PTO/AIA/15 (10-17)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	62KC-298931
First Named Inventor	Larry BALDWIN
Title	See the Application Data Sheet
Priority Mail Express® Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. ☐ **Applicant asserts small entity status.** See 37 CFR 1.27
3. ☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. ☑ **Specification** [*Total Pages* 38] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. ☑ **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 3]
6. **Inventor's Oath or Declaration** [*Total Pages* 5] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
7. ☑ **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   ☐ Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. – c. are required)*
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

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

ACCOMPANYING APPLICATION PAPERS

10. ☐ **Assignment Papers** (cover sheet & document(s)) Name of Assignee _____
11. ☐ **37 CFR 3.73(c) Statement** (*when there is an assignee*) ☑ **Power of Attorney**
12. ☐ **English Translation Document** (*if applicable*)
13. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
14. ☐ **Preliminary Amendment**
15. ☐ **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. ☐ **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. ☐ **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. ☐ **Other:** _____

***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).

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 133759 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Mark A. Patrick/	Date	May 20, 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.
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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.

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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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

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.
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.

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Larry		BALDWIN	

Residence Information (Select One) ● US Residency Non US Residency 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	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Tom		FREEMAN	

Residence Information (Select One) ◉ US Residency Non US Residency 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	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Michael		TJALVE	

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

City	Bellevue	State/Province	WA	Country of Residence	US

Mailing Address of Inventor:

Address 1	14904 SE 47th Court		
Address 2			
City	Bellevue	State/Province	WA
Postal Code	98006	Country	US

Inventor 4 — 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

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 — 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. — Add

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.**

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

Customer Number	133759		
Email Address	DMIPDocketing@sheppardmullin.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE		
Attorney Docket Number	62KC-298931	**Small Entity Status Claimed**	☐
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:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** 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 **has not and will not** 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.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	133759		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	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)
	Division of	14691445	2015-04-20

Prior Application Status: Patented — Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
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 **Add** 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)[i] 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[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	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.

Applicant 1 — Remove

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.

Clear

● 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:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	VB Assets, LLC		
Mailing Address Information For Applicant:			
Address 1	13407 NE 37th Place		
Address 2			
City	Bellevue	**State/Province**	WA
Country	US	Postal Code	98005
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

Assignee 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.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

Organization Name	VB Assets, LLC

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	13407 NE 37th Place		
Address 2			
City	Bellevue	**State/Province**	WA
Country i	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. Add

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.

Signature	/Mark A. Patrick/			Date (YYYY-MM-DD)	2019-05-20
First Name	Mark	Last Name	Patrick	Registration Number	72958

Additional Signature may be generated within this form by selecting the Add button. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	62KC-298931
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE	

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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 CooperationTreaty.

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.

SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE

CROSS-REFERENCE TO RELATED APPLICATIONS

[001] This application 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 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 participant 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		
	Participant A	*Participant B*
	User	Voice User Interface
GOAL	Get information/action	Provide information/action
ROLE	Leader/Consumer	Supporter/Dispenser
INFORMATION ALLOCATION	Less	More

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

EXPLORATORY		
	Participant A	*Participant B*
	User	Voice User Interface
GOAL	Gather/share information	Gather/share information
ROLE	Follower/Consumer and Leader/Dispenser	Follower/Consumer and 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:

User	**Do you know** [*mumbled words*] Seattle [*more mumbled words*]?
Voice User Interface	Did you want Seattle sports scores, weather, traffic, or news?

User	**Find me** [*mumbled words*] Seattle [*more mumbled words*]?
Voice User Interface	I *found* Seattle, did you want sports scores, weather, traffic, or news?

User	**Get me** [*mumbled words*] Seattle [*more mumbled words*]?
Voice User Interface	I've *got* Seattle, did you want me to *get* 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:

User	What's the weather like in Dallas?
Voice User Interface	In Dallas, it's sunny and 90 degrees.
User	What theaters are showing the movie "The Fantastic Four" there?
Voice User Interface	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:

User	Can you **get** [*mumbled words here*] Mariners [*more mumbled words*]?
Voice User Interface	*I've got* the score for the Mariners game? 4-2 Mariners.
User	No, the start time for tomorrow's game.
Voice User Interface	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 adapted based on a user's manner of speaking, 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:

receiving, by the computer system, a user input comprising a natural language utterance;

recognizing, by the computer system, one or more words or phrases from the natural language utterance;

identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

identifying, by the computer system, a manner in which the first natural language utterance was spoken; and

generating, by the computer system, a response to the natural language utterance based on the interpretation and the identified manner in which the first natural language utterance was spoken.

2. The method of claim 1, wherein the manner in which the first natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

3. The method of claim 1, wherein the response comprises a voice response, and wherein generating the voice response to the natural language utterance based on the identified manner comprises varying one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

4. The method of claim 1, the method further comprising:

obtaining, by the computer system, contextual signifiers and/or grammatical rules; and

generating, by the computer system, the response to the natural language utterance based further on the obtained contextual signifiers and/or grammatical rules.

5. The method of claim 1, the method further comprising:

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

wherein the manner in which the first natural language utterance was spoken is identified based on the short-term knowledge.

6. The method of claim 5, the method further comprising:

accumulating, by the computer system, long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period,

wherein the manner in which the first natural language utterance was spoken is identified based further on the long-term knowledge.

7. The method of claim 6, 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 natural language utterance is determined based further on the profile associated with the first user.

8. The method of claim 1, wherein generating the response to the natural language utterance further comprises:

generating, by the computer system, the response based on a response format associated with the identified manner.

9. The method of claim 1, wherein recognizing the one or more words or phrases from the natural language utterance comprises:

providing, by the computer system, the natural language utterance as an input to a speech recognition engine; and

obtaining, by the computer system, the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

10. The method of claim 1, the method further comprising:

causing, by the computer system, the response to the natural language utterance to be provided to the user.

11. A system for facilitating natural language system responses adapted based on a user's manner of speaking, 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:

receive a user input comprising a natural language utterance;

recognize one or more words or phrases from the natural language utterance;

identify a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

identify a manner in which the first natural language utterance was spoken; and

generate a response to the natural language utterance based on the interpretation and the identified manner in which the first natural language utterance was spoken.

12. The system of claim 11, wherein the manner in which the first natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

13. The system of claim 11, wherein the response comprises a voice response, and wherein to generate the voice response to the natural language utterance based on the identified manner, the one or more physical processors are further configured to:

vary one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

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

obtain contextual signifiers and/or grammatical rules; and

generate the response to the natural language utterance based further on the obtained contextual signifiers and/or grammatical rules.

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

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

wherein the manner in which the first natural language utterance was spoken is identified based on the short-term knowledge.

16. The system of claim 15, wherein the one or more physical processors are further configured to:

accumulate long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period,

wherein the manner in which the first natural language utterance was spoken is identified based further on the long-term knowledge.

17. The system of claim 16, 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 natural language utterance is determined based further on the profile associated with the first user.

18. The system of claim 11, wherein to generate the response to the natural language utterance, the one or more physical processors are configured to:

generate the response based on a response format associated with the identified manner.

19. The system of claim 11, wherein to recognize the one or more words or phrases from the natural language utterance, the one or more physical processors are configured to:

provide the natural language utterance as an input to a speech recognition engine; and

obtain the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

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

cause the response to the 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.

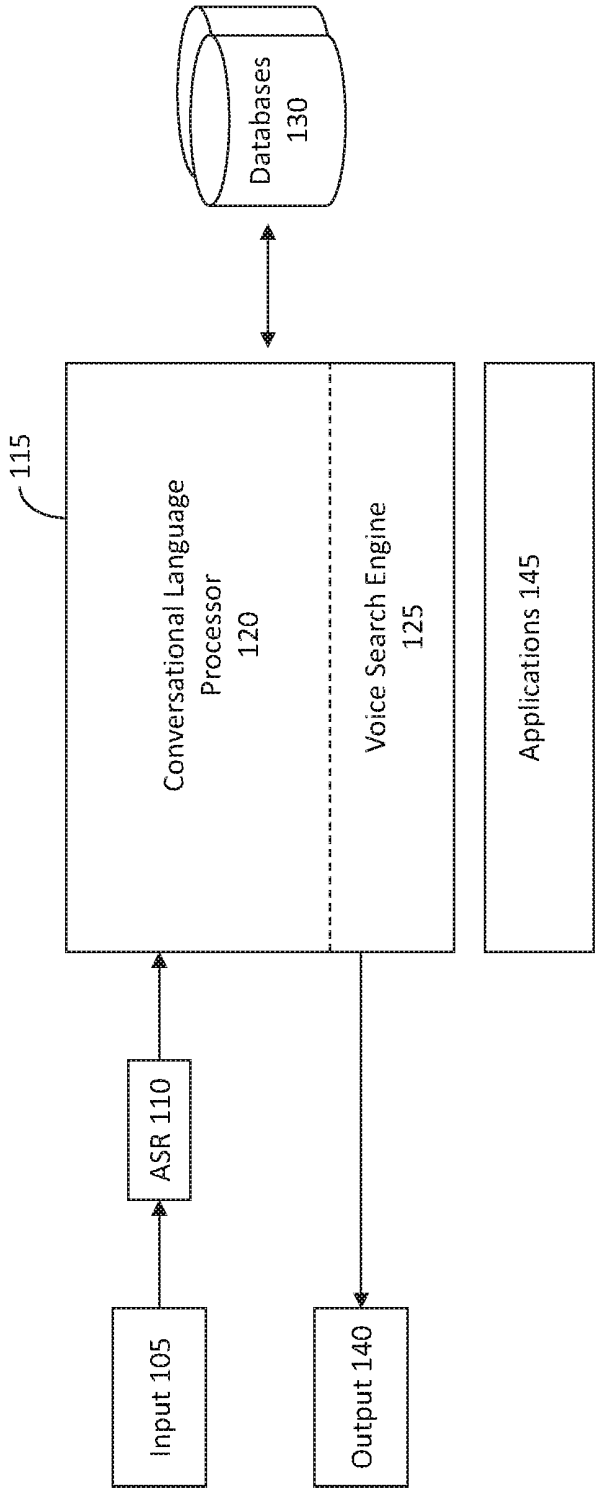

Databases
130
115
Conversational Language
Processor
120
Voice Search Engine
125
Applications 145
ASR 110
Input 105
Output 140

Figure 1

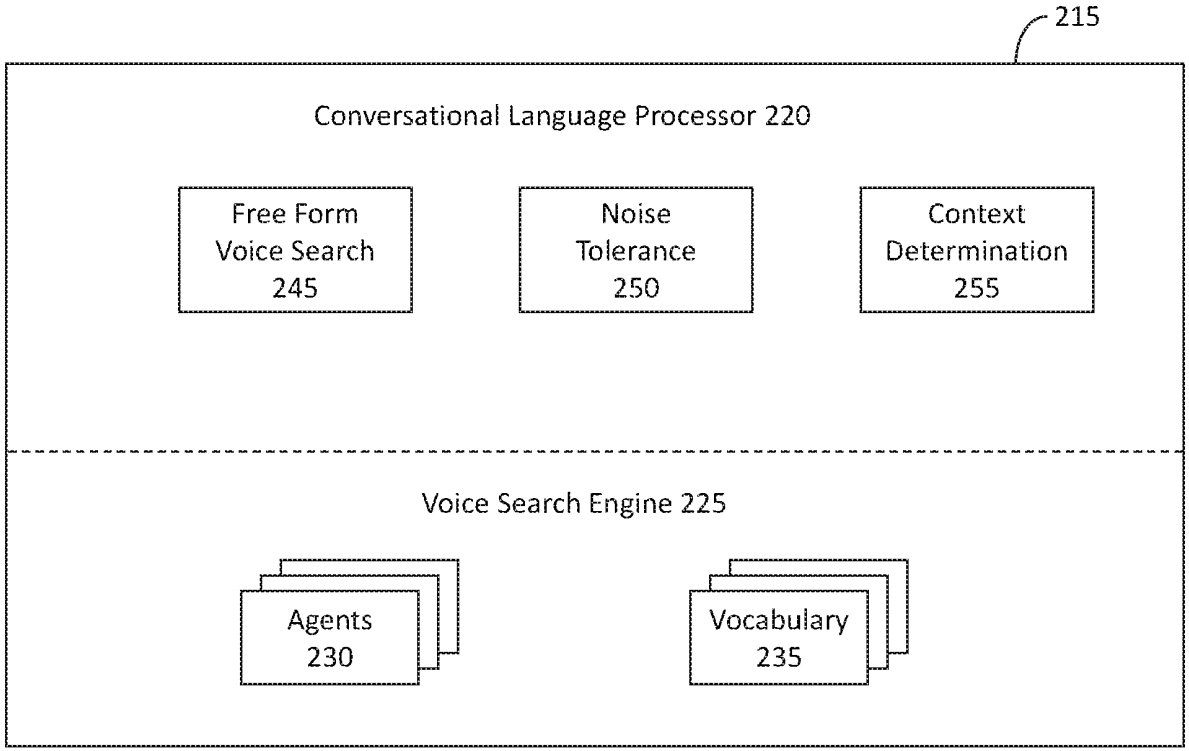

215
Conversational Language Processor 220
Free Form Voice Search 245
Noise Tolerance 250
Context Determination 255
Voice Search Engine 225
Agents 230
Vocabulary 235

