow	
290	20130297293		2013-11-07	Cristo	
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293	20130332454	2013-12-12	Gunther Stuhec
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295	20140006951	2014-01-02	Hunter
296	20140012577	2014-01-09	Freeman
297	20140025371	2014-01-23	Sunyoung Min
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Attorney Docket Number	62KC-303780	

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Examiner Name	TBD
Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

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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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		TBD
	Filing Date		2019-08-29
	First Named Inventor	Larry BALDWIN	
	Art Unit		TBD
	Examiner Name	TBD	
	Attorney Docket Number		62KC-303780

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140195238		2014-07-10	Makoto Terao	
	2	20140236575		2014-08-21	Tur	
	3	20140249821		2014-09-04	Kennewick	
	4	20140249822		2014-09-04	Baldwin	
	5	20140278413		2014-09-18	Pitschel	

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

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First Named Inventor	Larry BALDWIN	
Art Unit		TBD
Examiner Name	TBD	
Attorney Docket Number		62KC-303780

6	20140278416		2014-09-18	Adrian M. Schuster	
7	20140288934		2014-09-25	Kennewick	
8	20140330552		2014-11-06	Srinivas Bangalore	
9	20140337007		2014-11-13	WAIBEL NAOMI AOKI	
10	20140365222		2014-12-11	Weider	
11	20150019211		2015-01-15	Patrice Y. Simard	
12	20150019217		2015-01-15	Cristo	
13	20150019227		2015-01-15	Anandarajah	
14	20150066479		2015-03-05	PASUPALAK SAM	
15	20150066627		2015-03-05	Freeman	
16	20150073910		2015-03-12	Kennewick	

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Art Unit		TBD
Examiner Name	TBD	
Attorney Docket Number		62KC-303780

17	20150095159		2015-04-02	Kennewick	
18	20150142447		2015-05-21	Kennewick	
19	20150170641		2015-06-18	Kennewick	
20	20150193379		2015-07-09	Sarin S. Mehta	
21	20150199339		2015-07-16	Shachar Mirkin	
22	20150228276		2015-08-13	Baldwin	
23	20150293917		2015-10-15	John P. Bufe	
24	20150348544		2015-12-03	Baldwin	
25	20150348551		2015-12-03	Thomas R. Gruber	
26	20150364133		2015-12-17	Freeman	
27	20160049152		2016-02-18	Kennewick	

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First Named Inventor	Larry BALDWIN	
Art Unit		TBD
Examiner Name	TBD	
Attorney Docket Number		62KC-303780

28	20160078482		2016-03-17	Kennewick	
29	20160078491		2016-03-17	Kennewick	
30	20160078504		2016-03-17	Kennewick	
31	20160078773		2016-03-17	Carter	
32	20160110347		2016-04-21	Kennewick	
33	20160148610		2016-05-26	Kennewick	
34	20160148612		2016-05-26	Guo	
35	20160188292		2016-06-30	Carter	
36	20160188573		2016-06-30	Tang	
37	20160217785		2016-07-28	Robert A. Kennewick	
38	20160335676		2016-11-17	Tom Freeman	

**INFORMATION DISCLOSURE  
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( Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

39	20170004588	2017-01-05	ISAACSON THOMAS M
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If you wish to add additional U.S. Published Application citation information please click the Add button.

**FOREIGN PATENT DOCUMENTS**

Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button

**NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
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**EXAMINER SIGNATURE**

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

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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.
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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
First Named Inventor/Applicant Name:		Larry BALDWIN		
Filer:		Mark Andrew Patrick/Susan Trader		
Attorney Docket Number:		62KC-303780		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

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>1720</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37017911
<b>Application Number:</b>	16555125
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7205
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
<b>First Named Inventor/Applicant Name:</b>	Larry BALDWIN
<b>Customer Number:</b>	133759
<b>Filer:</b>	Mark Andrew Patrick/Susan Trader
<b>Filer Authorized By:</b>	Mark Andrew Patrick
<b>Attorney Docket Number:</b>	62KC-303780
<b>Receipt Date:</b>	29-AUG-2019
<b>Filing Date:</b>	
<b>Time Stamp:</b>	14:08:02
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 1720
RAM confirmation Number	E20198SE08372788
Deposit Account	504561
Authorized User	Susan Trader
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.19 (Document supply fees) 37 CFR 1.20 (Post Issuance fees)	

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	62KC-303780_Utility_Transmittal.pdf	284973	no	2
			eba5a508e3c0198bdcaa8a841255ff64357e dfdc		
Warnings:					
Information:					
2	Application Data Sheet	62KC-303780_ADS.pdf	1823285	no	10
			046de3becbaba9ba4092ee3fae84f9f6fb7 03db		
Warnings:					
Information:					
3		62KC-303780_Specification.pdf	268864	yes	38
			b645722f3b44f005b0cf375bb984e5329a25 836c		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	31	
	Claims		32	37	
	Abstract		38	38	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	62KC-303780_Drawings.pdf	85343	no	3
			58b1737a961863e6a493408b01272178d3 163ffa		
Warnings:					
Information:					
5	Oath or Declaration filed	62KC-303780_Declaration.pdf	1163285	no	5
			752e94467109d4ab482811a341d5356b4b 8d2546		

Warnings:					
Information:					
6	Power of Attorney	62KC-303780_POA.pdf	1084145	no	2
			aa2cd4854311e1665bcd3b063fe9a78938b6ae33		
Warnings:					
Information:					
7	Transmittal Letter	62KC-303780_IDS_Transmittal-Letter.pdf	498843	no	1
			45279db2b96fb298cfb9a181f4ea234d1b708032		
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	62KC-303780_PTO_IDS-Form-A.pdf	1061883	no	36
			8d866a2d91b8107f68a6cb4b903adc82595eb04b		
Warnings:					
Information:					
9	Information Disclosure Statement (IDS) Form (SB08)	62KC-303780_PTO_IDS-Form-B.pdf	1058893	no	31
			4980edb1073e29a1a08c7575cc9e60df4c946b14		
Warnings:					
Information:					
10	Information Disclosure Statement (IDS) Form (SB08)	62KC-303780_PTO_IDS-Form-C.pdf	1059135	no	31
			0bd69efda0b1b81e5e4d2e703e2d9a0aa661085f		
Warnings:					
Information:					
11	Information Disclosure Statement (IDS) Form (SB08)	62KC-303780_PTO_IDS-Form-D.pdf	1053877	no	7
			ab39030a8b192337e21f9ffd3a270c88c1dc5a2c		
Warnings:					
Information:					
12	Fee Worksheet (SB06)	fee-info.pdf	34990	no	2
			60d62e87ff893bb15261b3dc943dcbf521cee38		
Warnings:					
Information:					

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.

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

<b>In Re Patent Application Of:</b>	Larry BALDWIN <i>et al.</i>	)	<b>Attorney Docket No.:</b>	62KC-303780
<b>Serial No.:</b>	16/555,125	)	<b>Confirmation No.:</b>	7205
<b>Filing Date:</b>	August 29, 2019	)	<b>Examiner:</b>	TBD
		)	<b>Art Unit:</b>	TBD

**For:** SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

**PRELIMINARY AMENDMENT****MAIL STOP AMENDMENT**Submitted: August 29, 2019

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

Dear Sir:

Prior to initial examination on the merits, please amend the above-identified application as follows:

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

**Remarks** begin on page 8 of this paper.

It is not believed that extensions of time or fees for net addition of claims are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 504561 (**Ref. No. 62KC-303780**).

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the Application.

### **LISTING OF CLAIMS:**

1. **(Original)** A computer-implemented method of facilitating natural language system responses utilizing accumulated short-term and long-term knowledge, the method being implemented by a computer system that includes one or more physical processors executing one or more computer program instructions which, when executed, perform the method, the method comprising:

accumulating, by the computer system, short-term knowledge based on one or more natural language utterances received during a predetermined time period;

expiring, by the computer system, one or more items of short-term knowledge that are based on one or more natural language utterances received prior to the predetermined time period;

accumulating, by the computer system, long-term knowledge based on one or more natural language utterances received prior to the predetermined time period, wherein the long-term knowledge includes at least one of the one or more expired items of short-term knowledge;

receiving, at the computer system, a first natural language utterance via an input device;

determining, by the computer system, based on the short-term knowledge and the long-term knowledge, a first context for the first natural language utterance;

determining, by the computer system, based on the first context, an interpretation of the first natural language utterance; and

generating, by the computer system, a first response to the first natural language utterance based on the interpretation.

2. **(Original)** The method of claim 1, wherein the one or more natural language utterances received during the predetermined time period are related to a single conversation between a user and the computer system.

3. **(Currently Amended)** The method of claim 1, wherein the long-term knowledge comprises one or more of user preferences, an indication of utilized domain agents, contexts of prior natural language utterances, requests of prior natural language utterances, ~~and/or~~ and tasks performed in response to prior natural language utterances.
4. **(Currently Amended)** The method of claim 1, the method further comprising:  
receiving, by the computer system, a second natural language utterance in ~~responsive~~ response to the first response;  
identifying, by the computer system, one or more user preferences based on the second natural language utterance; and  
updating, by the computer system, the long-term knowledge based on the identified user preferences.
5. **(Currently Amended)** The method of claim 1, wherein the long-term knowledge is associated with a first user, the method further comprising:  
generating, by the computer system, a profile associated with the first user based on the long-term knowledge, wherein the first context for the first natural language utterance is further determined based ~~further~~ on the profile associated with the first user.
6. **(Currently Amended)** The method of claim 1, the method further comprising:  
generating, by the computer system, one or more of a user profile, an environmental profile, a historical profile, and/or a cognitive profile based on the long-term knowledge, wherein subsequent natural language utterances are processed based at least on the one or more of the user profile, the environmental profile, the historical profile~~[[. ]]~~, ~~and/or~~ and the cognitive profile.

7. **(Original)** The method of claim 1, wherein accumulating the long-term knowledge comprises:

accumulating, by the computer system, first long-term knowledge associated with a first user based on one or more prior natural language utterances received from the first user; and

accumulating, by the computer system, second long-term knowledge associated with a second user based on one or more prior natural language utterances received from the second user, wherein the long-term knowledge includes the first long-term knowledge associated with the first user and the second long-term knowledge associated with the second user.

8. **(Original)** The method of claim 1, the method further comprising:

receiving, by the computer system, information from a remote data source, wherein the long-term knowledge is based further on the information obtained from the remote data source.

9. **(Currently Amended)** The method of claim 1, wherein determining the interpretation of the first natural language utterance comprises:

determining, by the computer system, an interpretation of one or more recognized words of the first natural language utterance based on the first context.

10. **(Currently Amended)** The method of claim 1, the method further comprising:

causing, by the computer system, the response to the first natural language utterance to be provided to [[the]] a user.

11. **(Original)** A system for facilitating natural language system responses utilizing accumulated short-term and long-term knowledge, the system comprising:
- one or more physical processors programmed with one or more computer program instructions which, when executed, configure the one or more physical processors to:
    - accumulate short-term knowledge based on one or more natural language utterances received during a predetermined time period;
    - expire one or more items of short-term knowledge that are based on one or more natural language utterances received prior to the predetermined time period;
    - accumulate long-term knowledge based on one or more natural language utterances received prior to the predetermined time period, wherein the long-term knowledge includes at least one of the one or more expired items of short-term knowledge;
    - receive a first natural language utterance via an input device;
    - determine a first context for the first natural language utterance based on the short-term knowledge and the long-term knowledge;
    - determine an interpretation of the first natural language utterance based on the first context; and
    - generate a first response to the first natural language utterance based on the interpretation.
12. **(Original)** The system of claim 11, wherein the one or more natural language utterances received during the predetermined time period are related to a single conversation between a user and the computer system.
13. **(Currently Amended)** The system of claim 11, wherein the long-term knowledge comprises one or more of user preferences, an indication of utilized domain agents, contexts of prior natural language utterances, requests of prior natural language utterances, ~~and/or~~ and tasks performed in response to prior natural language utterances.

14. **(Currently Amended)** The system of claim 11, wherein the one or more physical processors are further configured to:
- receive a second natural language utterance in ~~responsive~~ response to the first response;
  - identify one or more user preferences based on the second natural language utterance;
  - and
  - update the long-term knowledge based on the identified user preferences.
15. **(Currently Amended)** The system of claim 11, wherein the long-term knowledge is associated with a first user, and wherein the one or more physical processors are further configured to:
- generate a profile associated with the first user based on the long-term knowledge, wherein the first context for the first natural language utterance is further determined based ~~further~~ on the profile associated with the first user.
16. **(Currently Amended)** The system of claim 11, wherein the one or more physical processors are further configured to:
- generate one or more of a user profile, an environmental profile, a historical profile, and/or a cognitive profile based on the long-term knowledge, wherein subsequent natural language utterances are processed based at least on the one or more of the user profile, the environmental profile, the historical profile~~[[.]], and/or~~ and the cognitive profile.
17. **(Currently Amending)** The system of claim 11, wherein to ~~accumulating~~ accumulate the long-term knowledge, the one or more physical processors are configured to:
- accumulate first long-term knowledge associated with a first user based on one or more prior natural language utterances received from the first user; and
  - accumulate second long-term knowledge associated with a second user based on one or more prior natural language utterances received from the second user, wherein the long-term knowledge includes the first long-term knowledge associated with the first user and the second long-term knowledge associated with the second user.

18. **(Original)** The system of claim 11, wherein the one or more physical processors are further configured to:

receive information from a remote data source, wherein the long-term knowledge is based further on the information obtained from the remote data source.

19. **(Currently Amended)** The system of claim 11, wherein to determine the interpretation of the first natural language utterance, the one or more physical processors are configured to:

determine an interpretation of one or more recognized words of the first natural language utterance based on the first context.

20. **(Currently Amended)** The system of claim 11, wherein the one or more physical processors are further configured to:

cause the response to the first natural language utterance to be provided to [[the]] a user.

**REMARKS**

By this Preliminary Amendment, claims 3-6, 9, 10, 13-17, 19, and 20 have been amended. No claims have been newly added or canceled. Therefore, claims 1-20 remain pending. Support for the instant amendments may be found throughout the as-filed Specification. Thus, no new matter is added. Prompt examination of pending claims 1-20 and allowance in due course are respectfully solicited.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

Date: **August 29, 2019**

**SHEPPARD MULLIN RICHTER & HAMPTON LLP**

By:           / Mark A. Patrick /            
Mark A. Patrick  
Registration No. 72,958

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Fax: 202-747-3853

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37018705
<b>Application Number:</b>	16555125
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7205
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
<b>First Named Inventor/Applicant Name:</b>	Larry BALDWIN
<b>Customer Number:</b>	133759
<b>Filer:</b>	Mark Andrew Patrick/Diane Bogusz
<b>Filer Authorized By:</b>	Mark Andrew Patrick
<b>Attorney Docket Number:</b>	62KC-303780
<b>Receipt Date:</b>	29-AUG-2019
<b>Filing Date:</b>	
<b>Time Stamp:</b>	15:20:22
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		62KC-303780_Preliminary_Amendment.pdf	119274	yes	8
			9f96f4562e6dae4f158cb0653cac3f32f4ed8990		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Preliminary Amendment	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	8
Warnings:			
Information:			
Total Files Size (in bytes):		119274	
<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> 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> 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> 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>Doc Code: DIST.E.FILE</b> <b>Document Description: Electronic Terminal Disclaimer - Filed</b>		PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	<b>TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT</b>	
Application Number	16555125	
Filing Date	01-Jan-0001	
First Named Inventor	Larry BALDWIN	
Attorney Docket Number	62KC-303780	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	
<input checked="" type="checkbox"/> Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action  <input checked="" type="checkbox"/> This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.		
Owner	Percent Interest	
VB Assets, LLC	100%	
<p>The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)</p> <p>8073681 10297249</p> <p>as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.</p> <p>In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:</p> <ul style="list-style-type: none"> <li>- expires for failure to pay a maintenance fee;</li> <li>- is held unenforceable;</li> <li>- is found invalid by a court of competent jurisdiction;</li> <li>- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;</li> <li>- has all claims canceled by a reexamination certificate;</li> <li>- is reissued; or</li> <li>- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.</li> </ul>		

☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

☐ Small Entity

☐ Micro Entity

☒ Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 72958

☐ A sole inventor

☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

☐ A joint inventor; all of whom are signing this request

Signature	/Mark A. Patrick/
Name	Mark A. Patrick

\*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).  
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal				
Application Number:		16555125		
Filing Date:				
Title of Invention:		SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
First Named Inventor/Applicant Name:		Larry BALDWIN		
Filer:		Mark Andrew Patrick/Susan Trader		
Attorney Docket Number:		62KC-303780		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE  
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 16555125

Filing Date: 01-Jan-0001

Applicant/Patent under Reexamination: BALDWIN

Electronic Terminal Disclaimer filed on August 30, 2019

☒ APPROVED

**This patent is subject to a terminal disclaimer**

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37026567
<b>Application Number:</b>	16555125
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7205
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
<b>First Named Inventor/Applicant Name:</b>	Larry BALDWIN
<b>Customer Number:</b>	133759
<b>Filer:</b>	Mark Andrew Patrick/Susan Trader
<b>Filer Authorized By:</b>	Mark Andrew Patrick
<b>Attorney Docket Number:</b>	62KC-303780
<b>Receipt Date:</b>	30-AUG-2019
<b>Filing Date:</b>	
<b>Time Stamp:</b>	14:20:55
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	E20198TE20538880
Deposit Account	504561
Authorized User	Susan Trader

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)  
 37 CFR 1.20 (Post Issuance fees)  
 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	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33637	no	2
			842ef0be19704ff02cf56eed7a2eb663e7b55774		

## Warnings:

## Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30336	no	2
			04c5ddf1173484e4b0ba3c80224d5292cfeb8d99		

## Warnings:

## Information:

**Total Files Size (in bytes):** 63973

**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  
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/555,125	08/29/2019	2658	1720	62KC-303780	20	2

CONFIRMATION NO. 7205

## FILING RECEIPT



133759  
Sheppard Mullin Richter & Hampton LLP  
650 Town Center Drive, 10th Floor  
Costa Mesa, CA 92626

Date Mailed: 09/11/2019

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

### Inventor(s)

Larry BALDWIN, Maple Valley, WA;  
Tom FREEMAN, Mercer Island, WA;  
Michael TJALVE, Bellevue, WA;  
Blane EBERSOLD, Seattle, WA;  
Chris WEIDER, Seattle, WA;

### Applicant(s)

VB Assets, LLC, Bellevue, WA;

### Assignment For Published Patent Application

VB Assets, LLC, Bellevue, WA

**Power of Attorney:** The patent practitioners associated with Customer Number 133759

### Domestic Priority data as claimed by applicant

This application is a CON of 16/417,173 05/20/2019  
which is a DIV of 14/691,445 04/20/2015 PAT 10297249  
which is a CON of 13/987,645 08/19/2013 PAT 9015049  
which is a DIV of 13/251,712 10/03/2011 PAT 8515765  
which is a CON of 11/580,926 10/16/2006 PAT 8073681

**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 Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 09/10/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/555,125**

**Projected Publication Date:** 12/19/2019

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

**Preliminary Class**

704

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

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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.