Figure 2

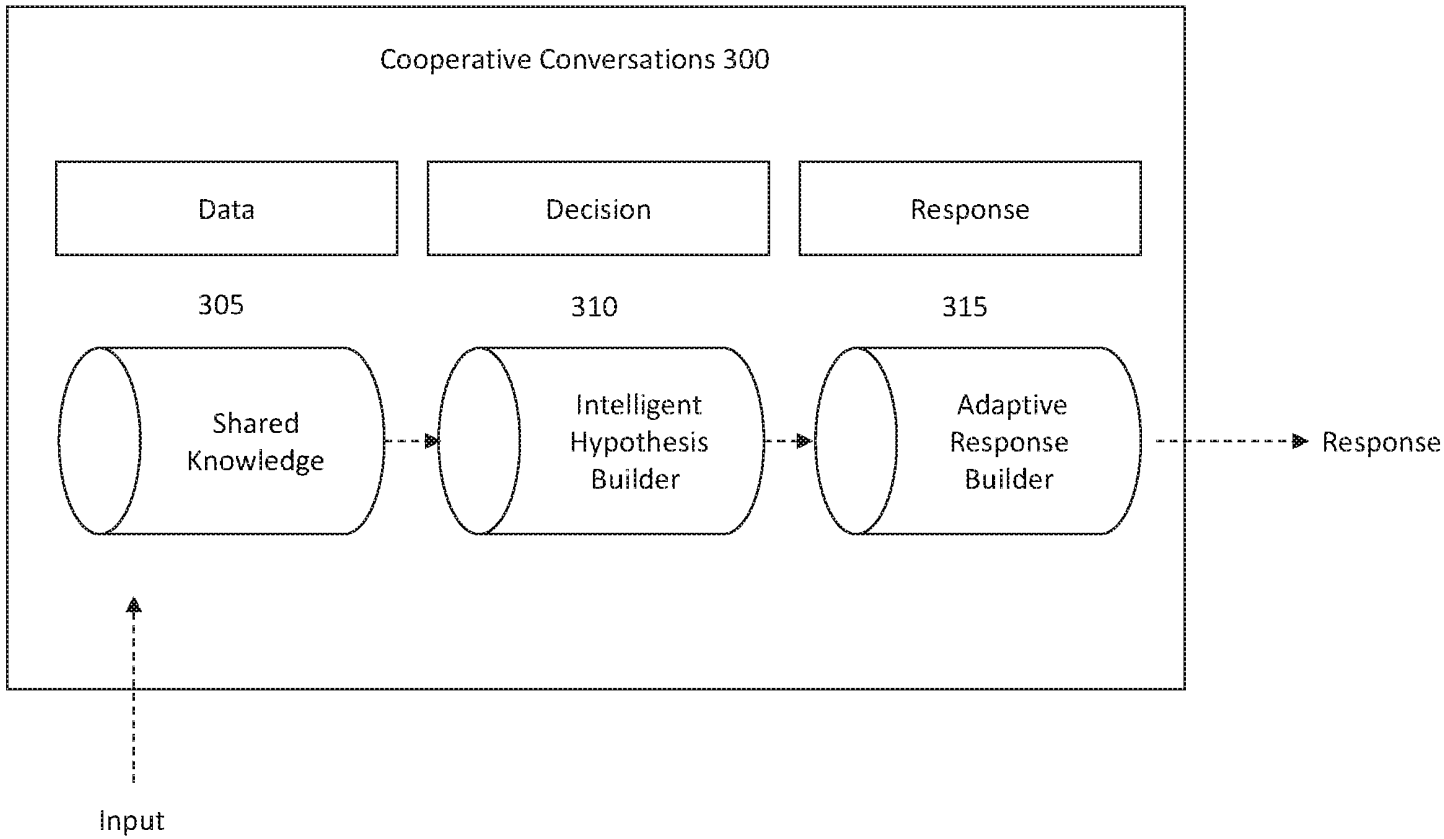

Cooperative Conversations 300
Data
Decision
Response
305
310
315
Shared Knowledge
Intelligent Hypothesis Builder
Adaptive Response Builder
Response
Input

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: _____

ATTORNEY DOCKET NUMBER: 090611-0424826

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(1) Legal Name of Inventor: LARRY BALDWIN

Signature:_____ Date:_____

(2) Legal Name of Inventor: TOM FREEMAN

Signature: [signature] Date: 5/22/2014

(3) Legal Name of Inventor: MICHAEL TJALVE

Signature:_____ Date:_____

ATTORNEY DOCKET NUMBER: **090611-0424826**

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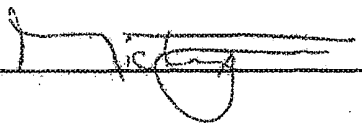
(1) Legal Name of Inventor: **LARRY BALDWIN**

Signature:_____ Date:_____

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

Signature:_____ Date:_____

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

Signature:  Date: 5/18/2014

(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

PTO/AIA/82A (07-13)
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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/AIA82B 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	May 20, 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-298931

SIGNATURE of Applicant or Patent Practitioner

Signature	/Mark A. Patrick/	Date (Optional)	May 20, 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.

☐ *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.**

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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	

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ 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:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

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	/Michael Kennewick/	Date (Optional)	Aug 15, 2018
Name	Michael Ryle 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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	TBD
	Filing Date	05/20/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
Page 1 of 1	**Matter Number**	62KC-298931

GENERAL

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.

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.

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.

TIMING

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.

CERTIFICATION STATEMENT

No certification statement is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(b).

FEE

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

ADDITIONAL COMMENTS

The Foreign Patent Documents and the Non-Patent Literature Documents were cited by or submitted to the Office in Application No. 14/691,445, filed April 20, 2015, 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).

SIGNATURE

Signature	/ Mark A. Patrick /	**Date**	2019-05-20
Name	Mark A. Patrick	**Registration Number**	72,958

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	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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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	9	5208748		1993-05-04	Flores	
	10	5265065		1993-11-23	Turtle	
	11	5274560		1993-12-28	LaRue	
	12	5331554		1994-07-19	GRAHAM JAMES M	
	13	5357596		1994-10-18	Takebayashi	
	14	5369575		1994-11-29	Lamberti	
	15	5377350		1994-12-27	Skinner	
	16	5386556		1995-01-31	Hedin	
	17	5424947		1995-06-13	Nagao	
	18	5471318		1995-11-28	Ahuja	
	19	5475733		1995-12-12	Eisdorfer	

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	Attorney Docket Number	62KC-298931

	20	5479563		1995-12-26	Yamaguchi	
	21	5488652		1996-01-30	Bielby	
	22	5499289		1996-03-12	Bruno	
	23	5500920		1996-03-19	Kupiec	
	24	5517560		1996-05-14	Greenspan	
	25	5533108		1996-07-02	Harris	
	26	5537436		1996-07-16	Bottoms	
	27	5539744		1996-07-23	Chu	
	28	5557667		1996-09-17	Bruno	
	29	5559864		1996-09-24	KennedyJr	
	30	5563937		1996-10-08	Bruno	

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	First Named Inventor	Larry BALDWIN
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	Attorney Docket Number	62KC-298931

	31	5577165		1996-11-19	Takebayashi	
	32	5590039		1996-12-31	Ikeda	
	33	5608635		1997-03-04	Tamai	
	34	5615296		1997-03-25	Vincent M. Stanford	
	35	5617407		1997-04-01	Bareis	
	36	5633922		1997-05-27	August	
	37	5634086		1997-05-27	Rtischev	
	38	5652570		1997-07-29	Lepkofker	
	39	5675629		1997-10-07	Raffel	
	40	5696965		1997-12-09	Dedrick	
	41	5708422		1998-01-13	Blonder	

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	42	5721938		1998-02-24	Stuckey	
	43	5722084		1998-02-24	Chakrin	
	44	5740256		1998-04-14	CastelloDaCosta	
	45	5742763		1998-04-21	Jones	
	46	5748841		1998-05-05	Morin	
	47	5748974		1998-05-05	Johnson	
	48	5752052		1998-05-12	Richardson	
	49	5754784		1998-05-19	Garland	
	50	5761631		1998-06-02	Nasukawa	
	51	5774841		1998-06-30	Salazar	
	52	5774859		1998-06-30	Houser	

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	53	5794050		1998-08-11	Dahlgren	
	54	5794196		1998-08-11	Yegnanarayanan	
	55	5797112		1998-08-18	Komatsu	
	56	5799276		1998-08-25	Komissarchik	
	57	5802510		1998-09-01	Jones	
	58	5829000		1998-10-27	Huang	
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	60	5839107		1998-11-17	Gupta	
	61	5848396		1998-12-08	Gerace	
	62	5855000		1998-12-29	Waibel	
	63	5860059		1999-01-12	AUST HARALD	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	64	5867817		1999-02-02	Catallo	
	65	5878385		1999-03-02	Bralich	
	66	5878386		1999-03-02	Coughlin	
	67	5892813		1999-04-06	Morin	
	68	5892900		1999-04-06	Ginter	
	69	5895464		1999-04-20	Bhandari	
	70	5895466		1999-04-20	Goldberg	
	71	5897613		1999-04-27	Chan	
	72	5899991		1999-05-04	Robert Karch	
	73	5902347		1999-05-11	Backman	
	74	5911120		1999-06-08	Jarett	

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	75	5918222		1999-06-29	Fukui	
	76	5926784		1999-07-20	Richardson	
	77	5933822		1999-08-03	Braden-Harder	
	78	5950167		1999-09-07	Yaker	
	79	5953393		1999-09-14	Culbreth	
	80	5960384		1999-09-28	Douglas E. Brash	
	81	5960397		1999-09-28	Rahim	
	82	5960399		1999-09-28	Barclay	
	83	5960447		1999-09-28	Holt	
	84	5963894		1999-10-05	Richardson	
	85	5963940		1999-10-05	Liddy	

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	86	5982906		1999-11-09	ONO YOSHIHIRO	
	87	5983190		1999-11-09	TrowerII	
	88	5987404		1999-11-16	DellaPietra	
	89	5991721		1999-11-23	Asano	
	90	5995119		1999-11-30	Cosatto	
	91	5995928		1999-11-30	Nguyen	
	92	5995943		1999-11-30	Bull	
	93	6009382		1999-12-28	Martino	
	94	6014559		2000-01-11	Amin	
	95	6018708		2000-01-25	Dahan	
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	97	6028514		2000-02-22	Lemelson	
	98	6035267		2000-03-07	Watanabe	
	99	6044347		2000-03-28	Abella	
	100	6049602		2000-04-11	Foladare	
	101	6049607		2000-04-11	Marash	
	102	6058187		2000-05-02	Chen	
	103	6067513		2000-05-23	Ishimitsu	
	104	6073098		2000-06-06	Buchsbaum	
	105	6076059		2000-06-13	Glickman	
	106	6078886		2000-06-20	Dragosh	
	107	6081774		2000-06-27	deHita	

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	108	6085186		2000-07-04	Christianson	
	109	6101241		2000-08-08	Boyce	
	110	6108631		2000-08-22	Ruhl	
	111	6119087		2000-09-12	Kuhn	
	112	6119101		2000-09-12	Peckover	
	113	6122613		2000-09-19	Baker	
	114	6134235		2000-10-17	Goldman	
	115	6144667		2000-11-07	Doshi	
	116	6144938		2000-11-07	Surace	
	117	6154526		2000-11-28	Dahlke	
	118	6160883		2000-12-12	Jackson	

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	Attorney Docket Number	62KC-298931

	119	6167377		2000-12-26	Gillick	
	120	6173266		2001-01-09	Marx	
	121	6173279		2001-01-09	Levin	
	122	6175858		2001-01-16	Bulfer	
	123	6185535		2001-02-06	Hedin	
	124	6188982		2001-02-13	Chiang	
	125	6192110		2001-02-20	Abella	
	126	6192338		2001-02-20	Haszto	
	127	6195634		2001-02-27	Dudemaine	
	128	6195651		2001-02-27	Handel	
	129	6199043		2001-03-06	Happ	

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	Attorney Docket Number	62KC-298931

	130	6208964		2001-03-27	Sabourin	
	131	6208972		2001-03-27	Grant	
	132	6219346		2001-04-17	Maxemchuk	
	133	6219643		2001-04-17	Cohen	
	134	6219645		2001-04-17	BYERS CHARLES CALVIN	
	135	6226612		2001-05-01	Srenger	
	136	6233556		2001-05-15	Teunen	
	137	6233559		2001-05-15	Balakrishnan	
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	139	6236968		2001-05-22	Kanevsky	
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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)	2019-05-20
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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PTO/SB/08a (02-18)
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	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6915126		2005-07-05	MazzaraJr	
	2	6928614		2005-08-09	Everhart	
	3	6934756		2005-08-23	Maes	
	4	6937977		2005-08-30	Gerson	
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	6	6941266		2005-09-06	Gorin	
	7	6944594		2005-09-13	Busayapongchai	
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	9	6954755		2005-10-11	Reisman	
	10	6959276		2005-10-25	Droppo	
	11	6961700		2005-11-01	Mitchell	
	12	6963759		2005-11-08	Gerson	
	13	6964023		2005-11-08	Maes	
	14	6968311		2005-11-22	Knockeart	
	15	6973387		2005-12-06	Masclet	
	16	6975983		2005-12-13	FORTESCUE NICHOLAS DAVID	
	17	6975993		2005-12-13	Keiller	
	18	6980092		2005-12-27	Turnbull	
	19	6983055		2006-01-03	Luo	

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	20	6990513		2006-01-24	Belfiore	
	21	6996531		2006-02-07	Korall	
	22	7003463		2006-02-21	Maes	
	23	7016849		2006-03-21	Arnold	
	24	7020609		2006-03-28	Thrift	
	25	7024364		2006-04-04	Guerra	
	26	7027586		2006-04-11	Bushey	
	27	7027974		2006-04-11	Justin Eliot Busch	
	28	7027975		2006-04-11	Pazandak	
	29	7031908		2006-04-18	HUANG XUEDONG D	
	30	7035415		2006-04-25	Belt	

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	31	7036128		2006-04-25	Julia	
	32	7043425		2006-05-09	Pao	
	33	7054817		2006-05-30	Shao	
	34	7058890		2006-06-06	George	
	35	7062488		2006-06-13	Reisman	
	36	7069220		2006-06-27	Coffman	
	37	7072834		2006-07-04	Zhou	
	38	7072888		2006-07-04	Alan Perkins	
	39	7076362		2006-07-11	Ohtsuji	
	40	7082469		2006-07-25	Gold	
	41	7085708		2006-08-01	Manson	

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	42	7092928		2006-08-15	Elad	
	43	7107210		2006-09-12	Deng	
	44	7107218		2006-09-12	Preston	
	45	7110951		2006-09-19	Lemelson	
	46	7127395		2006-10-24	Gorin	
	47	7127400		2006-10-24	Koch	
	48	7130390		2006-10-31	Abburi	
	49	7136875		2006-11-14	Anderson	
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	51	7143037		2006-11-28	Chestnut	
	52	7143039		2006-11-28	Stifelman	

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	54	7146319		2006-12-05	Hunt	
	55	7149696		2006-12-12	Shimizu	
	56	7165028		2007-01-16	Gong	
	57	7170993		2007-01-30	Anderson	
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	59	7174300		2007-02-06	Bush	
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	61	7184957		2007-02-27	Brookes	
	62	7190770		2007-03-13	Ando	
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	64	7197460		2007-03-27	Gupta	
	65	7203644		2007-04-10	Anderson	
	66	7206418		2007-04-17	Yang	
	67	7207011		2007-04-17	Mulvey	
	68	7215941		2007-05-08	Beckmann	
	69	7228276		2007-06-05	Omote	
	70	7231343		2007-06-12	Treadgold	
	71	7236923		2007-06-26	Gupta	
	72	7254482		2007-08-07	Kawasaki	
	73	7272212		2007-09-18	Eberle	
	74	7277854		2007-10-02	Bennett	

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	75	7283829		2007-10-16	Christenson	
	76	7283951		2007-10-16	Marchisio	
	77	7289606		2007-10-30	Sibal	
	78	7299186		2007-11-20	Kuzunuki	
	79	7301093		2007-11-27	Sater	
	80	7305381		2007-12-04	Poppink	
	81	7321850		2008-01-22	Wakita	
	82	7328155		2008-02-05	Endo	
	83	7337116		2008-02-26	Charlesworth	
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	85	7366285		2008-04-29	Parolkar	

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	86	7366669		2008-04-29	Nishitani	
	87	7376645		2008-05-20	Bernard	
	88	7380250		2008-05-27	SCHECHTER GREG D	
	89	7386443		2008-06-10	Parthasarathy	
	90	7398209		2008-07-08	Kennewick	
	91	7406421		2008-07-29	Odinak	
	92	7415100		2008-08-19	Cooper	
	93	7415414		2008-08-19	Azara	
	94	7421393		2008-09-02	DiFabbrizio	
	95	7424431		2008-09-09	Greene	
	96	7447635		2008-11-04	Konopka	

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	98	7454368		2008-11-18	Stillman	
	99	7454608		2008-11-18	Gopalakrishnan	
	100	7461059		2008-12-02	Richardson	
	101	7472020		2008-12-30	Brulle-Drews	
	102	7472060		2008-12-30	Gorin	
	103	7472075		2008-12-30	Odinak	
	104	7477909		2009-01-13	Roth	
	105	7478036		2009-01-13	Shen	
	106	7487088		2009-02-03	Gorin	
	107	7487110		2009-02-03	Bennett	

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	108	7493259		2009-02-17	Jones	
	109	7493559		2009-02-17	Wolff	
	110	7502672		2009-03-10	Kolls	
	111	7502730		2009-03-10	WANG KUANSAN	
	112	7502738		2009-03-10	Kennewick	
	113	7512906		2009-03-31	BAIER JOHN JOSEPH	
	114	7516076		2009-04-07	Walker	
	115	7529675		2009-05-05	Maes	
	116	7536297		2009-05-19	Byrd	
	117	7536374		2009-05-19	Au	
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	120	7548491		2009-06-16	Macfarlane	
	121	7552054		2009-06-23	Stifelman	
	122	7558730		2009-07-07	Davis	
	123	7574362		2009-08-11	Walker	
	124	7577244		2009-08-18	Taschereau	
	125	7606708		2009-10-20	Hwang	
	126	7606712		2009-10-20	SMITH STEVEN G	
	127	7620549		2009-11-17	DiCristo	
	128	7634409		2009-12-15	Kennewick	
	129	7640006		2009-12-29	Portman	

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	130	7640160		2009-12-29	DiCristo	
	131	7640272		2009-12-29	Mahajan	
	132	7672931		2010-03-02	Hurst-Hiller	
	133	7676365		2010-03-09	Hwang	
	134	7676369		2010-03-09	Fujimoto	
	135	7684977		2010-03-23	Morikawa	
	136	7693720		2010-04-06	Kennewick	
	137	7697673		2010-04-13	Chiu	
	138	7706616		2010-04-27	Kristensson	
	139	7729913		2010-06-01	LEE NICHOLAS J	
	140	7729916		2010-06-01	Coffman	

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	141	7729918		2010-06-01	Walker	
	142	7729920		2010-06-01	Chaar	
	143	7734287		2010-06-08	Ying	
	144	7748021		2010-06-29	Obradovich	
	145	7788084		2010-08-31	Brun	
	146	7792257		2010-09-07	Vanier	
	147	7801731		2010-09-21	Odinak	
	148	7809570		2010-10-05	Kennewick	
	149	7818176		2010-10-19	Freeman	
	150	7831426		2010-11-09	Bennett	
	151	7831433		2010-11-09	Belvin	

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	152	7856358		2010-12-21	Ho	
	153	7873519		2011-01-18	Bennett	
	154	7873523		2011-01-18	Potter	
	155	7873654		2011-01-18	Bernard	
	156	7881936		2011-02-01	Longe	
	157	7890324		2011-02-15	Bangalore	
	158	7894849		2011-02-22	Kass	
	159	7902969		2011-03-08	Obradovich	
	160	7917367		2011-03-29	DiCristo	
	161	7920682		2011-04-05	Byrne	
	162	7949529		2011-05-24	Weider	

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	163	7949537		2011-05-24	Walker	
	164	7953732		2011-05-31	Frank	
	165	7974875		2011-07-05	Quilici	
	166	7983917		2011-07-19	Kennewick	
	167	7984287		2011-07-19	Gopalakrishnan	
	168	8005683		2011-08-23	Tessel	
	169	8015006		2011-09-06	Kennewick	
	170	8024186		2011-09-20	Jeremy S. De Bonet	
	171	8027965		2011-09-27	Mitsuru Takehara	
	172	8032383		2011-10-04	Bhardwaj	
	173	8060367		2011-11-15	Keaveney	

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	175	8073681		2011-12-06	Baldwin	
	176	8077975		2011-12-13	Ma	
	177	8082153		2011-12-20	Coffman	
	178	8086463		2011-12-27	Ativanichayaphong	
	179	8103510		2012-01-24	Sato	
	180	8112275		2012-02-07	Kennewick	
	181	8140327		2012-03-20	Kennewick	
	182	8140335		2012-03-20	Kennewick	
	183	8145489		2012-03-27	Freeman	
	184	8150694		2012-04-03	Kennewick	

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	186	8170867		2012-05-01	Germain	
	187	8180037		2012-05-15	Delker	
	188	8195468		2012-06-05	Weider	
	189	8200485		2012-06-12	Lee	
	190	8204751		2012-06-19	Giuseppe Di Fabbrizio	
	191	8219399		2012-07-10	Lutz	
	192	8219599		2012-07-10	Tunstall-Pedoe	
	193	8224652		2012-07-17	Wang	
	194	8255224		2012-08-28	Singleton	
	195	8326599		2012-12-04	Nadi Tomeh	

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	196	8326627		2012-12-04	Kennewick	
	197	8326634		2012-12-04	DiCristo	
	198	8326637		2012-12-04	Baldwin	
	199	8332224		2012-12-11	DiCristo	
	200	8340975		2012-12-25	Theodore Alfred Rosenberger	
	201	8346563		2013-01-01	Hjelm	
	202	8370147		2013-02-05	Kennewick	
	203	8447607		2013-05-21	Weider	
	204	8447651		2013-05-21	Nathaniel B. Scholl	
	205	8452598		2013-05-28	Kennewick	
	206	8503995		2013-08-06	Ramer	

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	207	8509403		2013-08-13	Chiu	
	208	8515765		2013-08-20	Baldwin	
	209	8527274		2013-09-03	Freeman	
	210	8577671		2013-11-05	Rakesh Barve	
	211	8589161		2013-11-19	Kennewick	
	212	8612205		2013-12-17	Gregory Alan Hanneman	
	213	8612206		2013-12-17	Achraf Chalabi	
	214	8620659		2013-12-31	DiCristo	
	215	8719005		2014-05-06	Lee	
	216	8719009		2014-05-06	Baldwin	
	217	8719026		2014-05-06	Kennewick	