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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>.

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

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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875						Application or Docket Number 16/555,125				
<b>APPLICATION AS FILED - PART I</b>										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *				x 100 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE (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			
			TOTAL			TOTAL	1720			
* If the difference in column 1 is less than zero, enter "0" in column 2.										
<b>APPLICATION AS AMENDED - PART II</b>										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (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 (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (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. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										

<b>Doc Code: DIST.E.FILE</b> <b>Document Description: Electronic Terminal Disclaimer - Filed</b>		PTO/SB/25 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	<b>TERMINAL DISCLAIMER TO OBIATE A PROVISIONAL DOUBLE PATENTING          REJECTION OVER A PENDING "REFERENCE" APPLICATION</b>	
Application Number	16555125	
Filing Date	29-Aug-2019	
First Named Inventor	Larry BALDWIN	
Attorney Docket Number	62KC-303780	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	
<input checked="" type="checkbox"/> Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action  <input checked="" type="checkbox"/> This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.		
Owner	Percent Interest	
VB ASSETS, LLC	100%	
The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)		
16417173    filed on    05/20/2019  as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.  In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.		
<input checked="" type="radio"/> Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.		

<input type="radio"/> I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status:  <input type="radio"/> Small Entity  <input type="radio"/> Micro Entity  <input checked="" type="radio"/> Regular Undiscounted	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES  I certify, in accordance with 37 CFR 1.4(d)(4) that I am:  <input checked="" type="radio"/> An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application  Registration Number <u>72958</u>  <input type="radio"/> A sole inventor  <input type="radio"/> A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application  <input type="radio"/> A joint inventor; all of whom are signing this request	
Signature	/Mark A. Patrick/
Name	Mark A. Patrick

\*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).  
 Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>		16555125		
<b>Filing Date:</b>		29-Aug-2019		
<b>Title of Invention:</b>		SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
<b>First Named Inventor/Applicant Name:</b>		Larry BALDWIN		
<b>Filer:</b>		Mark Andrew Patrick/Diane Bogusz		
<b>Attorney Docket Number:</b>		62KC-303780		
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>				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	160	160
<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>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE  
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 16555125

Filing Date: 29-Aug-2019

Applicant/Patent under Reexamination: BALDWIN

Electronic Terminal Disclaimer filed on September 16, 2019

☒ APPROVED

**This patent is subject to a terminal disclaimer**

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37172793
<b>Application Number:</b>	16555125
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7205
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
<b>First Named Inventor/Applicant Name:</b>	Larry BALDWIN
<b>Customer Number:</b>	133759
<b>Filer:</b>	Mark Andrew Patrick/Diane Bogusz
<b>Filer Authorized By:</b>	Mark Andrew Patrick
<b>Attorney Docket Number:</b>	62KC-303780
<b>Receipt Date:</b>	16-SEP-2019
<b>Filing Date:</b>	29-AUG-2019
<b>Time Stamp:</b>	16:28:35
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	E20199FG28320097
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)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	34125	no	2
			2a3c22e80054457f0661fdb31ba681bcb18be55		
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	30681	no	2
			ef64b98bddc2010143e5431a533a10619aa038ef		
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			64806		
<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>  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>  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>  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

## NOTICE OF ALLOWANCE AND FEE(S) DUE

133759 7590 09/23/2019  
Sheppard Mullin Richter & Hampton LLP  
650 Town Center Drive, 10th Floor  
Costa Mesa, CA 92626

EXAMINER	
YEN, ERIC L	
ART UNIT	PAPER NUMBER
	2658

DATE MAILED: 09/23/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780	7205

TITLE OF INVENTION: SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	12/23/2019

**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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at [www.uspto.gov/PatentMaintenanceFees](http://www.uspto.gov/PatentMaintenanceFees).**

# **PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to:    Mail Stop ISSUE FEE  
                             Commissioner for Patents  
                             P.O. Box 1450  
                             Alexandria, Virginia 22313-1450

By fax, send to:    (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)

133759                      7590                      09/23/2019  
**Sheppard Mullin Richter & Hampton LLP**  
 650 Town Center Drive, 10th Floor  
 Costa Mesa, CA 92626

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780	7205

**TITLE OF INVENTION: SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE**

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	12/23/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
YEN, ERIC L	2658	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 03-09 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,
- (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 \_\_\_\_\_

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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted:    ☐ Issue Fee    ☐ Publication Fee (if required)    ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- ☐ Electronic Payment via EFS-Web    ☐ Enclosed check    ☐ Non-electronic payment by credit card (Attach form PTO-2038)
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. \_\_\_\_\_

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

UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780	7205
133759 7590 09/23/2019 Sheppard Mullin Richter & Hampton LLP 650 Town Center Drive, 10th Floor Costa Mesa, CA 92626			EXAMINER YEN, ERIC L	
			ART UNIT	PAPER NUMBER
			2658	

DATE MAILED: 09/23/2019

## 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 30 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> 16/555,125	<b>Applicant(s)</b> BALDWIN et al.	
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658	<b>AIA (FITF) Status</b> 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 Initial application filing.  
☐ 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 1-6,8-16 and 18-20 . 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](mailto: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) 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date. _____ .	5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____ .
--	--

/ERIC YEN/ Primary Examiner, Art Unit 2658	
---	--

**DETAILED ACTION**

***Notice of Pre-AIA or AIA Status***

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

***Response to Amendment***

Applicant preliminarily amended claims 3-6, 9, 10, 13-17, 19, and 20. Therefore, the pending claims are the claims filed 8/29/19 which include claims marked as “(original)” and “(currently amended)”

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Mark Patrick on 9/16/19.

The application has been amended as follows:

Cancel claims 7 and 17 (i.e. cancel claims 7 and 17 from the preliminarily amended claims filed 8/29/19, which include claims marked as “(original)” and “(currently amended)”

***Claim Interpretation***

For clarity of the record, claim 11 is not interpreted as a single means claim because “processors” in “one or more physical processors” because “The term “processor” in many arts is typically recognized as a computer processor (a microprocessor) and in those cases would not be considered a generic placeholder as it is a known structure”

***Allowable Subject Matter***

2. Claims 1-6, 8-16, 18-20, are allowed.
3. The following is an examiner’s statement of reasons for allowance:

The prior art of record does not teach or suggest the combination of all limitations in the independent claims.

**Kargman (US 2005/0015256)** (see Final Office Action mailed 11/1/10 for Parent Application 11/580,926) teaches determining an intended meaning for an utterance from short-term knowledge and long-term knowledge (e.g. short-term knowledge is knowing that the user is ordering some sort of pizza while long-term knowledge is using prior order information [when a user says pizza, the user means pepperoni pizza because the user repeatedly orders pepperoni pizza] and a statistical database about prior order information)

Kargman does not, however, teach where context is determined based on short-term knowledge and long-term knowledge (i.e. intended meaning is not the same as context)

**Morin (US 5,748,841)** (see Final Office Action mailed 11/1/10 for Parent Application 11/580,926) suggests a short-term/immediate context and a time-out which suggests expiring short-term context information.

**Kennewick (US 2004/0044516)** and **Perkins (US 7,072,888)** (see Final Office Action mailed 12/4/18 for Application 14/691,445) suggest various limitations in claims 1 and 11 including determining context based on knowledge (Kennewick) where knowledge is short-term knowledge and where short-term knowledge is expired after a predetermined time period (Perkins teaches deleting query information older than n/30 days)

Neither Morin nor Perkins teach/suggest where short-term knowledge that has been expired is included in long-term information (expired information is simply deleted in Morin and Perkins), and Kennewick does not specifically teach that both short-term and long-term information is used to determine context (even though dialog history and other examples in Kennewick are likely to be based on utterances entered long enough ago to be considered “long-term”)

The prior art further teaches where information that is stored or has not been accessed in a short-term storage for a predetermined period of time is transferred/moved into a long-term storage (i.e. the short-term information is “expired” into long-term information)

**2005/0080821** “after particular data has been stored within short-term data repository... for a predetermined period of time, the data may be transferred from short-term data repository... to long-term data repository”, paragraph 45;

**2001/0011336** “customer image group is moved from the short-term storage device to a long-term storage device having a plurality of long-term storage media when the customer image group is not accessed by a user within a first predetermined period of time”, paragraph 6;

These references, however, do not teach expiring short-term knowledge that is based on natural language utterances received prior to the predetermined time period being expired and added to long-term storage.

Morin also teaches dialogue context that includes short-term context and long-term context

**5748841** “Context Handler... in charge of the dialogue context... dialogue context represents the state of the ongoing dialogue... composed of a short-term context and a long-term context... short-term context holds information on the immediate focus of the dialogue—current question or current expectations... also contains flags representing whether a proposal was made, the assistance and help modes are active or not etc. On the other hand the long-term context represents the story that has already been run”

Any comments considered necessary by applicant 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***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC YEN whose telephone number is (571)272-4249. The examiner can normally be reached on M-F 9:00-5:30PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on (571)272-7602. 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.

EY 9/16/19

/ERIC YEN/  
Primary Examiner, Art Unit 2658



Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: The examiner informed Applicant's representative that Applications 16/417,173 and 16/555,125 (parent application and child application, respectively) would require terminal disclaimers between each other, because even though Application 16/417,173 does not have any double patenting issues relative to its parent applications, the claims of the parent and child applications include the same subject matter, with the only difference being the location of the limitations of claims 7 and 17.

The examiner indicated that if claims 7 and 17 are canceled from the child application, then no terminal disclaimer would be required in the parent application's application file (since the child application no longer teaches a limitation that distinguished the parent application from its parent applications), but the child application's application file would still require a terminal disclaimer (because the parent application's claims would still include all limitations of the claims of the child application).

The examiner agreed to cancel claims 7 and 17 via examiner's amendment and to allow the child application upon filing of a further terminal disclaimer with the parent application.

<b>Notice of References Cited</b>	Application/Control No. 16/555,125		Applicant(s)/Patent Under Reexamination BALDWIN et al.	
	Examiner ERIC YEN		Art Unit 2658	Page 1 of 1

#### U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20050015256-A1	01-2005	Kargman, James B.	G06Q30/06	704/272
*	B	US-5748841-A	05-1998	Morin; Philippe	G06F3/16	704/257
*	C	US-20040044516-A1	03-2004	Kennewick, Robert A.	G10L15/22	704/5
*	D	US-7072888-B1	07-2006	Perkins; Alan	G06F16/9535	707/733
*	E	US-20050080821-A1	04-2005	Breil, Peter D.	G06Q40/02	1/1
*	F	US-20010011336-A1	08-2001	SITKA, LARRY R.	G06F19/321	711/161
*	G	US-20050138168-A1	06-2005	Hoffman, Philip M.	G06F11/3409	709/224
*	H	US-5898760-A	04-1999	Smets; Raymond J.	H04M1/274583	379/88.21
*	I	US-8972354-B1	03-2015	Telang; Nilesh	G06Q10/10	707/653
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	K					
	L					
	M					


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*		Document Number Country Code-Number-Kind Code	Date 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.

<b>Issue Classification</b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.	
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658	

CPC						
Symbol					Type	Version
G10L	/	15	/	18	F	2013-01-01
G10L	/	15	/	1815	I	2013-01-01
G10L	/	15	/	22	I	2013-01-01
G10L	/	25	/	51	I	2013-01-01
G10L	/	15	/	1822	I	2013-01-01
G06F	/	17	/	2785	I	2013-01-01
G10L	/	17	/	22	I	2013-01-01
G06F	/	3	/	167	I	2013-01-01
G10L	/	2015	/	0631	A	2013-01-01
G10L	/	2021	/	02166	A	2013-01-01
G10L	/	15	/	183	A	2013-01-01
G10L	/	2015	/	225	A	2013-01-01
G10L	/	2015	/	228	A	2013-01-01

CPC Combination Sets						
Symbol			Type	Set	Ranking	Version
	/		/			

NONE (Assistant Examiner) _____ (Date) _____		<b>Total Claims Allowed:</b> 18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner) _____ (Date) 16 September 2019		O.G. Print Claim(s) 1	O.G. Print Figure 3


<b>Issue Classification</b> 	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/555,125	BALDWIN et al.
	Examiner	Art Unit
	ERIC YEN	2658

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G10L15/18	/	15	/ 18
G10L15/22	/	15	/ 22
G10L25/51	/	25	/ 51
G06F17/27	/	17	/ 27
G10L17/22	/	17	/ 22
G06F3/16	/	3	/ 16
G10L15/06	/	15	/ 06
G10L21/0216	/	21	/ 0216
G10L15/183	/	15	/ 183
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS


CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner)	16 September 2019 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3

<b>Issue Classification</b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input checked="" type="checkbox"/> T.D. <input type="checkbox"/> R.1.47															
<b>CLAIMS</b>															
<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>
1	1	10	11												
2	2	11	12												
3	3	12	13												
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6	6	15	16												
7	8	16	18												
8	9	17	19												
9	10	18	20												

NONE (Assistant Examiner) _____ (Date) _____		<b>Total Claims Allowed:</b> 18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner) _____ (Date) 16 September 2019		O.G. Print Claim(s) 1	O.G. Print Figure 3

<b><i>Search Notes</i></b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658

CPC - Searched*		
Symbol	Date	Examiner
G10L 15/063, 15/28, 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228	09/16/2019	EY

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

\* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Review of parent case 16/417,173	09/16/2019	EY
EAST Search (attached)	09/16/2019	EY

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G10L	15/063, 15/28, 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228	09/16/2019	EY

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Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

## **U.S.PATENTS**

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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/ERIC YEN/

09/16/2019

**INFORMATION DISCLOSURE  
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First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

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**INFORMATION DISCLOSURE  
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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

39	20170004588	2017-01-05	ISAACSON THOMAS M
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**FOREIGN PATENT DOCUMENTS**

Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
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**NON-PATENT LITERATURE DOCUMENTS**

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**EXAMINER SIGNATURE**

Examiner Signature	/ERIC YEN/	Date Considered	09/16/2019
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

/ERIC YEN/

09/16/2019

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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 inspections 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.