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	218	8731929		2014-05-20	Kennewick	
	219	8738380		2014-05-27	Baldwin	
	220	8849652		2014-09-30	Weider	
	221	8849670		2014-09-30	DiCristo	
	222	8849696		2014-09-30	Pansari	
	223	8849791		2014-09-30	Hertschuh	
	224	8886536		2014-11-11	Freeman	
	225	8972243		2015-03-03	Nikko Strom	
	226	8983839		2015-03-17	Kennewick	
	227	9009046		2015-04-14	Stewart	
	228	9015049		2015-04-21	Baldwin	

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	230	9070366		2015-06-30	Lambert Mathias	
	231	9070367		2015-06-30	Bjorn Hoffmeister	
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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

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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)	2019-05-20
Name/Print	Mark A. Patrick	Registration Number	72,958

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	121	20070050279		2007-03-01	Qingfeng Huang	
	122	20070055525		2007-03-08	Kennewick	
	123	20070060114		2007-03-15	RAMER JOREY	
	124	20070061067		2007-03-15	Zeinstra	
	125	20070061735		2007-03-15	Hoffberg	
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	128	20070078708		2007-04-05	Yu	
	129	20070078709		2007-04-05	Rajaram	
	130	20070078814		2007-04-05	Flowers	
	131	20070094003		2007-04-26	Huang	
	132	20070100797		2007-05-03	Christopher Thun	
	133	20070106499		2007-05-10	DAHLGREN KATHLEEN	
	134	20070112555		2007-05-17	Lavi	
	135	20070112630		2007-05-17	Lau	
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	139	20070146833		2007-06-28	Satomi	
	140	20070162296		2007-07-12	Altberg	
	141	20070174258		2007-07-26	Jones	
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	144	20070186165		2007-08-09	Maislos	
	145	20070192309		2007-08-16	Fischer	
	146	20070198267		2007-08-23	Jones	
	147	20070203699		2007-08-30	Hisayuki Nagashima	
	148	20070203736		2007-08-30	Ashton	

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	150	20070214182		2007-09-13	Rosenberg	
	151	20070250901		2007-10-25	McIntire	
	152	20070265850		2007-11-15	Kennewick	
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	155	20070294615		2007-12-20	Saleel Sathe	
	156	20070299824		2007-12-27	Pan	
	157	20080014908		2008-01-17	Abraham Vasant	
	158	20080034032		2008-02-07	Healey	
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	161	20080065386		2008-03-13	Cross	
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	164	20080086455		2008-04-10	Adrienne C. Meisels	
	165	20080091406		2008-04-17	Baldwin	
	166	20080103761		2008-05-01	Printz	
	167	20080103781		2008-05-01	Wasson	
	168	20080104071		2008-05-01	Pragada	
	169	20080109285		2008-05-08	Reuther	
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	172	20080126284		2008-05-29	FORBES SCOTT C	
	173	20080133215		2008-06-05	Sarukkai	
	174	20080140385		2008-06-12	Mahajan	
	175	20080147396		2008-06-19	Wang	
	176	20080147410		2008-06-19	Odinak	
	177	20080147637		2008-06-19	Xin Li	
	178	20080154604		2008-06-26	Sathish	
	179	20080162471		2008-07-03	Bernard	
	180	20080177530		2008-07-24	Cross	
	181	20080184164		2008-07-31	Giuseppe Di Fabbrizio	

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	189	20080270224		2008-10-30	Eric A. Portman	
	190	20080294437		2008-11-27	Nakano	
	191	20080294994		2008-11-27	Kruger	
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	197	20090024476		2009-01-22	Baar	
	198	20090030686		2009-01-29	WENG FULIANG	
	199	20090052635		2009-02-26	Jones	
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	209	20090164216		2009-06-25	Rathinavelu Chengalvarayan	
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	211	20090171912		2009-07-02	NASH MICHAEL PATRICK	
	212	20090197582		2009-08-06	Robert C. Lewis	
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	219	20090271194		2009-10-29	Davis	
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	228	20090319517		2009-12-24	Ramananthan V. Guha	
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	230	20100023331		2010-01-28	DUTA NICOLAE	
	231	20100029261		2010-02-04	Mikkelsen	
	232	20100036967		2010-02-11	Caine	
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	240	20100145700		2010-06-10	Kennewick	
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	243	20100204986		2010-08-12	Kennewick	
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	250	20100312566		2010-12-09	Odinak	
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	252	20100331064		2010-12-30	Michelstein	
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	260	20110231182		2011-09-22	Weider	
	261	20110231188		2011-09-22	Kennewick	
	262	20110238409		2011-09-29	Jean-Marie Henri Daniel Larcheveque	
	263	20110307167		2011-12-15	Taschereau	
	264	20120022857		2012-01-26	Baldwin	
	265	20120041753		2012-02-16	Marc Dymetman	
	266	20120046935		2012-02-23	Nagao	
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	271	20120150636		2012-06-14	Freeman	
	272	20120239498		2012-09-20	Ramer	
	273	20120240060		2012-09-20	Pennington	
	274	20120265528		2012-10-18	Thomas Robert Gruber	
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	277	20130054228		2013-02-28	Baldwin	
	278	20130060625		2013-03-07	Davis	
	279	20130080177		2013-03-28	Chen	
	280	20130211710		2013-08-15	Kennewick	

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	282	20130254314		2013-09-26	Chow	
	283	20130297293		2013-11-07	Cristo	
	284	20130304473		2013-11-14	Baldwin	
	285	20130311324		2013-11-21	Stoll	
	286	20130332454		2013-12-12	Gunther Stuhec	
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	293	20140156278		2014-06-05	Kennewick	
	294	20140195238		2014-07-10	Makoto Terao	
	295	20140236575		2014-08-21	Tur	
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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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☐ 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)	2019-05-20
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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	3	20140365222		2014-12-11	Weider	
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	7	20150066479		2015-03-05	PASUPALAK SAM	
	8	20150066627		2015-03-05	Freeman	
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	11	20150142447		2015-05-21	Kennewick	
	12	20150170641		2015-06-18	Kennewick	
	13	20150193379		2015-07-09	Sarin S. Mehta	
	14	20150199339		2015-07-16	Shachar Mirkin	
	15	20150228276		2015-08-13	Baldwin	
	16	20150293917		2015-10-15	John P. Bufe	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	17	20150348544		2015-12-03	Baldwin	
	18	20150348551		2015-12-03	Thomas R. Gruber	
	19	20150364133		2015-12-17	Freeman	
	20	20160049152		2016-02-18	Kennewick	
	21	20160078482		2016-03-17	Kennewick	
	22	20160078491		2016-03-17	Kennewick	
	23	20160078504		2016-03-17	Kennewick	
	24	20160078773		2016-03-17	Carter	
	25	20160110347		2016-04-21	Kennewick	
	26	20160148610		2016-05-26	Kennewick	
	27	20160148612		2016-05-26	Guo	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	28	20160188292		2016-06-30	Carter	
	29	20160188573		2016-06-30	Tang	
	30	20160217785		2016-07-28	Robert A. Kennewick	
	31	20160335676		2016-11-17	Tom Freeman	

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FOREIGN PATENT DOCUMENTS Remove

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

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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[5]
	1		

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*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.

EFS Web 2.1.18

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] 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	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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)	2019-05-20
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 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:

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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.

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-298931

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($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1720**

Electronic Acknowledgement Receipt

EFS ID:	36061852
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Mark Andrew Patrick/Susan Trader
Filer Authorized By:	Mark Andrew Patrick
Attorney Docket Number:	62KC-298931
Receipt Date:	20-MAY-2019
Filing Date:	
Time Stamp:	17:19:31
Application Type:	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	052119INTEFSW00004460504561
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	Transmittal of New Application	62KC-298931_Utility_Transmittal.pdf	192391 3c831e60c36b1e918b185fec30f85cd520ba0390	no	2
Warnings:					
Information:					
2	Application Data Sheet	62KC-298931_ADS.pdf	1823241 c9a1e43b2bfdf65d5c3a4c01e1239e4a08f8c469	no	10
Warnings:					
Information:					
3		62KC-298931_Specification.pdf	268110 4eb32abcbcc7b9b96fe9654552af45c408ddf856	yes	38

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-298931_Drawings.pdf	90186 84727ec753e097a03fe6ac82c7c7faedb68e0910	no	3
Warnings:					
Information:					
5	Oath or Declaration filed	62KC-298931_Declaration.pdf	4333246 86f9dd751bd7bbbb8de8d55a19c854fdbf92fe61	no	5

Warnings:					
Information:					
6	Power of Attorney	62KC-298931_POA.pdf	1083804 872db09cf29d5e1c1ca3bfd276a6a5aa4a19c281	no	2
Warnings:					
Information:					
7	Transmittal Letter	62KC-298931_IDS_Transmittal-Letter.pdf	502733 8cf50568b97e59c65544f10df17f3b8c8d9544457	no	1
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form-A.pdf	1061875 151cd649042d2b53ce8b9f6fafb4b7195c210e16	no	36
Warnings:					
Information:					
9	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form-B.pdf	1058862 86b4f37f81c70ca1978c56562d1165021d2b834d	no	31
Warnings:					
Information:					
10	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form-C.pdf	1059118 1bf2f9972b9fc1a4f498ea4492c9dcf9774697ed	no	31
Warnings:					
Information:					
11	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form-D.pdf	1053690 aed1a8c26ca65753d93b4558b1e2cbe08e3db6a2	no	7
Warnings:					
Information:					
12	Fee Worksheet (SB06)	fee-info.pdf	35106 b97e90c75a7206afecd4e1d5614144b25d1db892	no	2
Warnings:					
Information:					

Total Files Size (in bytes):	12562362

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/417,178	05/20/2019	2658	1720	62KC-298931	20	2

CONFIRMATION NO. 8276

FILING RECEIPT

133759
Sheppard Mullin Richter & Hampton LLP
650 Town Center Drive, 4th Floor
Costa Mesa, CA 92626

OC000000108509218

Date Mailed: 05/30/2019

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 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: 05/28/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/417,178**

Projected Publication Date: 09/05/2019

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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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/417,178

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
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), (i), 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(i))	20 minus 20 =	*			OR	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
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1720

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	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.

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5898760		1999-04-27	SMETS RAYMOND J	
	2	8190436		2012-05-29	BANGALORE SRINIVAS	
	3	8972354		2015-03-03	TELANG NILESH	
	4	10089984		2018-10-02	KENNEWICK ROBERT A	

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	1	20010011336		2001-08-02	SITKA LARRY R	
	2	20050080821		2005-04-14	BREIL PETER D	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

	3	20050138168		2005-06-23	HOFFMAN PHILIP M	
	4	20170004588		2017-01-05	ISAACSON THOMAS M	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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).

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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)	2019-08-30
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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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.

Electronic Acknowledgement Receipt

EFS ID:	37033234
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Mark Andrew Patrick/Susan Trader
Filer Authorized By:	Mark Andrew Patrick
Attorney Docket Number:	62KC-298931
Receipt Date:	30-AUG-2019
Filing Date:	20-MAY-2019
Time Stamp:	14:25:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	62KC-298931_Transmittal-Letter.pdf	497941 5c5102909b5eb4b52ee7325a50b74208104aadb7	no	1

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form.pdf	1053301 2a9940ad93f31a315259014e358e92207b11b955	no	4
Warnings:					
Information:					
			Total Files Size (in bytes):	1551242	

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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	16/417,178
	Filing Date	05/20/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
Page 1 of 1	**Matter Number**	62KC-298931

GENERAL

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.

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.

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.

TIMING

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.

CERTIFICATION STATEMENT

No certification statement is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(b).

FEE

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

ADDITIONAL COMMENTS

SIGNATURE

Signature	/ Mark A. Patrick /	**Date**	2019-08-30
Name	Mark A. Patrick	**Registration Number**	72,958

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931

CONFIRMATION NO. 8276

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

PUBLICATION NOTICE

OC00000011089725 6

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

Publication No.US-2019-0272823-A1
Publication Date:09/05/2019

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. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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

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PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
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	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6076057		2000-06-13	NARAYANAN SHRIKANTH SAMBASIVAN	

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	1	101236635A	CN		2008-08-06	IBM		X

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	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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Examiner Signature		Date Considered	

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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.

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Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-11-25
Name/Print	Mark A. Patrick	Registration Number	72,958

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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.

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

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

[21] 申请号 200810008949.0

[43] 公开日 2008 年 8 月 6 日

[11] 公开号 CN 101236635A

[22] 申请日 2008.1.31
[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
地址 美国纽约
[72] 发明人 S·马塔伊 郝 飚

[74] 专利代理机构 北京市中咨律师事务所
代理人 于 静 杨晓光

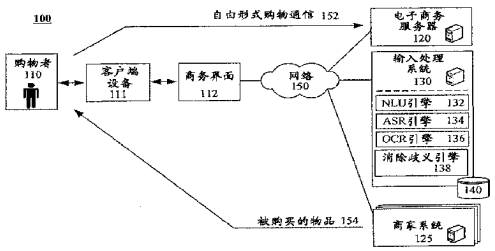
权利要求书 4 页 说明书 13 页 附图 4 页

[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。在一个实施例中，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 WEBSPHERE 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，WEBSHPERE 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库 140 中的数据、规则和/或偏好来解决歧义。例如，数据存储库 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库 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 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 WEBSPHERE 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）的每个可以是被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 用作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。

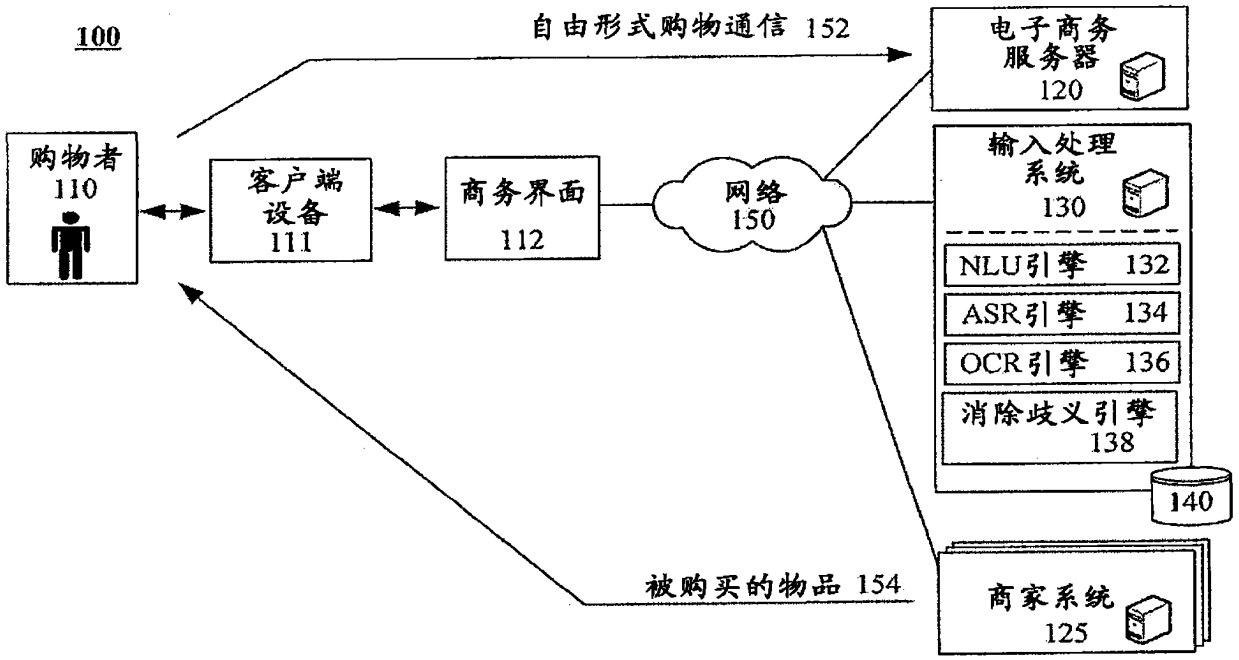

100
自由形式购物通信 152
电子商务服务器 120
购物者 110
客户端设备 111
商务界面 112
网络 150
输入处理系统 130
NLU引擎 132
ASR引擎 134
OCR引擎 136
消除歧义引擎 138
140
被购买的物品 154
商家系统 125

图 1

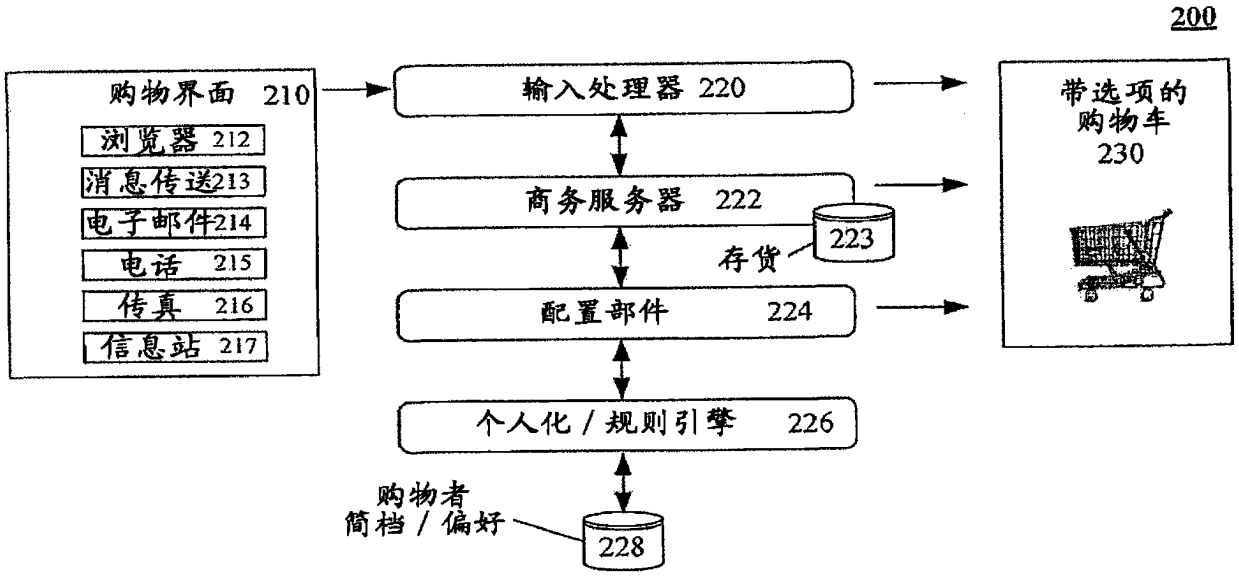

200
购物界面 210
浏览器 212
消息传送213
电子邮件214
电话 215
传真 216
信息站 217
输入处理器 220
商务服务器 222
223
存货
配置部件 224
个人化 / 规则引擎 226
购物者简档 / 偏好
228
带选项的购物车 230

图 2

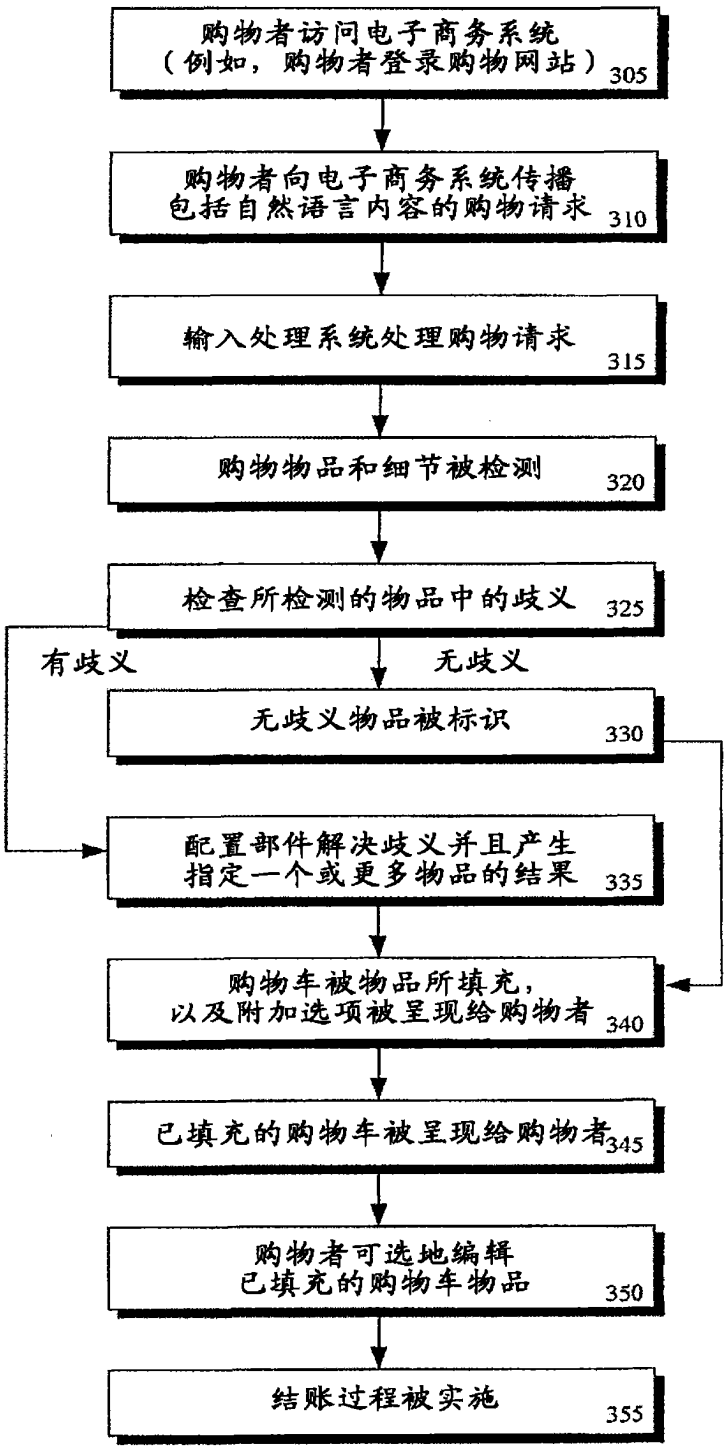

300
购物者访问电子商务系统
（例如，购物者登录购物网站）
305
购物者向电子商务系统传播
包括自然语言内容的购物请求
310
输入处理系统处理购物请求
315
购物物品和细节被检测
320
检查所检测的物品中的歧义
325
有歧义
无歧义
无歧义物品被标识
330
配置部件解决歧义并且产生
指定一个或更多物品的结果
335
购物车被物品所填充，
以及附加选项被呈现给购物者
340
已填充的购物车被呈现给购物者
345
购物者可选地编辑
已填充的购物车物品
350
结账过程被实施
355