/ERIC YEN/

09/16/2019

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /E.Y./

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

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# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( Not for submission under 37 CFR 1.99)

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First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

## **U.S.PATENTS**

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	2	20030046281		2003-03-06	Chan Son	
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/ERIC YEN/

09/16/2019

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Attorney Docket Number	62KC-303780

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8	20030088421	2003-05-08	Maes
9	20030093419	2003-05-15	Srinivas Bangalore
10	20030097249	2003-05-22	Walker
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12	20030112267	2003-06-19	Belrose
13	20030115062	2003-06-19	Walker
14	20030120493	2003-06-26	Gupta
15	20030135488	2003-07-17	Amir
16	20030144846	2003-07-31	Denenberg

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17	20030158731	2003-08-21	Falcon
18	20030161448	2003-08-28	Parolkar
19	20030167167	2003-09-04	Li Gong
20	20030174155	2003-09-18	Jie Weng
21	20030182132	2003-09-25	Niemoeller
22	20030187643	2003-10-02	VanThong
23	20030204492	2003-10-30	Wolf
24	20030206640	2003-11-06	Malvar
25	20030212550	2003-11-13	Ubale
26	20030212558	2003-11-13	Matula
27	20030212562	2003-11-13	Patel

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28	20030225825	2003-12-04	Healey
29	20030233230	2003-12-18	Egbert Ammicht
30	20030236664	2003-12-25	Sharma
31	20040006475	2004-01-08	Ehlen
32	20040010358	2004-01-15	Oesterling
33	20040025115	2004-02-05	Sienel
34	20040030741	2004-02-12	Wolton
35	20040036601	2004-02-26	Obradovich
36	20040044516	2004-03-04	Kennewick
37	20040093567	2004-05-13	Yves Schabes
38	20040098245	2004-05-20	Walker

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39	20040102977		2004-05-27	METZLER BENJAMIN T	
40	20040117179		2004-06-17	Balasuriya	
41	20040117804		2004-06-17	Scahill	
42	20040122673		2004-06-24	Joon-Ah Park	
43	20040122674		2004-06-24	Bangalore	
44	20040133793		2004-07-08	Ginter	
45	20040140989		2004-07-22	Papageorge	
46	20040143440		2004-07-22	Venkatesh Prasad	
47	20040148154		2004-07-29	Alejandro Acero	
48	20040148170		2004-07-29	Alejandro Acero	
49	20040158555		2004-08-12	Seedman	

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50	20040166832	2004-08-26	Portman
51	20040167771	2004-08-26	Duan
52	20040172247	2004-09-02	Yoon
53	20040172258	2004-09-02	Dominach
54	20040189697	2004-09-30	Toshiyuki Fukuoka
55	20040193408	2004-09-30	Hunt
56	20040193420	2004-09-30	Kennewick
57	20040199375	2004-10-07	Ehsani
58	20040199389	2004-10-07	GEIGER HANS
59	20040201607	2004-10-14	Joseph Mulvey
60	20040204939	2004-10-14	LIU DABEN

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61	20040205671	2004-10-14	Sukehiro
62	20040220800	2004-11-04	KONG DONG-GEON
63	20040243393	2004-12-02	Kuansan Wang
64	20040243417	2004-12-02	Pitts
65	20040247092	2004-12-09	Timmins
66	20040249636	2004-12-09	Ted Applebaum
67	20050015256	2005-01-20	Kargman
68	20050021331	2005-01-27	Huang
69	20050021334	2005-01-27	Iwahashi
70	20050021470	2005-01-27	Martin
71	20050021826	2005-01-27	Kumar

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72	20050033574	2005-02-10	Kim
73	20050033582	2005-02-10	Gadd
74	20050043940	2005-02-24	Elder
75	20050060142	2005-03-17	VISSER ERIK
76	20050080632	2005-04-14	Endo
77	20050080821	2005-04-14	BREIL PETER D
78	20050102282	2005-05-12	Greg Linden
79	20050114116	2005-05-26	Fiedler
80	20050125232	2005-06-09	Gadd
81	20050131673	2005-06-16	Koizumi
82	20050137850	2005-06-23	Odell

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83	20050137877	2005-06-23	Oesterling
84	20050138168	2005-06-23	HOFFMAN PHILIP M
85	20050143994	2005-06-30	Mori
86	20050144013	2005-06-30	Fujimoto
87	20050144187	2005-06-30	Che
88	20050149319	2005-07-07	Honda
89	20050169441	2005-08-04	YACoub SHERIF
90	20050216254	2005-09-29	Gupta
91	20050222763	2005-10-06	Robert Uyeki
92	20050234637	2005-10-20	Michael Obradovich
93	20050234727	2005-10-20	Chiu

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94	20050246174	2005-11-03	DeGolia
95	20050283364	2005-12-22	Longe
96	20050283532	2005-12-22	Doo Kim
97	20050283752	2005-12-22	Fruchter
98	20060041431	2006-02-23	Maes
99	20060046740	2006-03-02	Karen Johnson
100	20060047509	2006-03-02	Ding
101	20060072738	2006-04-06	Louis
102	20060074670	2006-04-06	Fuliang Weng
103	20060074671	2006-04-06	Farmaner
104	20060080098	2006-04-13	Nick Campbell

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105	20060100851	2006-05-11	Schonebeck
106	20060106769	2006-05-18	Kevin Gibbs
107	20060129409	2006-06-15	Kenji Mizutani
108	20060130002	2006-06-15	Sadahiro Hirayama
109	20060149633	2006-07-06	VOISIN CRAIG D
110	20060182085	2006-08-17	Sweeney
111	20060206310	2006-09-14	Ravikumar
112	20060217133	2006-09-28	Christenson
113	20060236343	2006-10-19	Hisao Chang
114	20060242017	2006-10-26	Libes
115	20060253247	2006-11-09	Andrew de Silva

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116	20060253281	2006-11-09	Letzt
117	20060285662	2006-12-21	Yin
118	20070011159	2007-01-11	W. Daniel Hillis
119	20070033005	2007-02-08	Di Cristo
120	20070033020	2007-02-08	Francois
121	20070033526	2007-02-08	William Thompson
122	20070038436	2007-02-15	Cristo
123	20070038445	2007-02-15	Helbing
124	20070043569	2007-02-22	Potter
125	20070043574	2007-02-22	Coffman
126	20070043868	2007-02-22	Kumar

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127	20070050191	2007-03-01	Weider
128	20070050279	2007-03-01	Qingfeng Huang
129	20070055525	2007-03-08	Kennewick
130	20070060114	2007-03-15	RAMER JOREY
131	20070061067	2007-03-15	Zeinstra
132	20070061735	2007-03-15	Hoffberg
133	20070067310	2007-03-22	GUPTA PUNEET
134	20070073544	2007-03-29	Millett
135	20070078708	2007-04-05	Yu
136	20070078709	2007-04-05	Rajaram
137	20070078814	2007-04-05	Flowers

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138	20070094003	2007-04-26	Huang
139	20070100797	2007-05-03	Christopher Thun
140	20070106499	2007-05-10	DAHLGREN KATHLEEN
141	20070112555	2007-05-17	Lavi
142	20070112630	2007-05-17	Lau
143	20070118357	2007-05-24	Kasravi
144	20070124057	2007-05-31	Prieto
145	20070135101	2007-06-14	Ramati
146	20070146833	2007-06-28	Satomi
147	20070162296	2007-07-12	Altberg
148	20070174258	2007-07-26	Jones

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149	20070179778	2007-08-02	Gong
150	20070185859	2007-08-09	Flowers
151	20070186165	2007-08-09	Maislos
152	20070192309	2007-08-16	Fischer
153	20070198267	2007-08-23	Jones
154	20070203699	2007-08-30	Hisayuki Nagashima
155	20070203736	2007-08-30	Ashton
156	20070208732	2007-09-06	Flowers
157	20070214182	2007-09-13	Rosenberg
158	20070250901	2007-10-25	McIntire
159	20070265850	2007-11-15	Kennewick

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160	20070266257	2007-11-15	Camaisa
161	20070276651	2007-11-29	Bliss
162	20070294615	2007-12-20	Saleel Sathe
163	20070299824	2007-12-27	Pan
164	20080014908	2008-01-17	Abraham Vasant
165	20080034032	2008-02-07	Healey
166	20080046311	2008-02-21	Shahine
167	20080059188	2008-03-06	Konopka
168	20080065386	2008-03-13	Cross
169	20080065389	2008-03-13	Cross
170	20080065390	2008-03-13	ATIVANICHAYAPHONG SOONTHORN

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171	20080086455	2008-04-10	Adrienne C. Meisels
172	20080091406	2008-04-17	Baldwin
173	20080103761	2008-05-01	Printz
174	20080103781	2008-05-01	Wasson
175	20080104071	2008-05-01	Pragada
176	20080109285	2008-05-08	Reuther
177	20080115163	2008-05-15	Gilboa
178	20080126091	2008-05-29	Jason W. Clark
179	20080126284	2008-05-29	FORBES SCOTT C
180	20080133215	2008-06-05	Sarukkai
181	20080140385	2008-06-12	Mahajan

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182	20080147396	2008-06-19	Wang
183	20080147410	2008-06-19	Odinak
184	20080147637	2008-06-19	Xin Li
185	20080154604	2008-06-26	Sathish
186	20080162471	2008-07-03	Bernard
187	20080177530	2008-07-24	Cross
188	20080184164	2008-07-31	Giuseppe Di Fabbrizio
189	20080189110	2008-08-07	Freeman
190	20080189187	2008-08-07	HAO BIAO
191	20080228496	2008-09-18	Dong Yu
192	20080235023	2008-09-25	Kennewick

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193	20080235027	2008-09-25	Cross
194	20080269958	2008-10-30	Dimitar Petrov Filev
195	20080270135	2008-10-30	GOEL VAIBHAVA
196	20080270224	2008-10-30	Eric A. Portman
197	20080294437	2008-11-27	Nakano
198	20080294994	2008-11-27	Kruger
199	20080306743	2008-12-11	Giuseppe Di Fabrizio
200	20080319751	2008-12-25	Kennewick
201	20090006077	2009-01-01	Keaveney
202	20090006194	2009-01-01	Prashant Sridharan
203	20090018829	2009-01-15	Michael Kuperstein

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204	20090024476	2009-01-22	Baar
205	20090030686	2009-01-29	WENG FULIANG
206	20090052635	2009-02-26	Jones
207	20090055176	2009-02-26	HU JUNLING
208	20090067599	2009-03-12	Agarwal
209	20090076827	2009-03-19	Bulitta
210	20090106029	2009-04-23	DeLine
211	20090117885	2009-05-07	Roth
212	20090144131	2009-06-04	Chiu
213	20090144271	2009-06-04	Richardson
214	20090150156	2009-06-11	Kennewick

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215	20090157382	2009-06-18	BAR SHMUEL
216	20090164216	2009-06-25	Rathinavelu Chengalvarayan
217	20090171664	2009-07-02	Kennewick
218	20090171912	2009-07-02	NASH MICHAEL PATRICK
219	20090197582	2009-08-06	Robert C. Lewis
220	20090216540	2009-08-27	Tessel
221	20090248565	2009-10-01	Kai Chuang
222	20090248605	2009-10-01	Mitchell
223	20090259561	2009-10-15	Donald Robert Martin Boys
224	20090259646	2009-10-15	Fujita
225	20090265163	2009-10-22	Li

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226	20090271194	2009-10-29	Davis
227	20090273563	2009-11-05	Pryor
228	20090276700	2009-11-05	Anderson
229	20090287680	2009-11-19	Paek
230	20090299745	2009-12-03	Kennewick
231	20090299857	2009-12-03	Brubaker
232	20090304161	2009-12-10	Pettyjohn
233	20090307031	2009-12-10	Winkler
234	20090313026	2009-12-17	Coffman
235	20090319517	2009-12-24	Ramananthan V. Guha
236	20100023320	2010-01-28	Cristo

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237	20100023331	2010-01-28	OUTA NICOLAE
238	20100029261	2010-02-04	Mikkelsen
239	20100036967	2010-02-11	Caine
240	20100049501	2010-02-25	Kennewick
241	20100049514	2010-02-25	Kennewick
242	20100057443	2010-03-04	Cristo
243	20100063880	2010-03-11	Atsmon
244	20100064025	2010-03-11	Nelimarkka
245	20100094707	2010-04-15	Freer
246	20100138300	2010-06-03	R. Tyler Wallis
247	20100145700	2010-06-10	Kennewick

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248	20100185512	2010-07-22	Borger
249	20100191856	2010-07-29	GUPTA APURV
250	20100204986	2010-08-12	Kennewick
251	20100204994	2010-08-12	Kennewick
252	20100217604	2010-08-26	Baldwin
253	20100268536	2010-10-21	SUENDERMANN DAVID
254	20100286985	2010-11-11	Kennewick
255	20100299142	2010-11-25	Freeman
256	20100312547	2010-12-09	VAN OS MARCEL
257	20100312566	2010-12-09	Odinak
258	20100318357	2010-12-16	Anthony F. Istvan

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259	20100331064	2010-12-30	Michelstein
260	20110022393	2011-01-27	Waller
261	20110106527	2011-05-05	Chiu
262	20110112827	2011-05-12	Kennewick
263	20110112921	2011-05-12	Kennewick
264	20110119049	2011-05-19	Ylonen
265	20110131036	2011-06-02	DiCristo
266	20110131045	2011-06-02	Cristo
267	20110231182	2011-09-22	Weider
268	20110231188	2011-09-22	Kennewick
269	20110238409	2011-09-29	Jean-Marie Henri Daniel Larcheveque

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270	20110307167	2011-12-15	Taschereau
271	20120022857	2012-01-26	Baldwin
272	20120041753	2012-02-16	Marc Dymetman
273	20120046935	2012-02-23	Nagao
274	20120101809	2012-04-26	Kennewick
275	20120101810	2012-04-26	Kennewick
276	20120109753	2012-05-03	Kennewick
277	20120150620	2012-06-14	Mandyam
278	20120150636	2012-06-14	Freeman
279	20120239498	2012-09-20	Ramer
280	20120240060	2012-09-20	Pennington

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281	20120265528	2012-10-18	Thomas Robert Gruber
282	20120278073	2012-11-01	Weider
283	20130006734	2013-01-03	Ocko
284	20130054228	2013-02-28	Baldwin
285	20130060625	2013-03-07	Davis
286	20130080177	2013-03-28	Chen
287	20130211710	2013-08-15	Kennewick
288	20130253929	2013-09-26	Weider
289	20130254314	2013-09-26	Chow
290	20130297293	2013-11-07	Cristo
291	20130304473	2013-11-14	Baldwin

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292	20130311324		2013-11-21	Stoll	
293	20130332454		2013-12-12	Gunther Stuhec	
294	20130339022		2013-12-19	Baldwin	
295	20140006951		2014-01-02	Hunter	
296	20140012577		2014-01-09	Freeman	
297	20140025371		2014-01-23	Sunyoung Min	
298	20140108013		2014-04-17	Cristo	
299	20140136187		2014-05-15	WOLVERTON MICHAEL J	
300	20140156278		2014-06-05	Kennewick	

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## **EXAMINER SIGNATURE**

Examiner Signature	/ERIC YEN/	Date Considered	09/16/2019
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

/ERIC YEN/

09/16/2019

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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.
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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.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /E.Y./

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

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Examiner Name	TBD
Attorney Docket Number	62KC-303780

## U.S.PATENTS

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6912498		2005-06-28	Stevens	
	2	6915126		2005-07-05	Mazzara Jr	
	3	6928614		2005-08-09	Everhart	
	4	6934756		2005-08-23	Maes	
	5	6937977		2005-08-30	Gerson	
	6	6937982		2005-08-30	Kitaoka	
	7	6941266		2005-09-06	Gorin	
	8	6944594		2005-09-13	Busayapongchai	

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9	6950821		2005-09-27	Faybishenko
10	6954755		2005-10-11	Reisman
11	6959276		2005-10-25	Droppo
12	6961700		2005-11-01	Mitchell
13	6963759		2005-11-08	Gerson
14	6964023		2005-11-08	Maes
15	6968311		2005-11-22	Knockeart
16	6973387		2005-12-06	Masclet
17	6975983		2005-12-13	FORTESCUE NICHOLAS DAVID
18	6975993		2005-12-13	Keiller
19	6980092		2005-12-27	Turnbull

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20	6983055	2006-01-03	Luo
21	6990513	2006-01-24	Belfiore
22	6996531	2006-02-07	Korall
23	7003463	2006-02-21	Maes
24	7016849	2006-03-21	Arnold
25	7020609	2006-03-28	Thrift
26	7024364	2006-04-04	Guerra
27	7027586	2006-04-11	Bushey
28	7027974	2006-04-11	Justin Eliot Busch
29	7027975	2006-04-11	Pazandak
30	7031908	2006-04-18	HUANG XUEDONG D

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31	7035415		2006-04-25	Belt	
32	7036128		2006-04-25	Julia	
33	7043425		2006-05-09	Pao	
34	7054817		2006-05-30	Shao	
35	7058890		2006-06-06	George	
36	7062488		2006-06-13	Reisman	
37	7069220		2006-06-27	Coffman	
38	7072834		2006-07-04	Zhou	
39	7072888		2006-07-04	Alan Perkins	
40	7076362		2006-07-11	Ohtsuji	
41	7082469		2006-07-25	Gold	

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42	7085708		2006-08-01	Manson
43	7092928		2006-08-15	Elad
44	7107210		2006-09-12	Deng
45	7107218		2006-09-12	Preston
46	7110951		2006-09-19	Lemelson
47	7127395		2006-10-24	Gorin
48	7127400		2006-10-24	Koch
49	7130390		2006-10-31	Abburi
50	7136875		2006-11-14	Anderson
51	7137126		2006-11-14	Coffman
52	7143037		2006-11-28	Chestnut