图 3

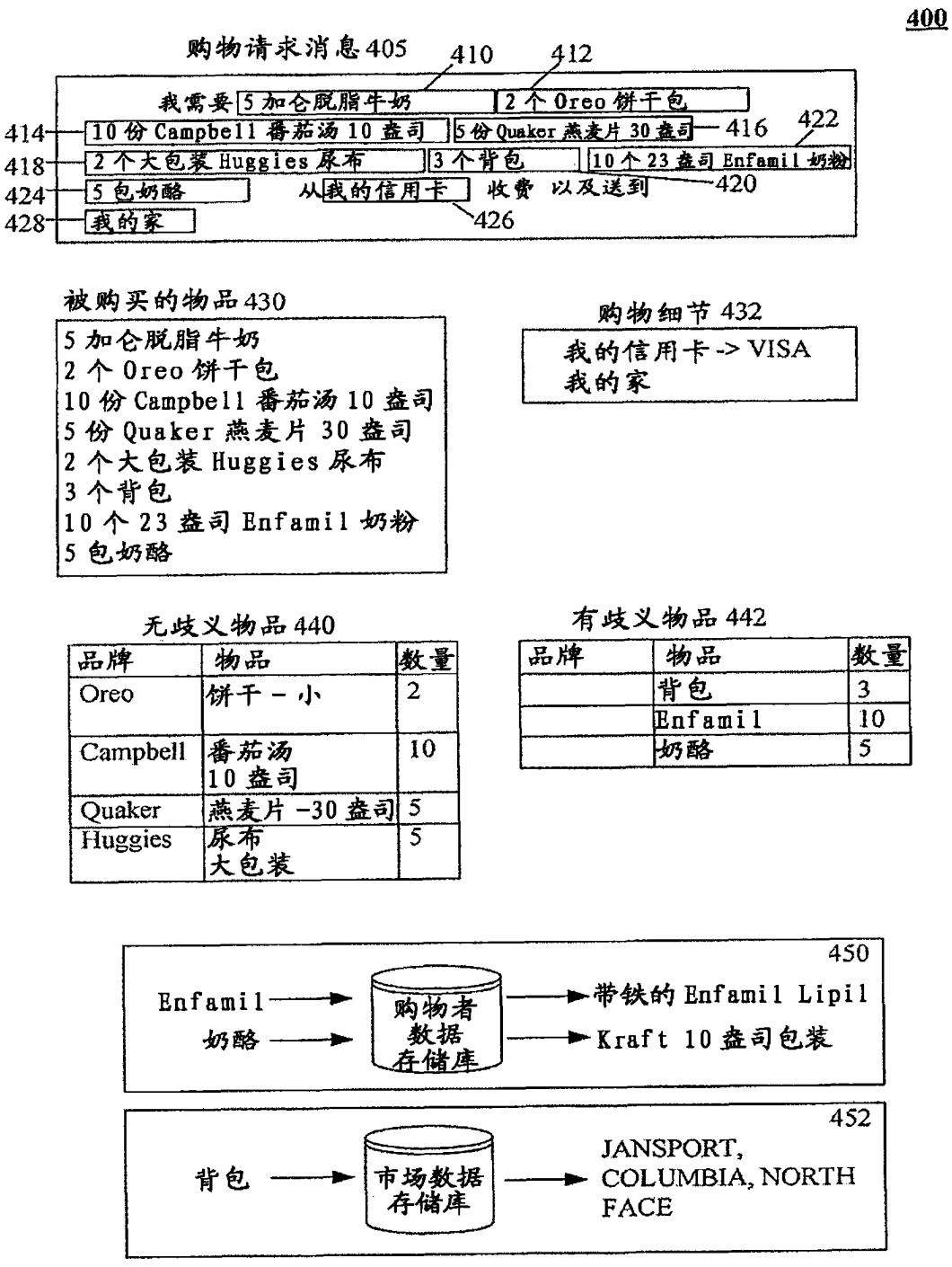

400
购物请求消息405
410
412
我需要
5加仑脱脂牛奶
2个Oreo饼干包
414
10份Campbell番茄汤10盎司
5份Quaker燕麦片30盎司
416
422
418
2个大包装Huggies尿布
3个背包
10个23盎司Enfamil奶粉
424
5包奶酪
从
我的信用卡
收费 以及送到
420
428
我的家
426
被购买的物品430
5加仑脱脂牛奶
2个Oreo饼干包
10份Campbell番茄汤10盎司
5份Quaker燕麦片30盎司
2个大包装Huggies尿布
3个背包
10个23盎司Enfamil奶粉
5包奶酪
购物细节432
我的信用卡 -> VISA
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
450
Enfamil
奶酪
购物者数据存储库
带铁的Enfamil Lipil
Kraft 10盎司包装
452
背包
市场数据存储库
JANSPORT, COLUMBIA, NORTH FACE

图 4

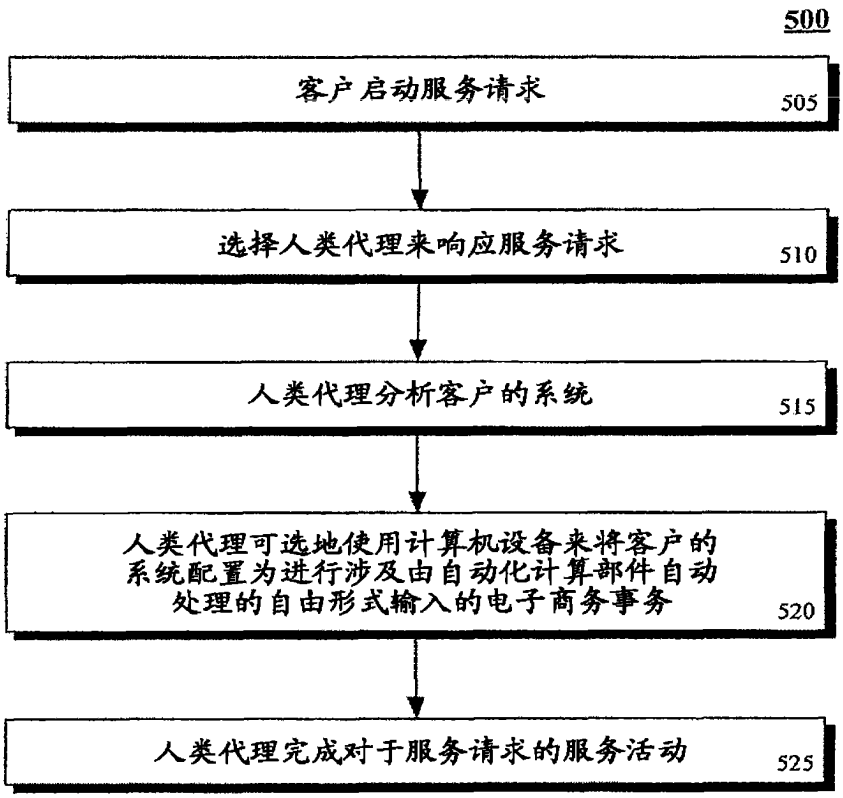

500
客户启动服务请求
505
选择人类代理来响应服务请求
510
人类代理分析客户的系统
515
人类代理可选地使用计算机设备来将客户的系统配置为进行涉及由自动化计算部件自动处理的自由形式输入的电子商务事务
520
人类代理完成对于服务请求的服务活动
525

图 5

Electronic Acknowledgement Receipt

EFS ID:	37842636
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Mark Andrew Patrick/Susan Trader
Filer Authorized By:	Mark Andrew Patrick
Attorney Docket Number:	62KC-298931
Receipt Date:	25-NOV-2019
Filing Date:	20-MAY-2019
Time Stamp:	11:56:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	62KC-298931_Transmittal-Letter.pdf	503582 91ee2b868bfe2ec70e1ef4a7bb1b475fbdba0156	no	1

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form.pdf	1053151 20c26425df74fcfc0e43a10238e385a30989b466	no	4
Warnings:					
Information:					
3	Other Reference-Patent/App/Search documents	62KC-298931_Other_CNOA_09-02-19.pdf	2996320 069c92ec27c17c118926ab83456208b4db2d5fb8	no	14
Warnings:					
Information:					
4	Foreign Reference	62KC-298931-Foreign-001.pdf	1709229 5fed38b23d88c12dd0917c678b0dd325226c8a2b	no	23
Warnings:					
Information:					
		Total Files Size (in bytes):	6262282		

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	16/417,178
	Filing Date	05/20/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
Page 1 of 1	**Matter Number**	62KC-298931

GENERAL

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.

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.

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.

TIMING

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.

CERTIFICATION STATEMENT

No certification statement is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(b).

FEE

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

ADDITIONAL COMMENTS

The foreign 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:

X: The document that when taken alone, prejudices the novelty of the inventiveness
Y: The document that when combined with other document(s) of Y type cited in this report, prejudices the inventiveness.
A: The background art document.

SIGNATURE

Signature	/ Mark A. Patrick /	**Date**	11/25/2019
Name	Mark A. Patrick	**Registration Number**	72,958

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

133759 7590 12/18/2019

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

EXAMINER	
YEN, ERIC L	

ART UNIT	PAPER NUMBER
2658	

NOTIFICATION DATE	DELIVERY MODE
12/18/2019	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

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/417,178	Applicant(s) BALDWIN et al.	
	Examiner ERIC YEN	Art Unit 2658	AIA (FITF) Status No

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

Period for Reply

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

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

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

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

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

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

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

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

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

Application Papers

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

11)☑ The drawing(s) filed on 5/20/19 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

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

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Claim Objections

2. Claims 1, 2, 5-6, 11, 12, 15-16, are objected to because of the following informalities:

Claims 1 and 11, in the "identify[ing] a manner..." and "generate/generating a response..." limitation, recite "the first natural language utterance" which lack antecedent basis (the "a natural language utterance" in the "receiving/receive..." step was never characterized as "first").

Claims 2, 5-6, 12, 15-16, similarly recite "the first natural language utterance" which lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of 35 U.S.C. 112(b):
> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 17 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claims 7 and 17 recite "the first context for the natural language utterance" which lacks antecedent basis.

"the natural language utterance" in the 2nd to last line of claims 7 and 17 is also ambiguous (can refer to the "natural language utterance" [no "first"] in claims 1 and 11, "the first natural language utterance" in claims 1 and 11, and any one of "one or more natural language utterances received during a predetermined time period" in claims 5 and 15 and any one of "one or more natural language utterances received prior to the predetermined time period" in claims 6 and 16)

Claim Rejections - 35 USC § 103

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

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

4. Claims 1,2,3,4,8,9,10,11,12,13,14,18,19,20 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kennewick et al. (US 2004/0044516), hereafter Kennewick, in view of Gong (US 2003/0167167).

As per Claims 1 and 11, Kennewick suggests (along with its system equivalent) **a computer-implemented method of facilitating natural language system responses, 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** ("presenting results in a natural manner", paragraph 3; "current systems are generally unable to provide… for users to make natural language speech queries and receive natural language sounding responses", paragraph 6; "overcome these and other drawbacks", paragraph 7; "system comprises a speech unit interface device that receives spoken natural language queries, commands and/or other utterances from a user… and a computer device or system that… processes the input… system may further generate a natural language speech response in response to the user and/or generate a natural language speech message without any prompting from a user such as an alert message", paragraph 10; "speech unit may be incorporated into the computer device, or may be a separate structure", paragraph 11; "computer device or system may comprise a stand alone or networked PC... or other computer device or system... software that is installed onto the computer… text to speech", paragraph 12; "return results of questions as responses to users… creates a response string, which is sent to the text to speech engine… output by the speaker", paragraph 89; Figure 1; "main unit… speech unit", paragraph 84; "speech unit… microphone", paragraph 86;

Paragraph 10, in particular, describes where a "system" [particularly a main unit component as described in paragraph 89 and Figure 1] generates "natural language speech responses", such that the "natural language speech responses" can be

interpreted as "natural language system responses" [since they are generated by a system].

Paragraph 10 further describes one embodiment where the system "comprises… a computer device" [i.e. "a computer system" in claim 1 and a "system" in claim 11] and paragraph 12 describes one embodiment where the computer device can be a PC [i.e. personal computer] and where various functions are implemented via software, including a text to speech engine which, as described in paragraph 89, is used to generate response audio that is output to the user [obviously the "natural language system responses" in paragraph 10]. Kennewick, therefore, at least suggests that the response generation and other functions of Kennewick's "computer device" is implemented by the claimed generic computer components ["one of more physical processors programmed with one or more computer program instructions which, when executed, configure the one or more physical processors to…" in claim 11 and "implemented by a computer system that includes one or more physical processors executing one or more computer program instructions which, when executed, perform…" in claim 1].