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53	7143039		2006-11-28	Stifelman	
54	7146315		2006-12-05	BALAN RADU VICTOR	
55	7146319		2006-12-05	Hunt	
56	7149696		2006-12-12	Shimizu	
57	7165028		2007-01-16	Gong	
58	7170993		2007-01-30	Anderson	
59	7171291		2007-01-30	Obradovich	
60	7174300		2007-02-06	Bush	
61	7177798		2007-02-13	Hsu	
62	7184957		2007-02-27	Brookes	
63	7190770		2007-03-13	Ando	

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64	7197069	2007-03-27	Agazzi
65	7197460	2007-03-27	Gupta
66	7203644	2007-04-10	Anderson
67	7206418	2007-04-17	Yang
68	7207011	2007-04-17	Mulvey
69	7215941	2007-05-08	Beckmann
70	7228276	2007-06-05	Omote
71	7231343	2007-06-12	Treadgold
72	7236923	2007-06-26	Gupta
73	7254482	2007-08-07	Kawasaki
74	7272212	2007-09-18	Eberle

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75	7277854	2007-10-02	Bennett
76	7283829	2007-10-16	Christenson
77	7283951	2007-10-16	Marchisio
78	7289606	2007-10-30	Sibal
79	7299186	2007-11-20	Kuzunuki
80	7301093	2007-11-27	Sater
81	7305381	2007-12-04	Poppink
82	7321850	2008-01-22	Wakita
83	7328155	2008-02-05	Endo
84	7337116	2008-02-26	Charlesworth
85	7340040	2008-03-04	Saylor

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86	7366285	2008-04-29	Parolkar
87	7366669	2008-04-29	Nishitani
88	7376645	2008-05-20	Bernard
89	7380250	2008-05-27	SCHECHTER GREG D
90	7386443	2008-06-10	Parthasarathy
91	7398209	2008-07-08	Kennewick
92	7406421	2008-07-29	Odinak
93	7415100	2008-08-19	Cooper
94	7415414	2008-08-19	Azara
95	7421393	2008-09-02	DiFabrizio
96	7424431	2008-09-09	Greene

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97	7447635	2008-11-04	Konopka
98	7451088	2008-11-11	Ehlen
99	7454368	2008-11-18	Stillman
100	7454608	2008-11-18	Gopalakrishnan
101	7461059	2008-12-02	Richardson
102	7472020	2008-12-30	Brulle-Drews
103	7472060	2008-12-30	Gorin
104	7472075	2008-12-30	Odinak
105	7477909	2009-01-13	Roth
106	7478036	2009-01-13	Shen
107	7487088	2009-02-03	Gorin

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108	7487110		2009-02-03	Bennett	
109	7493259		2009-02-17	Jones	
110	7493559		2009-02-17	Wolff	
111	7502672		2009-03-10	Kolls	
112	7502730		2009-03-10	WANG KUANSAN	
113	7502738		2009-03-10	Kennewick	
114	7512906		2009-03-31	BAIER JOHN JOSEPH	
115	7516076		2009-04-07	Walker	
116	7529675		2009-05-05	Maes	
117	7536297		2009-05-19	Byrd	
118	7536374		2009-05-19	Au	

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119	7542894	2009-06-02	Murata
120	7546382	2009-06-09	Healey
121	7548491	2009-06-16	Macfarlane
122	7552054	2009-06-23	Stifelman
123	7558730	2009-07-07	Davis
124	7574362	2009-08-11	Walker
125	7577244	2009-08-18	Taschereau
126	7606708	2009-10-20	Hwang
127	7606712	2009-10-20	SMITH STEVEN G
128	7620549	2009-11-17	DiCristo
129	7634409	2009-12-15	Kennewick

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130	7640006	2009-12-29	Portman
131	7640160	2009-12-29	DiCristo
132	7640272	2009-12-29	Mahajan
133	7672931	2010-03-02	Hurst-Hiller
134	7676365	2010-03-09	Hwang
135	7676369	2010-03-09	Fujimoto
136	7684977	2010-03-23	Morikawa
137	7693720	2010-04-06	Kennewick
138	7697673	2010-04-13	Chiu
139	7706616	2010-04-27	Kristensson
140	7729913	2010-06-01	LEE NICHOLAS J

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141	7729916	2010-06-01	Coffman
142	7729918	2010-06-01	Walker
143	7729920	2010-06-01	Chaar
144	7734287	2010-06-08	Ying
145	7748021	2010-06-29	Obradovich
146	7788084	2010-08-31	Brun
147	7792257	2010-09-07	Vanier
148	7801731	2010-09-21	Odinak
149	7809570	2010-10-05	Kennewick
150	7818176	2010-10-19	Freeman
151	7831426	2010-11-09	Bennett

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152	7831433		2010-11-09	Belvin	
153	7856358		2010-12-21	Ho	
154	7873519		2011-01-18	Bennett	
155	7873523		2011-01-18	Potter	
156	7873654		2011-01-18	Bernard	
157	7881936		2011-02-01	Longe	
158	7890324		2011-02-15	Bangalore	
159	7894849		2011-02-22	Kass	
160	7902969		2011-03-08	Obradovich	
161	7917367		2011-03-29	DiCristo	
162	7920682		2011-04-05	Byrne	

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163	7949529		2011-05-24	Weider	
164	7949537		2011-05-24	Walker	
165	7953732		2011-05-31	Frank	
166	7974875		2011-07-05	Quilici	
167	7983917		2011-07-19	Kennewick	
168	7984287		2011-07-19	Gopalakrishnan	
169	8005683		2011-08-23	Tessel	
170	8015006		2011-09-06	Kennewick	
171	8024186		2011-09-20	Jeremy S. De Bonet	
172	8027965		2011-09-27	Mitsuru Takehara	
173	8032383		2011-10-04	Bhardwaj	

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174	8060367		2011-11-15	Keaveney	
175	8069046		2011-11-29	Kennewick	
176	8073681		2011-12-06	Baldwin	
177	8077975		2011-12-13	Ma	
178	8082153		2011-12-20	Coffman	
179	8086463		2011-12-27	Ativanichayaphong	
180	8103510		2012-01-24	Sato	
181	8112275		2012-02-07	Kennewick	
182	8140327		2012-03-20	Kennewick	
183	8140335		2012-03-20	Kennewick	
184	8145489		2012-03-27	Freeman	

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185	8150694		2012-04-03	Kennewick	
186	8155962		2012-04-10	Kennewick	
187	8170867		2012-05-01	Germain	
188	8180037		2012-05-15	Delker	
189	8190436		2012-05-29	BANGALORE SRINIVAS	
190	8195468		2012-06-05	Weider	
191	8200485		2012-06-12	Lee	
192	8204751		2012-06-19	Giuseppe Di Fabrizio	
193	8219399		2012-07-10	Lutz	
194	8219599		2012-07-10	Tunstall-Pedoe	
195	8224652		2012-07-17	Wang	

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196	8255224		2012-08-28	Singleton	
197	8326599		2012-12-04	Nadi Tomeh	
198	8326627		2012-12-04	Kennewick	
199	8326634		2012-12-04	DiCristo	
200	8326637		2012-12-04	Baldwin	
201	8332224		2012-12-11	DiCristo	
202	8340975		2012-12-25	Theodore Alfred Rosenberger	
203	8346563		2013-01-01	Hjelm	
204	8370147		2013-02-05	Kennewick	
205	8447607		2013-05-21	Weider	
206	8447651		2013-05-21	Nathaniel B. Scholl	

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207	8452598		2013-05-28	Kennewick	
208	8503995		2013-08-06	Ramer	
209	8509403		2013-08-13	Chiu	
210	8515765		2013-08-20	Baldwin	
211	8527274		2013-09-03	Freeman	
212	8577671		2013-11-05	Rakesh Barve	
213	8589161		2013-11-19	Kennewick	
214	8612205		2013-12-17	Gregory Alan Hanneman	
215	8612206		2013-12-17	Achraf Chalabi	
216	8620659		2013-12-31	DiCristo	
217	8719005		2014-05-06	Lee	

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218	8719009		2014-05-06	Baldwin	
219	8719026		2014-05-06	Kennewick	
220	8731929		2014-05-20	Kennewick	
221	8738380		2014-05-27	Baldwin	
222	8849652		2014-09-30	Weider	
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Application Number	TBD
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First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

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**NON-PATENT LITERATURE DOCUMENTS**

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Examiner Signature	/ERIC YEN/	Date Considered	09/16/2019
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

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Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

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## Bibliographic Data

Application No: 16/555,125

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged:

/ERIC YEN/

Examiner's Signature

Initials

Title:

SYSTEM AND METHOD FOR A COOPERATIVE  
CONVERSATIONAL VOICE USER INTERFACE

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FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/29/2019	704	2658	62KC-303780
RULE			

### APPLICANTS

VB Assets, LLC, Bellevue, WA, UNITED STATES

### INVENTORS

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Tom FREEMAN Mercer Island, WA, UNITED STATES

Michael TJALVE Bellevue, WA, UNITED STATES

Blane EBERSOLD Seattle, WA, UNITED STATES

Chris WEIDER Seattle, WA, UNITED STATES

### CONTINUING DATA

This application is a CON of 16417173 05/20/2019

16417173 is a DIV of 14691445 04/20/2015 PAT 10297249

14691445 is a CON of 13987645 08/19/2013 PAT 9015049

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### FOREIGN APPLICATIONS

#### IF REQUIRED, FOREIGN LICENSE GRANTED\*\*

09/10/2019

### STATE OR COUNTRY

UNITED STATES

### ADDRESS

Sheppard Mullin Richter & Hampton LLP

650 Town Center Drive, 10th Floor

Costa Mesa, CA 92626

UNITED STATES

**FILING FEE RECEIVED**

\$1,720

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

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Attorney Docket Number	62KC-303780

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109	6085186	2000-07-04	Christianson
110	6101241	2000-08-08	Boyce
111	6108631	2000-08-22	Ruhl
112	6119087	2000-09-12	Kuhn
113	6119101	2000-09-12	Peckover
114	6122613	2000-09-19	Baker
115	6134235	2000-10-17	Goldman
116	6144667	2000-11-07	Doshi
117	6144938	2000-11-07	Surace
118	6154526	2000-11-28	Dahlke

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119	6160883		2000-12-12	Jackson	
120	6167377		2000-12-26	Gillick	
121	6173266		2001-01-09	Marx	
122	6173279		2001-01-09	Levin	
123	6175858		2001-01-16	Bulfer	
124	6185535		2001-02-06	Hedin	
125	6188982		2001-02-13	Chiang	
126	6192110		2001-02-20	Abella	
127	6192338		2001-02-20	Haszto	
128	6195634		2001-02-27	Dudemaine	
129	6195651		2001-02-27	Handel	

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130	6199043		2001-03-06	Happ	
131	6208964		2001-03-27	Sabourin	
132	6208972		2001-03-27	Grant	
133	6219346		2001-04-17	Maxemchuk	
134	6219643		2001-04-17	Cohen	
135	6219645		2001-04-17	BYERS CHARLES CALVIN	
136	6226612		2001-05-01	Srenger	
137	6233556		2001-05-15	Teunen	
138	6233559		2001-05-15	Balakrishnan	
139	6233561		2001-05-15	Junqua	
140	6236968		2001-05-22	Kanevsky	

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141	6243679	2001-06-05	Mehryar Mohri
142	6246981	2001-06-12	Papineni
143	6246990	2001-06-12	Happ
144	6266636	2001-07-24	Kosaka
145	6269336	2001-07-31	Ladd
146	6272455	2001-08-07	Hoshen
147	6272461	2001-08-07	Phillip C. Meredith
148	6275231	2001-08-14	Obradovich
149	6278377	2001-08-21	DeLine
150	6278968	2001-08-21	Franz
151	6286002	2001-09-04	Axaopoulos

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152	6288319	2001-09-11	Catona
153	6292767	2001-09-18	Jackson
154	6301560	2001-10-09	Masters
155	6308151	2001-10-23	Smith
156	6311159	2001-10-30	VanTichelen
157	6314402	2001-11-06	Monaco
158	6321196	2001-11-20	Franceschi
159	6356869	2002-03-12	Chapados
160	6362748	2002-03-26	Huang
161	6366882	2002-04-02	Bijl
162	6366886	2002-04-02	Dragosh

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163	6374214	2002-04-16	Friedland
164	6374226	2002-04-16	Andrew J. Hunt
165	6377913	2002-04-23	Coffman
166	6377919	2002-04-23	BURNETT GREG C
167	6381535	2002-04-30	Durocher
168	6385596	2002-05-07	Wiser
169	6385646	2002-05-07	Brown
170	6389398	2002-05-14	LUSTGARTEN PAUL C
171	6393403	2002-05-21	Majaniemi
172	6393428	2002-05-21	Miller
173	6397181	2002-05-28	Li

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174	6404878		2002-06-11	Jackson	
175	6405170		2002-06-11	Phillips	
176	6408272		2002-06-18	White	
177	6411810		2002-06-25	Maxemchuk	
178	6411893		2002-06-25	Ruhl	
179	6415257		2002-07-02	Junqua	
180	6418210		2002-07-09	Sayko	
181	6420975		2002-07-16	DeLine	
182	6429813		2002-08-06	Feigen	
183	6430285		2002-08-06	Bauer	
184	6430531		2002-08-06	Polish	

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185	6434523		2002-08-13	Monaco	
186	6434524		2002-08-13	Weber	
187	6434529		2002-08-13	Walker	
188	6442522		2002-08-27	Carberry	
189	6446114		2002-09-03	Bulfer	
190	6453153		2002-09-17	Bowker	
191	6453292		2002-09-17	Ramaswamy	
192	6456711		2002-09-24	Cheung	
193	6456974		2002-09-24	Baker	
194	6466654		2002-10-15	Cooper	
195	6466899		2002-10-15	Yano	

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196	6470315		2002-10-22	Netsch	
197	6487494		2002-11-26	Odinak	
198	6487495		2002-11-26	Gale	
199	6498797		2002-12-24	Anerousis	
200	6499013		2002-12-24	Weber	
201	6501833		2002-12-31	Phillips	
202	6501834		2002-12-31	Milewski	
203	6505155		2003-01-07	Vanbuskirk	
204	6510417		2003-01-21	Woods	
205	6513006		2003-01-28	Howard	
206	6522746		2003-02-18	Marchok	

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207	6523061		2003-02-18	Halverson
208	6532444		2003-03-11	Weber
209	6539348		2003-03-25	Bond
210	6549629		2003-04-15	Finn
211	6553372		2003-04-22	Brassell
212	6556970		2003-04-29	Sasaki
213	6556973		2003-04-29	Lewin
214	6560576		2003-05-06	Cohen
215	6560590		2003-05-06	Shwe
216	6567778		2003-05-20	ChaoChang
217	6567797		2003-05-20	Schuetze

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218	6567805		2003-05-20	Johnson
219	6570555		2003-05-27	Prevost
220	6570964		2003-05-27	Murveit
221	6571279		2003-05-27	Herz
222	6574597		2003-06-03	Mohri
223	6574624		2003-06-03	Johnson
224	6578022		2003-06-10	Foulger
225	6581103		2003-06-17	Dengler
226	6584439		2003-06-24	Geilhufe
227	6587858		2003-07-01	Strazza
228	6591185		2003-07-08	Ari Israel Polidi

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229	6591239		2003-07-08	McCall	
230	6594257		2003-07-15	Doshi	
231	6594367		2003-07-15	Marash	
232	6598018		2003-07-22	Junqua	
233	6601026		2003-07-29	Appelt	
234	6601029		2003-07-29	John Brian Pickering	
235	6604075		2003-08-05	Brown	
236	6604077		2003-08-05	Dragosh	
237	6606598		2003-08-12	Holthouse	
238	6611692		2003-08-26	Raffel	
239	6614773		2003-09-02	Maxemchuk	

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240	6615172	2003-09-02	Bennett
241	6622119	2003-09-16	Ramaswamy
242	6629066	2003-09-30	Jackson
243	6631346	2003-10-07	Karaorman
244	6631351	2003-10-07	Ramachandran
245	6633846	2003-10-14	Bennett
246	6636790	2003-10-21	Lightner
247	6643620	2003-11-04	Contolini
248	6647363	2003-11-11	Claassen
249	6650747	2003-11-18	Bala
250	6658388	2003-12-02	Kleindienst

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251	6678680		2004-01-13	Woo	
252	6681206		2004-01-20	Gorin	
253	6691151		2004-02-10	Cheyser	
254	6701294		2004-03-02	Ball	
255	6704396		2004-03-09	Parolkar	
256	6704576		2004-03-09	Brachman	
257	6704708		2004-03-09	Pickering	
258	6707421		2004-03-16	Drury	
259	6708150		2004-03-16	Hirayama	
260	6721001		2004-04-13	Berstis	
261	6721633		2004-04-13	Funk	

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262	6721706		2004-04-13	Strubbe	
263	6726636		2004-04-27	DerGhazarian	
264	6732088		2004-05-04	Natalie S. Glance	
265	6735592		2004-05-11	Neumann	
266	6739556		2004-05-25	Langston	
267	6741931		2004-05-25	Kohut	
268	6742021		2004-05-25	Halverson	
269	6745161		2004-06-01	Arnold	
270	6751591		2004-06-15	Gorin	
271	6751612		2004-06-15	Schuetze	
272	6754485		2004-06-22	Obradovich	

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273	6754627		2004-06-22	Woodward	
274	6754647		2004-06-22	Walter Tackett	
275	6757544		2004-06-29	Rangarajan	
276	6757718		2004-06-29	Halverson	
277	6785651		2004-08-31	Kuansan Wang	
278	6795808		2004-09-21	Strubbe	
279	6801604		2004-10-05	Maes	
280	6801893		2004-10-05	Backfried	
281	6804330		2004-10-12	Shannon Jones	
282	6810375		2004-10-26	Ejerhed	
283	6813341		2004-11-02	Mahoney	

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284	6816830		2004-11-09	Kempe	
285	6823308		2004-11-23	KEILLER ROBERT ALEXANDER	
286	6829603		2004-12-07	Chai	
287	6832230		2004-12-14	Zilliacus	
288	6833848		2004-12-21	Wolff	
289	6850603		2005-02-01	Eberle	
290	6856990		2005-02-15	Barile	
291	6865481		2005-03-08	Kawazoe	
292	6868380		2005-03-15	Kroecker	
293	6868385		2005-03-15	Gerson	
294	6871179		2005-03-22	Kist	

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295	6873837		2005-03-29	Yoshioka	
296	6877001		2005-04-05	Wolf	
297	6877134		2005-04-05	Fuller	
298	6882970		2005-04-19	GARNER PHILIP NEIL	
299	6901366		2005-05-31	Kuhn	
300	6910003		2005-06-21	Arnold	

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1	1433554A	CN	2003-07-30	QUACK COM	
2	1860496A	CN	2006-11-08	GOOGLE INC	
3	1320043A2	EP	2003-06-18	Hewlett-Packard Company	
4	1646037	EP	2006-04-12	France Telecom	
5	2001071289	JP	2001-03-21	SONY CORP	
6	2006146881	JP	2006-06-08	FRANCE TELECOM	
7	2008027454	JP	2008-02-07	QUACK COM	
8	2008058465	JP	2008-03-13	TOSHIBA CORP	
9	2008139928	JP	2008-06-19	YAHOO JAPAN CORP	
10	2011504304	JP	2011-02-03		
11	2012518847	JP	2012-08-16		×

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12	H08263258	JP	1996-10-11	Hitachi Ltd	<input type="checkbox"/>
13	JPH11249773	JP	1999-09-17	Toshiba Corp.	<input type="checkbox"/>
14	0021232	WO	2000-04-13	IBM	<input type="checkbox"/>
15	0046792	WO	2000-08-10	SOLILOQUY INC	<input type="checkbox"/>
16	0129742	WO	2001-04-26	TELLME NETWORKS INC	<input type="checkbox"/>
17	0171609A2	WO	2001-09-27	Quack.com	<input type="checkbox"/>
18	0178065	WO	2001-10-18	ONE VOICE TECHNOLOGIES INC	<input type="checkbox"/>
19	9946763	WO	1999-09-16	LERNOUT & HAUSPIE SPEECHPROD	<input type="checkbox"/>
20	2004072954	WO	2004-08-26	Siemens Aktiengesellschaft	<input type="checkbox"/>
21	2005010702A2	WO	2005-02-03	Google, Inc.	<input type="checkbox"/>
22	2007019318	WO	2007-01-04	Voicebox Technologies, Inc.	<input type="checkbox"/>

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23	2007021587	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
24	2007027546	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
25	2007027989	WO		2007-01-04	Voicebox Technologies, Inc.		<input type="checkbox"/>
26	2008098039	WO		2008-01-24	Voicebox Technologies, Inc.		<input type="checkbox"/>
27	2008118195	WO		2008-01-31	Voicebox Technologies, Inc.		<input type="checkbox"/>
28	2009075912	WO		2009-01-15	Voicebox Technologies, Inc.		<input type="checkbox"/>
29	2009111721	WO		2009-09-11	Google Inc.		<input type="checkbox"/>
30	2009145796	WO		2009-01-29	Voicebox Technologies, Inc.		<input type="checkbox"/>
31	2010096752	WO		2010-01-28	Voicebox Technologies, Inc.		<input type="checkbox"/>
32	2016044290	WO		2016-03-24	Kennewick Michael R		<input type="checkbox"/>
33	2016044316	WO		2016-03-24	Kennewick Michael R Sr, Carter Daniel B		<input type="checkbox"/>

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34	2016044319	WO	2016-03-24	Kennewick Michael R Sr	<input type="checkbox"/>
35	2016044321	WO	2016-03-24	Min Tang	<input type="checkbox"/>
36	2016061309	WO	2016-04-21	Voicebox Technologies Corporation	<input type="checkbox"/>

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-303780

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**OR**

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Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-08-29
Name/Print	Mark A. Patrick	Registration Number	72,958

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/ERIC YEN/

09/16/2019

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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.
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**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	25	((short-term near5 expir\$4) with long-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/09/16; 14:12
L2	61	((short-term near5 (mov\$4 transfer\$4)) adj5 long-term) with time\$1	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/09/16; 14:13
L4	69	(G10L15/\$ G10L2015/\$).cpc. and (short-term with long-term with time\$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/09/16; 14:15
L5	37	(G10L15/\$ G10L2015/\$).cpc. and (long-term with utterances)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/09/16; 14:16

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	16555125
	Filing Date	2019-08-29
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-303780

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( Not for submission under 37 CFR 1.99)

Application Number	16555125
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-303780

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**Bibliographic data: CN101236635 (A) — 2008-08-06**

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**Electronic business shopping method and system**

**Inventor(s):** BIAO HAO [US]; SHIJU MATHAI [US] ± (HAO BIAO, ; MATHAI SHIJU)

**Applicant(s):** IBM [US] ± (IBM)

**Classification:** - international: G06Q30/00  
- cooperative: G06F17/243 (EP); G06Q30/00 (EP); G06Q30/0613 (EP); G06Q30/0623 (EP); G06Q30/0633 (EP); G06Q30/0641 (EP)

**Application number:** CN20081008949 20080131

**Priority number(s):** US20070670251 20070201

**Also published as:** US2008189187 (A1) US8078502 (B2)

**Abstract not available for CN101236635 (A)**

**Abstract of corresponding document: US2008189187 (A1)**

The present invention can include an e-commerce shopping method that includes a step of receiving shopper free form input representing a shopping request. A software program can extract semantics from the shopper free form input relating to at least one item available for sale. At least one item can be automatically added to an electronic shopping cart based upon the extracted semantics. A shopper can be permitted to check-out shopping cart items and/or to edit items, item details, and desired quantities contained in the shopping cart.



[19] 中华人民共和国国家知识产权局

[51] Int. Cl.  
G06Q 30/00 (2006.01)



## [12] 发明专利申请公布说明书

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[43] 公开日 2008 年 8 月 6 日

[11] 公开号 CN 101236635A

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[21] 申请号 200810008949.0

[30] 优先权

[32] 2007. 2. 1 [33] US [31] 11/670,251

[71] 申请人 国际商业机器公司

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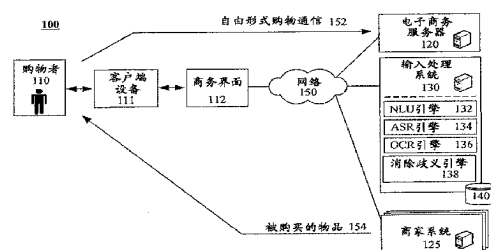
权利要求书 4 页 说明书 13 页 附图 4 页

### [54] 发明名称

电子商务购物方法和系统

### [57] 摘要

本发明可以包括一种电子商务购物方法，所述方法包括接收表示购物请求的购物者自由形式输入的步骤。 软件程序可以从所述购物者自由形式输入中提取关于至少一个可用于销售的物品的语义。 至少一个物品可以基于所述提取的语义被自动添加到电子购物车。 购物者可以被允许结账购物车物品，和/或编辑包含在所述购物车中的物品、物品细节和所需要的数量。



1. 一种电子商务购物方法，包括：

接收表示购物请求的购物者自由形式输入；

软件程序从所述购物者自由形式输入中提取关于至少一个可用于销售的物品的语义；

基于所述提取的语义自动将至少一个物品添加到电子购物车；以及  
为对应购物者提供自动购买包含在所述电子购物车中的物品的能力。

2. 根据权利要求1所述的方法，所述提取步骤进一步包括：

在所述提取步骤期间，确定关于所述自由形式输入的一部分涉及的多个可能物品的歧义；以及

基于包含在机器可读媒体中关于所述购物者的之前存储的数据通过对于所述可能物品中的一个的偏爱来解决所述歧义，其中，所述之前存储的数据包括购物者购买历史数据和购物者偏好数据中的至少一个，其中，所述至少一个被添加的物品包括该解决步骤中所偏爱的物品。

3. 根据权利要求1所述的方法，进一步包括：

在所述提取步骤期间，确定关于所述自由形式输入的一部分涉及的多个可能物品的歧义；

将对所述歧义的可能解释缩减到一组很可能的意义；以及

呈现用于解决所述歧义的一组购物者可选择选项，其中，所述一组选项是基于所述缩减步骤的结果。

4. 根据权利要求1所述的方法，其中，方法1的所述步骤在购物者与自动化商务系统之间的实时交互式通信会话期间被实施。

5. 根据权利要求4所述的方法，进一步包括：

呈现所述电子购物车物品进行购物者确认；

为对应购物者提供至少一个选项以便编辑所呈现的购物车物品信息；

接收用户所选择的响应以对所述电子购物车中的物品结账；以及

在结账期间结束电子商务事务从而结束所述结账物品的购物者购买。

6. 根据权利要求4所述的方法, 其中, 所述实时交互式通信会话是在线基于 web 的购物会话、交互式语音响应会话和文本交换会话中的至少一个。

7. 根据权利要求1所述的方法, 其中, 所接收的自由形式输入在电子邮件消息和传真消息的至少一个中被提供。

8. 根据权利要求1所述的方法, 其中, 所述自由形式输入是自然语言格式的语音输入。

9. 根据权利要求1所述的方法, 其中, 所述自由形式输入是自然语言格式的文本输入。

10. 根据权利要求1所述的方法, 其中, 权利要求1所述的步骤是由至少一个机器根据具有多个代码部分的至少一个计算机程序自动实施的步骤, 其中, 所述多个代码部分可被所述至少一个机器执行。

11. 根据权利要求1所述的方法, 其中, 权利要求1所述的步骤由服务代理和被该服务代理操纵的计算设备的至少一个实施, 所述步骤响应于服务请求而被实施。

12. 一种用于进行电子商务的系统, 包括:

电子商务服务器, 其被配置为接收购物者输入、基于该输入进行电子商务事务, 其中, 在所述电子商务事务期间, 购物者购买至少一个可用物品;

输入处理系统, 其被配置为: 接收自由形式购物者输入, 以及语义地将所述自由形式购物者输入解释为关于所述电子商务事务的离散数据字段; 以及

商家数据存储库, 其被配置为记录可用于购买的一组物品, 其中, 所述离散数据字段的至少一部分标识所述一组物品中购物者所需要的那些物品。

13. 根据权利要求12所述的系统, 进一步包括:

消除歧义引擎, 其被配置为, 解决由所述输入处理系统在将包含在所述自由形式购物者输入中的内容转换为被放入所述离散数据字段中的信息

时检测到的歧义；以及

购物者数据存储库，其被配置为存储和索引包括关于购物者偏好和购买历史的信息的购物者特定信息，其中，所述消除歧义引擎利用存储在所述购物者数据存储库中的数据来解决歧义。

14. 根据权利要求 12 所述的系统，进一步包括：

自然语言理解引擎，其被配置为，将自由形式购物者输入转换为进入关联于所述电子商务事务的信息的离散单元的数据。

15. 根据权利要求 14 所述的系统，其中，所述购物者自由形式输入包含在购物者提供的话语中，所述系统进一步包括：

语音识别引擎，其被配置为将所述购物者提供的话语转换为文本，所述文本进一步被所述自然语言理解引擎处理。

16. 根据权利要求 14 所述的系统，其中，所述购物者自由形式输入包含在图像文件中，所述系统进一步包括：

光学字符识别引擎，其被配置为从所述图像文件中提取文本，所述文本进一步被所述自然语言理解引擎处理。

17. 一种购物者面向的电子商务界面，包括：

自然语言输入单元，其中，购物者通过其能够输入自然语言格式的信息；

购物车，其被配置为呈现由所述购物者指定的用于购物者购买的多个物品，其中，所述呈现的物品从经由所述自然语言输入单元提供的输入中确定；以及

至少一个购物交互式选项，其被配置为被用户选择，其中，对所述购物交互式选项的选择导致所述购物车中呈现的物品的改变和涉及所述购物车中呈现的物品的购买的电子商务事务的结束中的至少一个。

18. 根据权利要求 17 所述的界面，进一步包括：

购物者简档编辑界面，其被配置为允许购物者配置物品购买偏好，所述物品购买偏好被自然语言处理系统用于在所述自然语言处理系统将所述输入信息语义地解释为专用于至少一个所呈现的物品的离散数据单元时解

决在所述输入信息中检测到的歧义。

19. 根据权利要求 17 所述的界面，其中，所述界面是可经由具有图形用户界面的浏览器访问的基于 web 的界面，其中，所述自然语言输入单元、所述购物交互式选项和所述购物车由图形用户界面单元表示。

20. 根据权利要求 17 所述的界面，其中，所述界面是用于在实时通信信道上与自动化语音响应系统交互的仅语音界面。

## 电子商务购物方法和系统

### 技术领域

本发明涉及电子商务和自然语言处理领域，特别涉及基于包含在自然语言输入中的内容填充电子商务购物车和/或其它电子商务字段。

### 背景技术

电子商务（**electronic commerce**）或电子商务（**e-commerce**）涉及在网络上和通过计算机进行对商业通信和事务。更具体地说，电子商务包括使用数字通信和通常自动化系统进行的货物和服务的购买和销售以及传输资金。在线购物是一种类型的电子商务事务，其涉及购物者访问链接到电子商务服务器的网站。购物者至商务的服务器事务不限于基于 web 的那些事务，而还包括基于电话的事务（例如交互式语音响应事务）、电子商务事务、基于聊天的事务、基于电子邮件的事务，基于传真的事务等。

常规电子商务购物作为购物者与自动化系统之间的一个或更多定向事务被进行。购物者典型通过可用物品的目录来浏览或使用数据库搜索控制来基于购物者提供的准则搜索所述目录。购物者可以选择感兴趣的物品，并且可以将其添加到电子购物车。一旦购物被完成，则所述购物者可以选择行进到结账阶段，在此处，支付和运货细节可以被提供，以及该购物会话可以结束。

当所述目录中的可用物品的数量巨大时，从数千物品中对几个物品进行购物对于购物者可以是非常冗长的任务。通常，用户无法定位所需要的物品，即使被访问的商务源可能包括该物品。当所述商务源包括来自许多不同商家源的物品的合并时，所述情形特别可以是真实的。例如，购物者可以与将购物者链接到多个物品源的“网关”源（例如 **AMAZON.COM**、

SHOPZILLA.COM 和 EBAY.COM) 交互。

用于帮助指导购物者的当前方法使用定向购物技术，其中，所述定向购物技术是基于由问卷响应确定的客户偏好、客户购买历史和其它这样的准则。当前的定向购物技术用于预期客户所需要的物品，以及是用于指导营销或指导广告的有效方法。

没有任何已知电子商务技术允许购物者使用自由形式输入来进行购物事务。进一步地，用于自动化商务事务的交互式模态 (modality) 传统上已限于那些屈从于类似目录的界面的模态 (例如经由 web 的在线购物)。所需要的是一种允许客户使用例如自然语言输入的自由形式输入来进行电子商务事务的方法，所述方法是可以跨许多不同交互式模态来进行的用户友好的交互式方法。

#### 发明内容

本发明公开了一种解决方案，其被设计为增强电子商务购物从而购物者可以使用自然语言输入与自动化系统交互。例如，购物者可以用例如英语的自然语言向商务服务器提交请求。所述请求可以是基于口语和/或文本的，以及可以在实时通信会话 (例如电话通信会话、聊天会话等) 期间或使用一组被交换的离散消息 (例如电子邮件、传真等) 来传播。请求可以使用自然语言处理技术来处理，从而有意义的语义可以从购物者输入中被提取，以及智能的计划性动作被作为响应实施。例如，从所述输入确定的物品可以被自动放入购物者的电子购物车中。此外，运货地址、支付信息以及其它电子商务事务特定的信息可以从购物者提供的自然语言输入中被提取。在一个实施例，关联于所述自然语言输入的歧义可以基于之前已记录的购物者偏好 (preference)、购物者简档 (profile)、购买历史等被自动解决。