The computer device and the method it implements can be interpreted as a system/method that "facilitat[es] natural language system responses" because, as described in paragraphs 6-7, "current systems" [obviously prior art systems] cannot provide the natural language responses described in paragraph 10, such that the system/functions described in paragraph 10 "facilitate"/make-it-easier-to produce responses that are "natural sounding"/"natural language responses" [easier relative to prior art systems that are "generally unable" to do so, as described in paragraph 6].)

the method comprising: receiving, by the computer system, a user input comprising a natural language utterance ("speech unit... receives spoken natural language queries, commands and/or other utterances from a user… computer device or system that receives input from the speech unit", paragraph 10; "speech unit… incorporated into the computer device or system", paragraph 11; "computer device or system… stand alone or networked PC", paragraph 12; "system… may include a main unit… and a speech unit. Alternatively... may only comprise of the main unit... speech unit... completely separate", paragraph 84; "speech unit… includes one or more microphones… speech received at the microphone… transmits the coded speech to the main unit", paragraph 86; "utterance… user asks 'what about flight one hundred and twenty too?'", paragraph 155;

"spoken natural language queries" [paragraph 10] are at least obviously "uttered" by a user, such that they can be interpreted as "natural language utterances" that are also "user inputs". See also paragraph 155 which provides an example of a natural language utterance question.)

recognizing, by the computer system, one or more words or phrases from the natural language utterance, and identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance ("user asks 'what about flight one hundred and twenty too?'…parser and domain agent use flight information... and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, and the like", paragraph 155; "speech unit... receives spoken natural language queries,

commands and/or other utterances from a user… computer device or system that receives input from the speech unit", paragraph 10; "speech unit… incorporated into the computer device or system", paragraph 11; "computer device or system… stand alone or networked PC", paragraph 12; "system… may include a main unit… and a speech unit. Alternatively... may only comprise of the main unit... speech unit... completely separate", paragraph 84; "speech unit… includes one or more microphones… speech received at the microphone… transmits the coded speech to the main unit", paragraph 86; "speech unit… microphone", paragraph 139; "speech received by the… microphone… sent to the speech… coder… transmission of the coded speech to the speech recognition engine", paragraph 142; "output of the speech coder… fed to the speech recognition engine… recognizes words and phrases… passes these to the parser... for interpretation", paragraph 147; Figure 1; "Once the words and phrases have been recognized by the speech recognition engine… parser… determines a context for an utterance by applying… user profile… dialog history", paragraph 152; "parser... determine the most likely context or domain for a user's question and/or command... number of factors including, the user profile… previous context", paragraph 153;

Paragraph 142 describes where input speech received by a microphone is sent to a speech recognition engine, paragraphs 147 and 152 describe where words and phrases are recognized by the speech recognition engine. Paragraph 155 further describes an embodiment of a user's speech input which is a question containing words.

Paragraph 147 further describes where words and phrases recognized by the speech recognition engine are passed to a parser for interpretation and also determines

a user's identity. Paragraphs 152-153 further describes where tokens and user identification are passed to the parser once words and phrases have been recognized, and where the parser examines tokens determining a context for an utterance [paragraph 152], where a word "temperature" in a question implies a context value "weather" [paragraph 152] and determining a most likely context or domain for a user's question and/or command [i.e. a question and/or command particularly belonging to a user, paragraph 153]. Paragraph 155 further describes an embodiment of a user's speech input which is a question containing words.

These paragraphs at least suggest where a user's question/command is examined by a parser to determine context for the user's question/command, where it is obvious for context to be determined based on words/phrases in the user's question/command [similar to how the context weather is indicated by a word temperature in a question as described in paragraph 152] and it is further obvious for the words/phrases [that the context is obviously based on] to be the words/phrases recognized by the speech recognizer [since speech recognition is obviously how the system knows what words/phrases are in the user's question/command])

determining, by the computer system, an interpretation of the natural language utterance based on the identified context ("user asks 'what about flight one hundred and twenty too?'…parser and domain agent use flight information… and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, and the like", paragraph 155; "approximate meaning of the utterance can be determined… correct interpretation of the user utterance", paragraph 185; "commands and questions are

interpreted, queries formulated, responses created and results presented based on the users personal or user profile… history of their interactions with the system, and domains of interest… may be used by… the parser… past behavior or history, questions… can be manually entered by the user and/or can be learned by the system… based on user behavior", paragraph 114; "speech unit... receives spoken natural language queries, commands and/or other utterances from a user… computer device or system that receives input from the speech unit", paragraph 10; "speech unit… incorporated into the computer device or system", paragraph 11; "computer device or system… stand alone or networked PC", paragraph 12; "system… may include a main unit… and a speech unit. Alternatively... may only comprise of the main unit... speech unit... completely separate", paragraph 84; "speech unit… includes one or more microphones… speech received at the microphone… transmits the coded speech to the main unit", paragraph 86; "speech unit… microphone", paragraph 139; "speech received by the… microphone… sent to the speech… coder… transmission of the coded speech to the speech recognition engine", paragraph 142; "output of the speech coder… fed to the speech recognition engine… recognizes words and phrases… passes these to the parser... for interpretation", paragraph 147; Figure 1; "Once the words and phrases have been recognized by the speech recognition engine… parser… determines a context for an utterance by applying… user profile… dialog history", paragraph 152; "parser... determine the most likely context or domain for a user's question and/or command… number of factors including, the user profile… previous context", paragraph 153;

Paragraphs 152-153 describe where a parser determines context of a user's question/command [obviously based on words recognized by the speech recognition engine, as discussed above]. Paragraph 155 further describes where context is used by the parser to interpret a user's spoken question.

This at least suggests where the parser-determined most likely context [obviously determined based on the recognized words in the user's input question/command] is used to interpret the user's question/command [the user's "natural language utterance"] at least because the parser is described in paragraph 153 as the entity that determines the context, where the context is "for a user's question and/or command", and where the parser is described in paragraph 155 as the entity that uses context to determine the most plausible interpretation. Paragraph 185 also describes determining an approximate meaning of the utterance where an approximate meaning can be interpreted as an "interpretation", and also describes obtaining a correct interpretation of the user utterance, such that it is at least obvious that the interpretation is determined for the user's "natural language utterance".)

and generating, by the computer system, a response to the natural language utterance based on the interpretation ("receiving natural language speech-based queries and/or commands and generating a response... Once the utterance has been converted into an understandable format... approximate meaning of the utterance can be determined at 304... use of... user profiles... other data. Based on the approximate meaning, one or more correctly formatted queries and/or commands may be generated... in order to generate the desired response or action... correct interpretation of the user utterance and result in the desired response and/or action...

data may be useful for future inquiries and commands… response, if need be, may be generated and forwarded to the user… In the case of a query for retrieving data, the response would contain the requested information… response may be a confirmation that a specific action[s] has been executed… response may be in the form of a natural language format… response may relayed to the user… as an audio message and/or a visual message", paragraph 185; "agents… return results of questions as responses to users… generally present these results using the speech unit… agents... create a response string... send to the text to speech engine... required utterances... transmitted form the main unit... to the ... speech unit... output by the speaker", paragraph 89; "user asks 'what about flight one hundred and twenty too?'…parser and domain agent use flight information… and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, and the like", paragraph 155; Figure 1; "commands and questions are interpreted, queries formulated, responses created and results presented based on the users personal or user profile… history of their interactions with the system, and domains of interest… may be used by… the parser… past behavior or history, questions… can be manually entered by the user and/or can be learned by the system… based on user behavior", paragraph 114; "speech unit... receives spoken natural language queries, commands and/or other utterances from a user… computer device or system that receives input from the speech unit", paragraph 10; "speech unit… incorporated into the computer device or system", paragraph 11; "computer device or system… stand alone or networked PC", paragraph 12; "system… may include a main unit… and a speech unit. Alternatively... may only comprise of the main unit... speech unit... completely

separate", paragraph 84; “speech unit… includes one or more microphones… speech received at the microphone… transmits the coded speech to the main unit”, paragraph 86; “speech unit… microphone”, paragraph 139; “speech received by the… microphone… sent to the speech… coder… transmission of the coded speech to the speech recognition engine”, paragraph 142; “output of the speech coder… fed to the speech recognition engine… recognizes words and phrases… passes these to the parser... for interpretation", paragraph 147; Figure 1; “Once the words and phrases have been recognized by the speech recognition engine… parser… determines a context for an utterance by applying… user profile… dialog history”, paragraph 152; "parser... determine the most likely context or domain for a user's question and/or command... number of factors including, the user profile… previous context”, paragraph 153;

Kennewick suggests where the parser uses a determined most likely context to interpret a user’s utterance [as discussed above], and paragraph 185 describes where responses are generated based on a user's query and can be in a natural language form [e.g. requested information as a response to a query for retrieving data], and paragraph 89 describes where responses are generated using components of the main unit “computer system” [particularly agents and text to speech engine in Figure 1]

This at least suggests where Kennewick’s main unit "computer system"-in-claim-1/”system”-in-claim-11 “generat[es]… a response to the natural language utterance based on the interpretation” because it is obvious to give the user what he/she asked for such that it is obvious to base the response on what the system understood the user's request to mean [i.e. based on the interpretation of the utterance, as suggested by paragraph 185, where the interpretation of the utterance is obviously based on context

in the embodiment described in paragraph 155, where context is obviously determined for the user's question/command based on the recognized words in the user's question/command [as discussed above, see paragraphs 152-153]).

Kennewick does not, but Gong (in combination with Kennewick) suggests **where the natural language system responses are adapted based on a user's manner of speaking, identifying, by the computer system, a manner in which the first natural language utterance was spoken, and where the response is further generated based on the identified manner in which the first natural language utterance was spoken** ("determine the user's affective state... vocal analysis... pitch range, the volume, and the degree of breathiness in the speech... louder and faster speech compared to the user's basic pattern... happy... quieter and slower... than normal... indicate that a user is sad", paragraph 50; "determining the user's affective state... verbal content that reveals the user's emotions... great...disappeared", paragraph 51; "determines the appropriate verbal expression... for the intelligent social agent", paragraph 62; "generates an appropriate verbal expression for the intelligent social agent... includes the appropriate verbal content and appropriate emotional semantics based on the content... basic user profile information", paragraph 63; "processor may increase the number of words used in a verbal expression when the affective state of the user is happy or may decrease the number of words used or use words with fewer syllables if the affective state of the user is sad", paragraph 64; "send the verbal expression text... convert the verbal expression text to speech and output the speech", paragraph 65; "generates the appropriate affect for the verbal expression of the intelligent social agent... modifying the speech style from the baseline style of speech

for the intelligent social agent... speech rate, pitch average, pitch range, intensity, voice quality, pitch changes, and level of articulation... fear... speech rate is much faster, the pitch average is very much higher... table below", paragraph 69; Table just above paragraph 70; “create an intelligent social agent... appearance and voice are appealing and appropriate for the target users", paragraph 70; “user profile”, paragraph 71; “applies the appeal rule to the stored basic user profile... select a voice for the intelligent social agent... appealing to the user... match the user’s speech style characteristics... speech rate, pitch average, pitch range, and articulation... appropriate for the voice of the intelligent social agent”, paragraph 76;

Gong, like Kennewick, teaches using user profile information to determine how to communicate with a user [see Gong, paragraphs 62-65 and 76, and see Kennewick paragraph 114 which describes where personal profile data can be used for the text to speech engine and Kennewick paragraph 89 which describes where responses are based on user profile data, among other things].

Gong further teaches where a user's emotion/"affective state" can be determined from user speech by determining, for example, whether speech is faster/slower than the user's "basic pattern"/"normal" [paragraph 50, see the table above paragraph 70 for other parameters that obviously reflect different emotions when they are not "normal"] and also teaches where an agent voice [obviously used to communicate with the user] matches a user’s speech style, which includes “speech rate, pitch average, pitch range, and articulation” [paragraph 76].

These paragraphs suggest where Gong’s system has “knowledge” of a user’s “normal” speech rate, pitch average, pitch range, etc., based on received user speech.

A system obviously cannot determine that speech is slower/faster than normal without having information indicating what “normal”/”user’s basic pattern” is, and cannot match a user's speech style without knowing what the user’s “speech rate, pitch average, pitch range, and articulation" is. Since these features/parameters are qualities/characteristics of a user's speech, it is obvious to derive those features/parameters/”knowledge" from samples of the user's speech [“natural language utterances” which contain the exact information that is needed to determine those features/parameters]. Also, if a system can determine a user’s pitch average, pitch range, etc., for speech style matching purposes, the system can obviously compute those same parameters for identifying "affective state".