本发明可以根据与这里呈现的材料一致的众多方面来实现。例如，本发明的一方面可以包括一种用于进行电子商务的系统，所述系统包括电子商务服务器、输入处理系统和商家数据存储库。所述电子商务服务器可以

接收购物者输入，以及可以基于该输入进行电子商务事务。购物者在所述电子商务事务期间可以购买至少一个可用物品。所述输入处理系统可以接收自由形式购物者输入，以及可以将所述自由形式购物者输入语义地解释为关于所述电子商务事务的离散数据字段。所述商家数据存储库可以记录一组可用于购买的物品。所述离散数据字段的至少一部分可以标识所述一组物品中购物者所需要的那些物品。

本发明的另一方面包括一种购物者面向的电子商务界面，所述界面包括自然语言输入单元、购物车和至少一个购物交互式选项。所述自然语言输入单元可以允许购物者输入自然语言格式的信息。所述购物车可以用于呈现由购物者指定的用于购物者购买的物品，其中，所呈现的物品从经由所述自然语言输入单元提供的输入中确定。所述购物交互式选项可以被用户选择，其中，对所述选项之一的选择可以导致呈现在购物车中的物品的至少一个改变。另一选项可以结束涉及呈现在购物车中的物品的购买的电子商务事务。

本发明的再一方面可以包括一种电子商务购物方法，所述方法包括接收表示购物请求的购物者自由形式输入的步骤。软件程序可以从所述购物者自由形式输入中提取关于至少一个可用于销售的物品的语义。至少一个物品可以基于所述提取的语义被自动添加到电子购物车。用于自动购买包含在所述电子购物车中的物品的能力被提供给对应购物者。

应当指出，本发明的各个方面可以被实现为一种用于控制计算设备来实现这里所描述的功能的程序、或一种用于使计算设备能够实施对应于这里公开的步骤的过程的程序。所述程序可以经由将所述程序存储在磁盘、光盘、半导体存储器或任意其它记录媒体中来提供。所述程序还可以作为经由载波传播的被数字编码的信号被提供。所描述的程序可以是单一程序，或者可以被实现为多个子程序，其中，所述多个子程序的每个在单一计算设备内交互，或跨网络空间以分布式方式交互。

还应当指出，这里详述的方法还可以是至少部分地由服务代理和/或被服务代理操纵的机器响应于服务请求而实施的方法。

## 附图说明

附图中示出了当前优选的实施例，然而应当理解，本发明不限于所示的准确方案和手段。

图 1 是一种根据这里公开的发明方案的实施例的、处理包括自然语言输入的自由形式输入的电子商务购物系统的示意图。

图 2 是一种根据这里公开的发明方案的实施例的、在电子商务事务期间处理自由形式输入的系统的示意图。

图 3 是一种根据这里公开的发明方案的实施例的、用于部分地基于自由形式用户输入进行电子商务事务的方法。

图 4 提供了电子商务事务期间的自由形式文本处理的示例。

图 5 是一种根据这里公开的发明方案的实施例的方法的流程图，在所述方法中，一种服务代理可以将电子商务系统配置为处理自由形式购物者输入。

## 具体实施方式

图 1 是一种根据这里公开的发明方案的实施例的、处理包括自然语言输入的自由形式输入的电子购物系统 100 的示意图。更具体地说，购物者 110 可以利用客户端设备 111，其中，该客户端设备 111 托管了通信地链接到网络 150 的商务界面 112。电子商务服务器 120、输入处理系统 130 和商家系统 125 也可以通信地链接到网络 150。购物者 110 可以在实时或非实时通信会话中与电子商务服务器 120 通信，其中，在所述通信会话期间，自由形式的购物者提供的输入 152 可以被传播到电子商务服务器 120。

电子商务服务器 120 可以将所述输入传播到输入处理系统 130，其中，该输入处理系统 130 可以从所述输入提取语义意义。例如，语音输入可以被自动语音识别（ASR）引擎 134 处理，以及然后进一步被自然语言理解（NLU）引擎 132 处理。在另一示例中，包含在图形图像中的（例如来自传真消息或来自图像文件消息的）文本内容在被 NLU 引擎 132 处理之前

可以被光学字符识别 (OCR) 引擎 136 预处理。所提取的语义意义可以与来自至少一个商家系统 125 的可用于购物者 110 进行购买的存货物品比较。匹配可以被添加到由电子商务服务器 120 提供的电子购物车或其它商务产物 (artifact)。购物者 110 可以经由由商务界面 112 提供的选项修改购买细节和/或确认购买 (即, 购物者 110 可以选择修改购物车物品和/或行进到结账)。一旦电子商务事务已完成, 则如果必要, 针对所购买的物品的支付可以被发送, 以及所购买的物品 154 可以被运送到由购物者 110 指定的地址。在一个实施例中, 该地址可以使用输入处理系统 130 从自由形式的购物通信 152 中提取。

如系统 100 中所示, 购物者 110 可以是参与电子商务事务的人类参与者。购物者 110 所使用的商务界面 112 取决于通信类型和基于设备 111 的类型可以改变, 其中, 界面 112 在设备 111 上执行。客户端托管的设备 111 可以包括被配置为接受包括自由形式输入 152 的购物者输入 110 的链接到网络 150 的任意通信设备。设备 111 可以包括但不限于计算机 (例如台式 PC、客户端侧服务器、笔记本计算机、平板式计算设备、个人数字助理、瘦客户端等)、电话 (例如基于线路的电话、移动电话和/或基于会话启动协议的电话)、传真机、电子邮件台、文本交换设备 (例如即时消息传送、文本消息传送和/或使能聊天的设备)、联网扫描仪、娱乐游戏设备、媒体播放设备、嵌入式计算系统和/或电子商务信息站。

电子商务服务器 120 可以包括用于与购物者 110 交互的任意自动化或部分自动化的系统。电子商务服务器 120 例如可以包括 web 服务器、交互式语音响应 (IVR) 系统、传真/电子邮件处理和路由系统等。电子商务服务器 120 可以专用于特定商家 (例如用于该商家的在线店面), 或可以集中地针对由许多不同商家 (例如 AMAZON.COM、包括到 EBAY 商店及其中出售的物品的访问的 EBAY.COM 等) 提供的物品来索引/管理/处理电子商务事务。

在一个实施例中, 电子商务服务器 120 可以使用基于面向服务体系结构 (SOA) 的技术来实现。例如, 服务器 120 可以是这样的部件服务模型

系统的一部分，所述部件服务模型系统允许跨许多模态的交互，以及甚至可以包括在其中会话状态信息被保存的会话中模态切换功能。用于实现电子商务服务器 120 的常规解决方案可以包括国际商业机器公司（IBM）的 **WEBSHERE COMMERCE SERVER**、BEA 系统的 **WEBLOGIC COMMERCE SERVER** 以及多种其它商务解决方案中的任一个。

输入处理系统 130 可以是被配置为处理自由形式的购物通信 152 以及提取例如客户所需要的产品、运货地址、支付细节等的有意义的电子商务信息的任意系统。在一个实施例中，**WEBSPHERE** 部件和扩展可以用于实现系统 130 的各个部件（132 - 138）。然而，其它解决方案是可用的，任意解决方案可以用于系统 100。

消除歧义引擎 138 可以利用存储在数据存储器 140 中的数据、规则和/或偏好来解决歧义。例如，数据存储器 140 可以包括购物者 110 的历史购物信息，所述历史购物信息可以用于确定否则有歧义物品的购物者优选的品牌和尺寸。购物者简档 110 可以也存储在数据存储器 140 中，其中，例如颜色、价格阈值、优选品牌等的客户偏好可以被引擎 138 用于解决歧义。例如信用卡号信息、家庭地址、工作地址等的其它购物者 110 特定数据可以用于将自然语言物品（例如我家）翻译成可以在电子商务事务期间使用的量化地址（例如，宾西法尼亚大街西北 1600 号，华盛顿 DC 20500）。例如最近出售的最流行的品牌、物品的最流行颜色等的其它非购物者特定的偏好可以在数据存储器 140 库中保存，以及被消除歧义引擎 138 使用。

在一个实施例中，对于从自由形式购物输入 152 提取的每个语义单元，置信值可以被建立。这些置信值可以与用户/管理员可配置的阈值比较。当所述置信值超过上阈值时，所述语义单元可以被认为是精确的，以及对应的电子商务字段可以被自动填写。当被关联用于多个可能解释的置信值全都超过下阈值时，购物者可以被提示选择所述多个解释中的一个，以及对应的电子商务字段可以被自动填写。当对于自由形式输入的单元的精确解释不能被确定时（语义单元的置信值落在指定阈值以下），该自由形式单元或者可以被忽略，或者可以触发提示购物者 110 澄清其对于所述有歧义

单元的预期意义的提示操作。

网络 150 可以包括对于传播在载波中编码的数字内容必要的任意硬件/软件和固件。数字内容可以被包括在模拟或数字信号中，以及可以通过数字或语音信道被传播。网络 150 可以包括对于将在计算设备部件之间以及集成设备部件与外围设备之间交换的通信必要的本地部件和数据通路。网络 150 还可以包括网络设备，例如一起构成例如因特网的数据网络的路由器、数据线路、集线器和中间服务器。网络 150 还可以包括基于电路的通信部件和移动通信部件，例如电话交换机、调制解调器、蜂窝通信塔等。网络 150 可以包括基于线路的和/或无线的通信通路。

应当理解，允许自由形式购物通信 152 被应用到电子商务上下文的增强可以以各种方式集成到商业系统中。例如，服务器 120 和 130 可以被集成到单一电子商务硬件/软件系统中，其中，所述系统可以遵循私有或开放标准。在另一示例中，对自由形式输入的已增强处理可以在中间件（例如 WEBSHERE APPLICATION SERVER）中实现，以及经由应用程序接口（API）、链接库和/或对象类、远程过程调用等被远程访问。进一步地，处理自由形式电子商务输入的能力可以在 web 服务中实现，其中，可以使所述 web 服务可用于电子零售商进行例如费用的有价考虑。

图 2 是一种根据这里公开的发明方案的实施例的、用于在电子商务事务期间处理自由形式输入的系统 200 的示意图。系统 200 是系统 100 的可替换标识，以及在所描述的功能的执行时可以利用其中详述的部件。

在系统 200 中，购物者可以使用例如浏览器 212、文本消息传送界面 214、电子邮件界面 214、电话界面 215、传真界面 216、信息站界面 217 等的购物界面 210 进行电子商务事务。输入可以包括输入处理器 220 接收的自由形式输入。输入处理器 220 可以从所述输入中提取关于至少一个可用于销售的物品的语义。可用物品可以在电子商务服务器 222 的存货数据存储库 223 中指定。

每当所提取语义与存货物品之间的无歧义匹配出现时，那些物品可以与任意所涉及的数量和运货地址信息一起被自动放入购物车 230 中。经由

使用购物者简档/偏好数据存储 228 中保存的购物者特定信息,歧义可以被解决,和/或其它条目的精度被改进。购物者特定设置可以使用配置部件 224 来配置,其中,所述配置可以基于自动确定的购物者数据、购物者输入的信息和历史电子商务事务数据。个人化/规则引擎 226 可以建立用于将购物者简档/偏好信息应用于电子商务事务的商家和/或电子商务服务器 120 特定的规则。由配置部件 224 产生的处理可以导致对包含在购物车 230 中的物品/数据的改变。

一旦物品被包含在购物车 230 中,购物者可以被提供一系列用于编辑、更新和另外修改购物车 230 的条目的选项。例如,当对于所需要的物品存在歧义时,购物者可以被提示从所呈现的列表中选择优选的物品。在另一示例中,许多商家源(全部可通过电子商务服务器 222 访问)可以提供购物者所需要的物品,以及该购物者可以选择优选商家源。用于编辑购物车物品的交互可以包括被输入处理器 220 处理的自由形式输入。系统 200 在其各种实施例中设想了多模式接口和/或允许自由形式和指定交互的接口(例如接口 210)的使用。

如这里呈现的,数据存储库 223 和 228 (以及系统 100 的数据存储库 140)的每个可以是配置为存储数字信息的物理或虚拟存储空间。数据存储库 140、223 和 228 可以在任意类型的硬件中物理地实现,其中,所述硬件包括但不限于磁盘、光盘、半导体存储器、数字编码的塑料存储器、全息存储器或任意其它记录媒体。数据存储库 140、223 和 228 的每个可以是独立存储单元以及通过多个物理设备构成的存储单元。另外,信息可以以多种方式存储在数据存储库 140、223 和 228 中。例如,信息可以被存储在数据库结构中,或者可以被存储在文件存储系统的一个或更多文件中,其中,每个文件可以或可以不由于信息搜索目的而被索引。进一步地,数据存储库 140、223 和/或 228 可以利用一种或更多加密机制来保护所存储的信息免于未授权的访问。

图 3 是一种根据这里公开的发明方案的实施例的、用于部分上基于自由形式用户输入进行电子商务事务的方法 300 的流程图。方法 300 可以在

系统 100、系统 200 和/或包括用于语义地解释自由形式输入的输入处理部件的任意类似的电子商务系统中被实施。

方法 300 可以在步骤 305 中开始，此时购物者可以访问电子商务服务器。例如，购物者可以登录由所述电子商务服务器提供的网站。然而，如在系统 100 和 200 中分别详述的那样，方法 300 的交互不限于那些基于 web 的交互，以及其它用于交互的机制（例如经由电话访问 IVR 系统）被设想。在步骤 310 中，所述购物者可以向电子商务系统提交自然语言（或其它自由形式）格式的购物请求。所述购物请求可以使用在线表格、电子邮件、传真、基于语音通信信道的语音、邮件、聊天等来提供。

在步骤 315 中，一种输入处理系统可以处理所述购物请求。所述输入处理系统可以包括语音识别部件、OCR 部件、文本分析部件、NLU 部件等，它们在适当时被选择地用于其中包含了所述购物请求的消息类型。在步骤 320 中，从所述购物请求中确定的一个或更多购物物品可以被检测。

对于歧义的检查可以在步骤 325 中实施。在步骤 330 中，无歧义的被请求物品可以被加载到关联于购物者特定的电子商务事务的购物车或其它电子商务产物中。在步骤 335 中，有歧义的物品可以被配置部件进一步解决。如果初始未被完全解决，则有歧义的物品可以被缩减到可管理的可能物品集合。可选的进一步购物者交互（例如，对于已缩减选项集合的选择）然后可以发生。所述缩减过程的结果可以将新物品放入购物车中。

相应地，如由步骤 340 所示，购物者特定的购物车可以被从所述购物请求确定的物品所填充。另外，一组用户可选择选项可以被缩减，例如编辑选项、结账选项等可以关联于所述购物车。在步骤 345 中，购物者可以被呈现所述购物车，并且可以被允许利用一个或更多所述购物车选项。该呈现可以例如当电子商务事务经由 web 站点进行时实时地发生，或者例如当电子商务事务经由电子邮件、邮件或传真消息进行时通过一系列被交换的消息在一段时间后发生。例如传真通知和/或电子邮件通知和/或邮件通知的通知可以被提供，从而通知购物者其购物请求已被处理。在一可选实施例中，甚至当初始购物请求通过非实时形式（例如邮件、传真、电子邮

件等)来提交时,一种实时交互式模态(例如在线基于 web 的模态和/或基于电话的模态)可以被请求用于结束电子商务事务。

在步骤 350 中,购物者可选地可以编辑已填充的购物车物品。在步骤 355 中,购物者可以确认购物车中的物品,以及可以结束所述电子商务事务。例如,购物者可以选择结账。该用户可以被提示输入任意缺失的结账信息,例如运货地址信息、支付信息等。应当指出,所述信息中的一些或所有可以从之前提供的包含在购物请求中的自由形式输入中自动提取,其中,所述购物请求曾被输入处理部件处理。任意缺失的信息也可以在自由形式消息中提供,其中,所述输入处理部件可以处理该自由形式消息。购买订单(PO)和其它必要的电子商务事务产物可以在事务的结账阶段被自动生成。方法 300 可以针对所需要的其它电子商务事务被重复。此外,过去事务历史可以被存储以及用于增加将来事务的精度。例如,所述配置部件当解决歧义时可以权衡之前已被购物者购买的物品。

图 4 提供了电子商务事务期间的自由形式文本处理的示例 400。示例 400 可以使用系统 100 或 200 来进行。示例 400 包括包含以自由形式格式提供的内容的购物请求消息 405。特别地,内容可以包括“我需要 5 加仑脱脂牛奶、2 个 OREO 饼干包、10 份 CAMPBELL 番茄汤 10 盎司、5 份 QUAKER 燕麦片 30 盎司、2 个大包装 HUGGIES 尿布、3 个背包、10 个 23 盎司的 ENFAMIL 奶粉、5 包奶酪。从我的信用卡收费以及送到我家。”

输入处理部件可以识别在电子商务上下文中有意义的一系列标志(token) 410-428。例如购买物品标志 430 和购买细节标志 432 的不同类型的标志可以被使用。购买物品标志 430 可以包括关于所需要的物品和物品数量的信息。细节标志 432 可以包括关于运货、支付等的信息。

另外,不同标志 410-428 可以具有不同的被标识范围。例如,标志 410-424 具有专用于对应标志单元的单元范围。例如,标志 410 “5 加仑脱脂牛奶”应用于单一购买物品。标志 426-428 具有应用于消息 405 中的所有购买物品标志 430 的全局范围。例如,标志 426 “我的信用卡”标识用于为由标志 410-424 指定的物品进行支付的支付机制。未被示例 400

示出的其它范围也可以存在。例如，自由形式短语“牛奶、橙汁和果汁每样五份”可以具有应用于多个物品（每个是单独的物品特定标志）的范围的数量（其是单独的标志）。

在标志 410 - 428 被生成、分类和/或确定范围之后，第一标志处理阶段可以被实施。在该第一阶段中，标志可以被处理以及被分类为无歧义物品 440 和有歧义物品 445，其中，所述无歧义物品的细节是清晰的。例如，关联于标志 412、414、416 和 418 的物品的品牌、物品和数量可以是清晰的。有歧义物品 445 的品牌和/或其它购买细节可以是初始未知的。

第二处理阶段可以使用购物者的购买历史、偏好和简档信息解决歧义。如由图示 450 所示的，购物者的简档可以指定带铁的 ENFAMIL LIPIL 是优选的婴儿配方。购物者购买历史还可以指示出奶酪是指 KRAFT 10 盎司包装，其解决了标志 424 的歧义。

所述第二处理阶段可以保持一个或更多物品不被解决，例如三个背包的标志 420，其由图示 452 示出。品牌流行度和一般购物者简档信息可以用于定位未被解决物品的一个或更多潜在候选。例如，与背包流行度数据（获取自其它购物者的购买）结合的购物者简档中的质量和价格阈值可以建议背包是指“JANSPORT、COLUMBIA 或 NORTH FACE”，所述建议可以被呈现给购物者进行购物者选择。

当数量、品牌、颜色、商家源和其它准则未被提供时，这些准则可以从客户偏好、历史、商家特价品、流行度和其它这样的因素自动推断出。在一个实施例中，用户界面可以使用用于聚焦用户注意力从而便于确认的可区分指示符来指示所推断的细节。

例如，GUI 界面可以对具有在之前设置的阈值之上的关联精度分数的条目使用与具有较低精度分数的条目不同的已着色字段。背包特定的物品可以在具有红色背景的字段中呈现，有歧义物品的品牌可以在具有黄色背景的字段中呈现，以及无歧义物品可以在具有绿色背景的字段中呈现。当多个可能属性值被确定时，下拉控制可以被提供以允许用户快速调整字段值。例如，用于背包的下拉控制可以包括值 JANSPORT、COLUMBIA、

**NORTH FACE** 和 **OTHER**，其中，**OTHER** 为用户提供不同选项。例如物品颜色和/或商家的进一步可用选项也可以在建立了默认值的下拉选择器中呈现。

应当理解，示例 400 仅是示出这里公开的发明方案的使用的一个可能的示例。本发明不应当限于这里表述的技术和方案。因此，示例 400 用于阐明本发明的各方面的具体示例，以及不旨在被解释为强加于本申请书的发明范围的限制。例如，当前存在多个常规自然语言处理技术，以及本发明不限于这里所讨论的标志标识和处理技术。类似地，众多指导营销和客户偏好确定技术可以用于解决物品歧义。再进一步地，示例 400 中关于用户界面的细节聚焦在基于 web 的 GUI 实施例上，并且其它物品提示、区分和呈现机制更适于其它界面类型。

图 5 是根据这里公开的发明方案的实施例的、在其中服务代理可以配置电子商务系统来处理自由形式购物者输入的方法 500 的流程图。方法 500 可以在系统 100、200 和/或类似系统的上下文中实施。

方法 500 可以在步骤 505 中开始，此时客户启动服务请求。该服务请求可以是用于将现有电子商务系统扩展为处理自由形式输入或用于建立具有自由形式输入处理功能的新电子商务系统的对服务代理的请求。该服务请求还可以是用于检修处理自由形式输入的现有电子商务系统的问题的请求。

在步骤 510 中，人类代理可以被选为响应所述服务请求。在步骤 515 中，所述人类代理可以分析客户的当前系统，以及可以开发解决方案。在步骤 520 中，所述人类代理可以将客户的系统配置为进行涉及自由形式输入的电子商务事务，其中，所述自由形式输入由自动化计算部件自动处理。这可以包括所述电子商务系统方面中的硬件/软件的安装以及客户员工的培训。在步骤 525 中，人类代理可以完成服务活动。

本发明可以用硬件、软件或硬件和软件的组合实现。本发明可以以集中方式在一个计算机系统中或者以分布式方式实现，其中，在所述分布式方式中，不同单元跨几个互连的计算机系统散布。适于实施这里描述的方

法的任意种类的计算机系统或其它装置是适合的。硬件和软件的典型组合可以是具有这样的计算机程序的通用计算机系统，所述计算机程序当被加载和执行时控制所述计算机系统从而其实施这里描述的方法。

本发明还可以被嵌入计算机程序产品中，其中，所述计算机程序产品包括使能这里描述的方法的实现的所有特征，以及，所述计算机程序产品当被加载到计算机系统中时能够实施这些方法。本发明上下文中的计算机程序是指用任意语言、代码或符号对指令集的任意表述，其中，所述指令集旨在导致系统或直接地或在以下的任一个或两个之后具有实施特定功能的信息处理功能：a) 转换为另一语言、代码或符号；b) 用不同材料形式再现。

本发明在不脱离其精神或基本属性的情况下可以以其它形式来实现。相应地，为指示本发明的范围，应当参考下面的权利要求而非前述说明书。

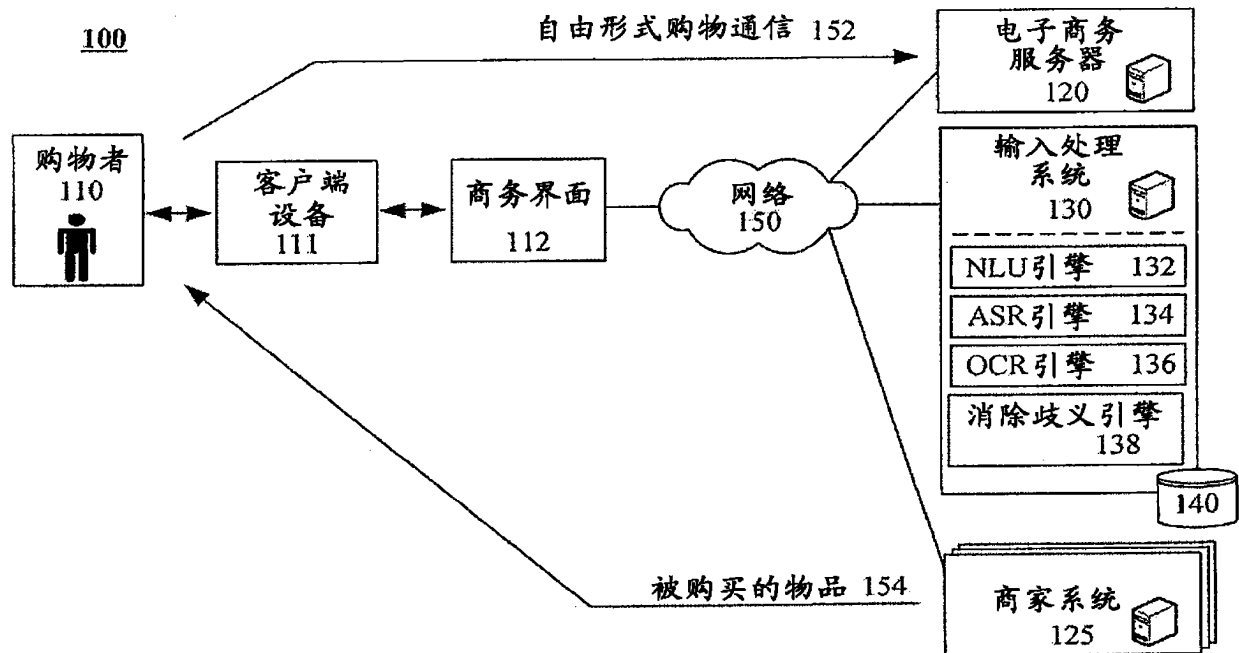


图 1

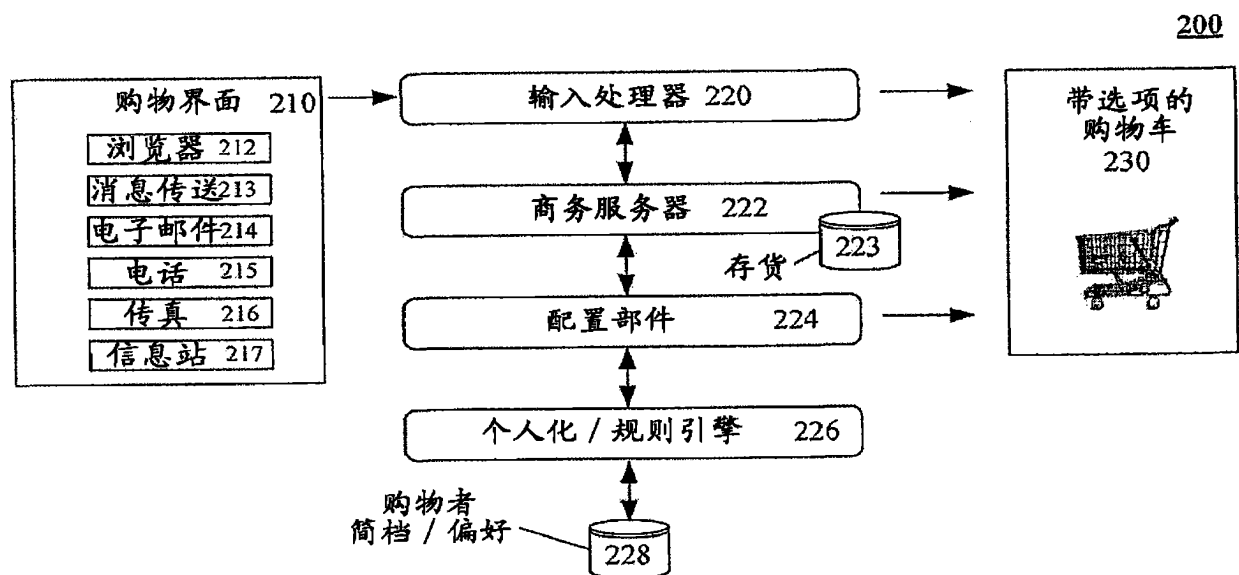


图 2

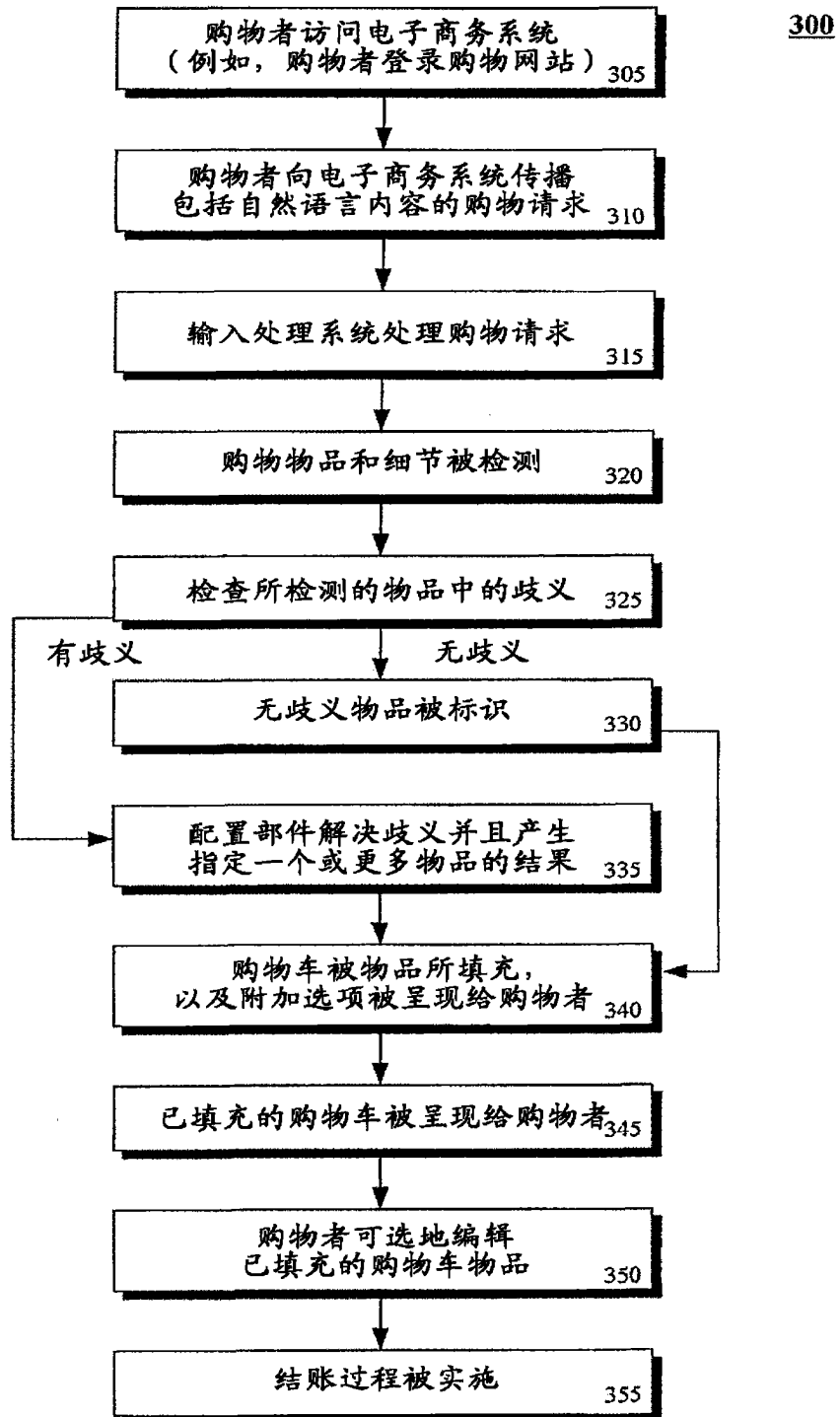
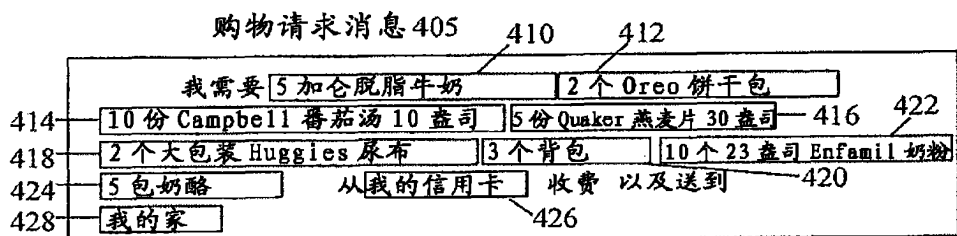


图 3

400



被购买的物品 430

5加仑脱脂牛奶  
 2个Oreo饼干包  
 10份Campbell番茄汤 10盎司  
 5份Quaker燕麦片 30盎司  
 2个大包装Huggies尿布  
 3个背包  
 10个23盎司Enfamil奶粉  
 5包奶酪

购物细节 432

我的信用卡 -> VISA  
 我的家

无歧义物品 440

品牌	物品	数量
Oreo	饼干 - 小	2
Campbell	番茄汤 10盎司	10
Quaker	燕麦片 - 30盎司	5
Huggies	尿布 大包装	5

有歧义物品 442

品牌	物品	数量
	背包	3
	Enfamil	10
	奶酪	5

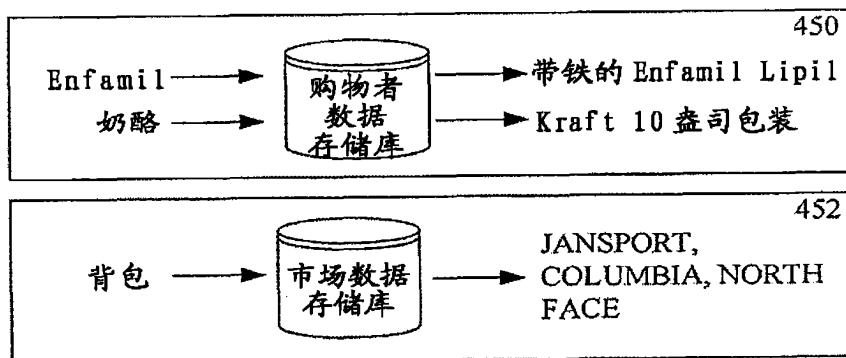


图 4

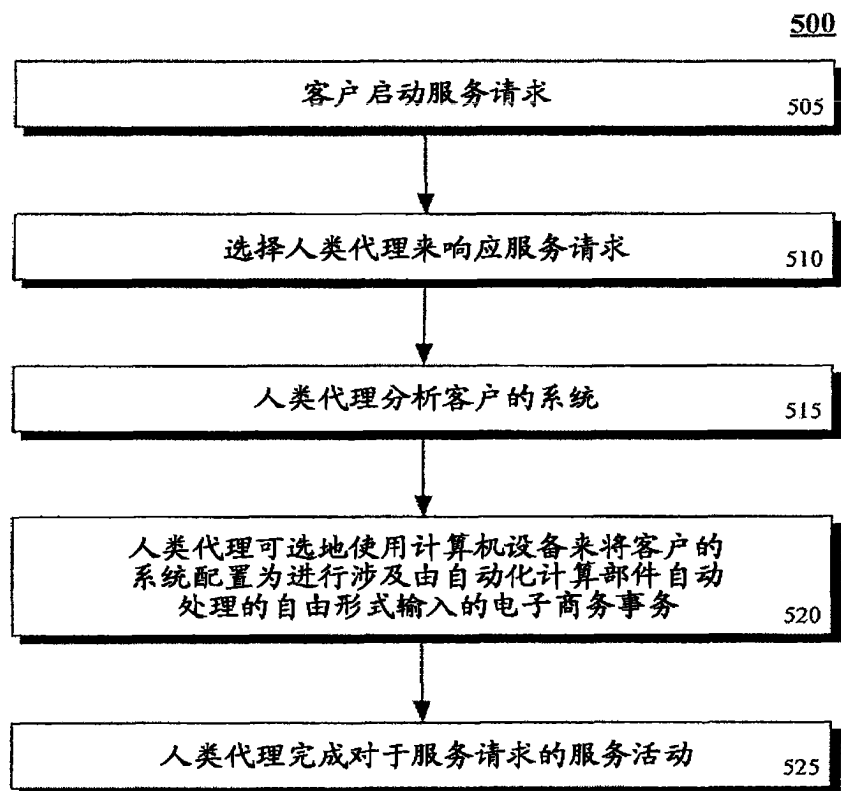


图 5

Electronic Patent Application Fee Transmittal				
Application Number:		16555125		
Filing Date:		29-Aug-2019		
Title of Invention:		SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
First Named Inventor/Applicant Name:		Larry BALDWIN		
Filer:		Mark Andrew Patrick/Susan Trader		
Attorney Docket Number:		62KC-303780		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	240	240
<b>Total in USD (\$)</b>				<b>1240</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37472197
<b>Application Number:</b>	16555125
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7205
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
<b>First Named Inventor/Applicant Name:</b>	Larry BALDWIN
<b>Customer Number:</b>	133759
<b>Filer:</b>	Mark Andrew Patrick/Susan Trader
<b>Filer Authorized By:</b>	Mark Andrew Patrick
<b>Attorney Docket Number:</b>	62KC-303780
<b>Receipt Date:</b>	16-OCT-2019
<b>Filing Date:</b>	29-AUG-2019
<b>Time Stamp:</b>	13:47:15
<b>Application Type:</b>	Utility under 35 USC 111(a)

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RAM confirmation Number	E20190FD47433451
Deposit Account	504561
Authorized User	Susan Trader

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37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)  
 37 CFR 1.20 (Post Issuance fees)  
 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	Issue Fee Payment (PTO-85B)	62KC-303780_Issue_Fee.pdf	88654	no	1
			756def35973afd2fc2841a1fec6c59d60a4efd83		
Warnings:					
Information:					
2	Miscellaneous Incoming Letter	62KC-303780_Comments_on_Statement_of_Reasons_for_Allowance.pdf	122507	no	2
			6988d3087396821ad7f422e8b57453fd8b290437		
Warnings:					
Information:					
3	Transmittal Letter	62KC-303780_IDS_Transmittal-Letter.pdf	498816	no	1
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Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Form (SB08)	62KC-303780_PTO_IDS-Form.pdf	1053069	no	4
			4dd897921fd8557db81ac55941a786fe98974605		
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
5	Other Reference-Patent/App/Search documents	62KC-303780_Other_CNOA_09-02-19.pdf	2996320	no	14
			d761329621b02b44d8a92582d3f722df53a53d5d		
Warnings:					
Information:					

6	Foreign Reference	62KC-303780-Foreign-001.pdf	1709229	no	23
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Warnings:					
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7	Fee Worksheet (SB06)	fee-info.pdf	32185	no	2
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Information:					
Total Files Size (in bytes):			6500780		
<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> 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> 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> 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>					

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450

By fax, send to: (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)

133759 7590 09/23/2019  
 Sheppard Mullin Richter & Hampton LLP  
 650 Town Center Drive, 10th Floor  
 Costa Mesa, CA 92626

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780	7205

TITLE OF INVENTION: SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	12/23/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
YEN, ERIC L	2658	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 03-09 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 Sheppard Mullin Richter & Hampton LLP

(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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

VB Assets, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Bellevue, Washington

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 504561

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 /Mark A. Patrick/

Date October 16, 2019

Typed or printed name Mark A. Patrick

Registration No. 72,958

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

<b>In Re Patent Application Of:</b>	Larry BALDWIN <i>et al.</i>	)	<b>Attorney Docket No.:</b>	62KC-303780
<b>Serial No.:</b>	16/555,125	)	<b>Confirmation No.:</b>	7205
<b>Filing Date:</b>	August 29, 2019	)	<b>Examiner:</b>	Eric L. Yen
		)	<b>Art Unit:</b>	2658

**For:** SYSTEM AND METHOD FOR A COOPERATIVE  
CONVERSATIONAL VOICE USER INTERFACE

**COMMENTS ON STATEMENT OF REASONS FOR  
ALLOWANCE****MAIL STOP ISSUE FEE**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Submitted: October 16, 2019

Dear Sir:

In response to the Reasons for Allowance provided in the Notice of Allowance mailed September 23, 2019, and prior to payment of the issue fee payment, Applicant submits the **Remarks** beginning on page 2 of this paper.

It is not believed that extensions of time or fees for net addition of claims are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 504561 (**Ref. No. 62KC-303780**).

## **REMARKS**

In response to the Examiner's Statement of Reasons for Allowance in the Notice of Allowability mailed on September 23, 2019, Applicant respectfully submits that the subject matter of the allowed claims are patentable for their respective recitations of claimed combinations as a whole, without any particular criticality or distinguishing feature being attributable to any one or more of such features, and without any narrowing interpretation being imposed on any of such features. As such, Applicant submits that no one element or limitation in particular should be deemed to impart to or be required for patentability of the claims.

Furthermore, Applicant respectfully submits that the independent claims are all separately patentable from each other and are patentable for the subject matter specifically recited as a whole in each of those claims. Applicant also submits that the dependent claims are allowable for their dependence on the allowed independent claims and further for the additional subject matter recited in each of those dependent claims.

The Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the application's disclosure. Accordingly, reviewers of this or any child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers, disavowals, or abandonments of any subject matter supported by the present application, and any prior or alleged disclaimers, disavowals, or abandonments are hereby rescinded.

These comments are being filed concurrently with payment of the Issue Fee.

Respectfully submitted,

Date: **October 16, 2019**

**SHEPPARD MULLIN RICHTER & HAMPTON LLP**

By:           / Mark A. Patrick /            
Mark A. Patrick  
Registration No. 72,958

**Customer No. 133759**

2099 Pennsylvania Avenue, NW, Suite 100  
Washington, DC 20006-6801  
Main: 202-747-1900  
Direct Dial: 202-747-2192  
Fax: 202-747-3853

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	16/555,125
	Filing Date	08/29/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
Page 1 of 1	Matter Number	62KC-303780

<b>GENERAL</b>
<p>Pursuant to 37 C.F.R. 1.97 and 1.98 and to the duty of disclosure set forth in 37 C.F.R. 1.56, the Examiner in charge of the above-identified application is requested to consider and make of record the references listed herewith. A copy of each listed reference, other than U.S. patents/applications and references cited in a parent application, is enclosed.</p> <p>Although the information submitted herewith may be "material" to the Examiner's consideration of the subject application, this submission is not intended to constitute an admission that such information is "prior art" as to the claimed invention.</p> <p>In accordance with 37 C.F.R. 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.</p>

<b>TIMING</b>
<p>In accordance with 37 CFR 1.97(d), this Information Disclosure Statement is being filed after the period specified in 37 CFR 1.97(c) and on or before payment of the issue fee.</p>

<b>CERTIFICATION STATEMENT</b>
<p>Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.</p>

<b>FEE</b>
<p>This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(d). Therefore, this Information Disclosure Statement is subject to the \$240 (large entity) fee set forth in 37 CFR 1.17(p).</p>

<b>ADDITIONAL COMMENTS</b>
<p>This reference was cited in a search report by a foreign patent office in a counterpart foreign application. Submission of the search report that indicates the degree of relevance found by the foreign office is provided. An explanation for the types of related documents is as follows:</p> <p>X: The document that when taken alone, prejudices the novelty of the inventiveness</p> <p>Y: The document that when combined with other document(s) of Y type cited in this report, prejudices the inventiveness.</p> <p>A: The background art document.</p>

<b>SIGNATURE</b>			
<b>Signature</b>	/ Mark A. Patrick /	<b>Date</b>	2019-10-16
<b>Name</b>	Mark A. Patrick	<b>Registration Number</b>	72,958



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780	7205
133759	7590	11/21/2019		
Sheppard Mullin Richter & Hampton LLP			EXAMINER	
650 Town Center Drive, 10th Floor			YEN, ERIC L	
Costa Mesa, CA 92626				
			ART UNIT	PAPER NUMBER
			2658	
			NOTIFICATION DATE	DELIVERY MODE
			11/21/2019	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):

SheppardMullin\_Pair@firsttofile.com  
dmipdocketing@sheppardmullin.com

<b>Supplemental Notice of Allowability</b>	<b>Application No.</b> 16/555,125	<b>Applicant(s)</b> BALDWIN et al.	
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658	<b>AIA (FITF) Status</b> 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 IDS filed 10/16/19.  
☐ 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 1-6,8-16 and 18-20 . 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](mailto: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 type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Examiner's Amendment/Comment                  |
| 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____. | 6. <input 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. _____.                             |   |

/ERIC YEN/  
Primary Examiner, Art Unit 2658

<b><i>Search Notes</i></b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658

CPC - Searched*		
Symbol	Date	Examiner
G10L 15/063, 15/28, 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228	09/16/2019	EY

CPC Combination Sets - Searched*		
Symbol	Date	Examiner


US Classification - Searched*			
Class	Subclass	Date	Examiner

\* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Review of parent case 16/417,173	09/16/2019	EY
EAST Search (attached)	09/16/2019	EY
EAST Search (attached)	11/18/2019	EY
Review IDS references	11/18/2019	EY

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G10L	15/063, 15/28, 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228	09/16/2019	EY


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<b>Issue Classification</b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.	
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658	

CPC						
Symbol					Type	Version
G10L	/	15	/	18	F	2013-01-01
G10L	/	15	/	1815	I	2013-01-01
G10L	/	15	/	22	I	2013-01-01
G10L	/	25	/	51	I	2013-01-01
G10L	/	15	/	1822	I	2013-01-01
G06F	/	17	/	2785	I	2013-01-01
G10L	/	17	/	22	I	2013-01-01
G06F	/	3	/	167	I	2013-01-01
G10L	/	2015	/	0631	A	2013-01-01
G10L	/	2021	/	02166	A	2013-01-01
G10L	/	15	/	183	A	2013-01-01
G10L	/	2015	/	225	A	2013-01-01
G10L	/	2015	/	228	A	2013-01-01

CPC Combination Sets					
Symbol			Type	Set	Ranking
	/		/		

NONE (Assistant Examiner) _____ (Date) _____		<b>Total Claims Allowed:</b> 18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner) _____ (Date) _____		18 November 2019 O.G. Print Claim(s) 1	O.G. Print Figure 3


<b>Issue Classification</b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.	
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658	

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G10L15/18	/	15	/ 18
G10L15/22	/	15	/ 22
G10L25/51	/	25	/ 51
G06F17/27	/	17	/ 27
G10L17/22	/	17	/ 22
G06F3/16	/	3	/ 16
G10L15/06	/	15	/ 06
G10L21/0216	/	21	/ 0216
G10L15/183	/	15	/ 183
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE (Assistant Examiner) _____ (Date) _____		<b>Total Claims Allowed:</b> 18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner) _____ (Date) _____		18 November 2019 O.G. Print Claim(s) 1	O.G. Print Figure 3

<b>Issue Classification</b> 	<b>Application/Control No.</b> 16/555,125	<b>Applicant(s)/Patent Under Reexamination</b> BALDWIN et al.
	<b>Examiner</b> ERIC YEN	<b>Art Unit</b> 2658

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input checked="" type="checkbox"/> T.D. <input type="checkbox"/> R.1.47															
<b>CLAIMS</b>															
<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>	<b>Final</b>	<b>Original</b>
1	1	10	11												
2	2	11	12												
3	3	12	13												
4	4	13	14												
5	5	14	15												
6	6	15	16												
7	8	16	18												
8	9	17	19												
9	10	18	20												

NONE  (Assistant Examiner) _____ (Date) _____		<b>Total Claims Allowed:</b> 18	
/ERIC YEN/ Primary Examiner, Art Unit 2658 (Primary Examiner) _____ (Date) _____		18 November 2019 O.G. Print Claim(s) 1	O.G. Print Figure 3

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

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	1	"20130311324".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:20
L7	1	"20080189187".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:21
L8	455	(G10L15/\$ G10L2015/\$).cpc. and (short-term with long-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:21
L9	30	(G10L15/\$ G10L2015/\$).cpc. and (short-term with long-term with profile\$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:21
L10	264	(G10L15/\$ G10L2015/\$).cpc. and (short-term with long-term with user\$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:21
L11	1	"6785651".pn. and context\$4	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:27
L15	73	(G10L15/\$ G10L2015/\$).cpc. and (short-term with long-term with time\$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:33
L16	1	"20050240412".pn. and long-term	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:34
L17	1	"20050240412".pn. and short-term	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:35
L18	1	"20050043956".pn. and (short-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:39
L19	1	"20050043956".pn. and (long-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/11/18: 17:40

**11/ 18/ 2019 5:44:13 PM****C:\ Users\ eyen\ Documents\ EAST\ Workspaces\ 16555125.w sp**

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	16555125
	Filing Date	2019-08-29
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-303780

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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/E.Y./	1	101236635A	CN		2008-08-06	IBM		×

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/ERIC YEN/

11/18/2019

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	16555125
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-303780

1

If you wish to add additional non-patent literature document citation information please click the Add button

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**EXAMINER SIGNATURE**

Examiner Signature	/ERIC YEN/	Date Considered	11/18/2019
--------------------	------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	16555125
Filing Date	2019-08-29
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-303780

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-10-16
Name/Print	Mark A. Patrick	Registration Number	72,958

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**

/ERIC YEN/

11/18/2019

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/ERIC YEN/

11/18/2019



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/555,125	12/17/2019	10510341	62KC-303780	7205

133759 7590 11/26/2019  
Sheppard Mullin Richter & Hampton LLP  
650 Town Center Drive, 10th Floor  
Costa Mesa, CA 92626

## 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 0 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):

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/555,125	08/29/2019	Larry BALDWIN	62KC-303780

**CONFIRMATION NO. 7205**

## PUBLICATION NOTICE



\*OC000000113459087\*

133759

Sheppard Mullin Richter & Hampton LLP  
650 Town Center Drive, 10th Floor  
Costa Mesa, CA 92626

**Title:**SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

**Publication No.**US-2019-0385596-A1

**Publication Date:**12/19/2019

## 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 publically 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/>.

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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 <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	REQUEST ID
16/555,125	10510341	2658	104413

## PAIR Correspondence Address/Fee Address Change

The following fields have been changed to Customer Number 00197 on 01/30/2020 via Private PAIR in view of the certification copied below that authorized the change.

- Maintenance Fee Address

The address for Customer Number 00197 is:

00197

CPA GLOBAL LIMITED

2318 Mill Road 12th Floor

ALEXANDRIA, VA 22314

**I certify, in accordance with 37 CFR 1.4(d)(4) that I am:**

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

<b>Signature:</b>	/James G. Gatto/
<b>Name:</b>	James G. Gatto
<b>Registration Number:</b>	32694