Gong [in combination with Kennewick] suggests a combination where Kennewick’s system further determines the user’s “affective state” [based on whether the user is speaking faster/slow than normal] and/or a user’s speech style [which includes “speech rate, pitch average, pitch range, and articulation”] from the user’s spoken question/command [“natural language utterance”] and then, when generating the response based on the interpretation of the user’s natural language utterance [as discussed above], adapts the response to be communicated in a particular manner [more words when happy or less words/syllables when sad, see Gong, paragraph 64, and/or having a particular speech rate, pitch average, pitch range, articulation that matches the user’s speech style] based on the affective state and/or speech style identified in the user’s spoken question/command [i.e. the “identified manner” in which the user’s question/command was spoken, where it is obvious to perform the affective state/speech style analysis on the user’s “current” speech input because, for example, it

would obviously be inappropriate to adapt the response to correspond to a happy affective state if the user's current speech input indicates that the user is not currently happy])

Therefore, it would have been obvious at the time of effective filing to modify Kennewick to include the suggestion of Gong (in combination with Kennewick) of where the natural language system responses are adapted based on a user's manner of speaking, identifying, by the computer system, a manner in which the first natural language utterance was spoken, and where the response is further generated based on the identified manner in which the first natural language utterance was spoken, in order to produces responses that are "appropriate for the user" mood (Gong, paragraph 64) and "appealing to the user" (Gong, paragraph 76) and that makes the system express emotion that it should express (Gong, paragraph 64).

As per Claims 2 and 12, Kennewick does not, but Gong (in combination with Kennewick) suggests **wherein the manner in which the first natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon** ("determine the user's affective state... vocal analysis... pitch range, the volume, and the degree of breathiness in the speech... louder and faster speech compared to the user's basic pattern... happy... quieter and slower... than normal... indicate that a user is sad", paragraph 50; "determining the user's affective state... verbal content that reveals the user's emotions... great...disappeared", paragraph 51; "determines the appropriate verbal expression... for the intelligent social agent", paragraph 62; "generates an appropriate verbal

expression for the intelligent social agent… includes the appropriate verbal content and appropriate emotional semantics based on the content… basic user profile information", paragraph 63; "processor may increase the number of words used in a verbal expression when the affective state of the user is happy or may decrease the number of words used or use words with fewer syllables if the affective state of the user is sad", paragraph 64; "send the verbal expression text… convert the verbal expression text to speech and output the speech", paragraph 65; "generates the appropriate affect for the verbal expression of the intelligent social agent… modifying the speech style from the baseline style of speech for the intelligent social agent... speech rate, pitch average, pitch range, intensity, voice quality, pitch changes, and level of articulation… fear… speech rate is much faster, the pitch average is very much higher... table below", paragraph 69; Table just above paragraph 60; "create an intelligent social agent... appearance and voice are appealing and appropriate for the target users", paragraph 70; "user profile", paragraph 71; "applies the appeal rule to the stored basic user profile… select a voice for the intelligent social agent… appealing to the user… match the user's speech style characteristics… speech rate, pitch average, pitch range, and articulation… appropriate for the voice of the intelligent social agent", paragraph 76;

The combination is as discussed in the rejection of claims 1 and 11.

Determining that a user is happy/sad based on determining that the first natural language utterance is spoken faster/slower than normal can be interpreted as determining that the first natural language utterance is spoken with a faster/slower-than-normal "pace" or "timing" "manner", and determining that the first natural language utterance is spoken with a particular pitch average/range can be interpreted as

speaking with a particular kind of “tone” “manner” [since pitch obviously defines how a user’s voice sounds])

Therefore, it would have been obvious at the time of effective filing to modify Kennewick to include the suggestion of Gong (in combination with Kennewick) of wherein the manner in which the first natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon, in order to produces responses that are “appropriate for the user” mood (Gong, paragraph 64) and "appealing to the user" (Gong, paragraph 76) and that makes the system express emotion that it should express (Gong, paragraph 64).

As per Claims 3 and 13, Kennewick suggests **wherein the response comprises a voice response** (“receiving natural language speech-based queries and/or commands and generating a response…Once the utterance has been converted into an understandable format… approximate meaning of the utterance can be determined at 304… use of… user profiles…other data. Based on the approximate meaning, one or more correctly formatted queries and/or commands may be generated… in order to generate the desired response or action… correct interpretation of the user utterance and result in the desired response and/or action… data may be useful for future inquiries and commands… response, if need be, may be generated and forwarded to the user… In the case of a query for retrieving data, the response would contain the requested information… response may be a confirmation that a specific action[s] has been executed… response may be in the form of a natural language format… response may relayed to the user… as an audio message and/or a visual message”, paragraph

185; “agents… return results of questions as responses to users… generally present these results using the speech unit… agents... create a response string... send to the text to speech engine... required utterances... transmitted form the main unit... to the ... speech unit... output by the speaker", paragraph 89;

Paragraph 185 describes where a response can be audio and paragraph 89 describes using a text to speech engine to generate a response [obviously a speech/voice response])

Kennewick does not, but Gong (in combination with Kennewick) suggests **wherein generating the voice response to the natural language utterance based on the identified manner comprises varying one or more of tone, pace, timing inflection, word use, and/or jargon of the voice response** (“determine the user’s affective state… vocal analysis… pitch range, the volume, and the degree of breathiness in the speech… louder and faster speech compared to the user’s basic pattern… happy… quieter and slower… than normal… indicate that a user is sad”, paragraph 50; “determining the user’s affective state… verbal content that reveals the user’s emotions… great…disappeared”, paragraph 51; “determines the appropriate verbal expression… for the intelligent social agent”, paragraph 62; “generates an appropriate verbal expression for the intelligent social agent… includes the appropriate verbal content and appropriate emotional semantics based on the content… basic user profile information”, paragraph 63; “processor may increase the number of words used in a verbal expression when the affective state of the user is happy or may decrease the number of words used or use words with fewer syllables if the affective state of the user is sad”, paragraph 64; “send the verbal expression text… convert the verbal expression

text to speech and output the speech", paragraph 65; "generates the appropriate affect for the verbal expression of the intelligent social agent... modifying the speech style from the baseline style of speech for the intelligent social agent... speech rate, pitch average, pitch range, intensity, voice quality, pitch changes, and level of articulation... fear... speech rate is much faster, the pitch average is very much higher... table below", paragraph 69; Table just above paragraph 60; "create an intelligent social agent... appearance and voice are appealing and appropriate for the target users", paragraph 70; "user profile", paragraph 71; "applies the appeal rule to the stored basic user profile... select a voice for the intelligent social agent... appealing to the user... match the user's speech style characteristics... speech rate, pitch average, pitch range, and articulation... appropriate for the voice of the intelligent social agent", paragraph 76;

The combination is as discussed in the rejection of claims 1 and 11.

Paragraphs 64-65 describe a verbal expression which is converted via text-to-speech and where speech is output [similar to how Kennewick uses text-to-speech to generate a response]. Paragraph 64 further teaches where the number of words used varies with the user's "affective state" [more words when happy, less when sad], and paragraph 76 describes selecting a voice for an agent and matching the user's speech style characteristics [speech rate, pitch average, pitch range, and articulation].

Gong [in combination with Kennewick] thus suggests where the voice response is "varied" to use more/less words corresponding to the determined "affective state" [varied relative to other times when the user's "affective state" is different] and/or "varied" to have the user's speech characteristics ["timing"/"pace"/speech rate, and pitch range/average obviously affects "tone"].

Additionally/alternatively, speech/voice obviously has varying tone/inflection/word use in order to generate a natural language response, where the natural language response obviously includes more than a single word [i.e. the words spoken and used to communicate the response to the user obviously include multiple words and obviously vary over time, and speech/voice obviously includes time-varying "tone" that makes the speech sound the way it does])

Therefore, it would have been obvious at the time of effective filing to modify Kennewick to include the suggestion of Gong (in combination with Kennewick) of wherein generating the voice response to the natural language utterance based on the identified manner comprises varying one or more of tone, pace, timing inflection, word use, and/or jargon of the voice response, in order to produces responses that are "appropriate for the user" mood (Gong, paragraph 64) and "appealing to the user" (Gong, paragraph 76) and that makes the system express emotion that it should express (Gong, paragraph 64).

As per Claims 4 and 14, Kennewick (in combination with Gong) suggests **obtaining, by the computer system, contextual signifiers and/or grammatical rules; and generating, by the computer system, the response to the natural language utterance based further on the obtained contextual signifiers and/or grammatical rules** ("parser… determines a context for an utterance by applying prior probabilities or fuzzy possibilities to keyword matching, user profile… dialog history… context of a question or command… example… question with the keywords… implies a context value of weather for the question", paragraph 152; "determine the most likely

context or domain for a user's question and/or command… number of factors including… user profile… previous context", paragraph 153; "parser and domain agent use… along with context to determine the most plausible interpretation among", paragraph 155; "receiving natural language speech-based queries and/or commands and generating a response…Once the utterance has been converted into an understandable format… approximate meaning of the utterance can be determined at 304… use of… user profiles…other data. Based on the approximate meaning, one or more correctly formatted queries and/or commands may be generated… in order to generate the desired response or action… correct interpretation of the user utterance and result in the desired response and/or action… data may be useful for future inquiries and commands… response, if need be, may be generated and forwarded to the user… In the case of a query for retrieving data, the response would contain the requested information… response may be a confirmation that a specific action[s] has been executed… response may be in the form of a natural language format… response may relayed to the user… as an audio message and/or a visual message", paragraph 185; "agents… return results of questions as responses to users… generally present these results using the speech unit… agents... create a response string... send to the text to speech engine... required utterances... transmitted form the main unit... to the ... speech unit... output by the speaker", paragraph 89; "speech received by the… microphone… sent to the speech… coder… transmission of the coded speech to the speech recognition engine", paragraph 142; "output of the speech coder… fed to the speech recognition engine… recognizes words and phrases… passes these to the parser... for interpretation", paragraph 147; "users personal or user profile... values...

information specific to the individual... history of their interactions with the system... domains of interest... personal profile data... used by the agents... and the parser... past behavior or history, questions... User profile data can be manually entered by the user and/or can be learned by the system… based on user behavior", paragraph 114; "Examples of information in a user profile includes, history of questions asked", paragraph 29;

As discussed in the rejection of claims 1 and 11, Kennewick [in combination with Gong] suggests generating a response based on a correct interpretation of the user's natural language input [paragraphs 147, 155 and 185] where the correct/most plausible interpretation is determined based on context [paragraph 155] and where context is obviously based on the words spoken by the user [paragraphs 142, 147, 152-153 and 155].

Paragraphs 152-153 further describes other entities obviously used to determine context [e.g. probabilities/possibilities, user profile, dialog history, in paragraph 152, and obviously domain agent's data content and previous context in paragraph 153]. These other entities that are obviously used to determine context can be interpreted as "contextual signifiers" [since they obviously indicate/"signify" what the context is determined to be]. Paragraphs 114 and 29 also describe examples of elements of a user profile [described in paragraph 152 as something used to determine context] which can be interpreted as "contextual signifiers" when used to determine context. It is obvious that all of those "contextual signifiers" were "obtained" [see paragraph 114 which describes where user profile data is manually entered and/or learned by the system], and since context is used to interpret the user's utterance and since the

response is obviously based on the interpretation of the user's utterance, the response is obviously indirectly based on the "contextual signifiers" when those "contextual signifiers" are used to determine context.

Additionally, paragraph 29 further describes where profile data may be used to interpret questions and present answers [which suggests that the profile "contextual signifiers" are also directly used to generate a response]

Paragraph 155 further suggests/renders-obvious where the system also has knowledge of English grammar rules needed to parse and understand the user's question which has multiple possible interpretations [the different interpretations in paragraph 155 obviously differ based on how the user's question is grammatically parsed/understood, and thus each interpretation can be interpreted as being generated by a respective "grammatical rule" that parses the user's question in a particular way], and the system's response obviously determined based on the interpretation which is obviously based on knowledge of English grammar rules)

As per Claims 8 and 18, Kennewick does not, but Gong (in combination with Kennewick) suggests **wherein generating the response to the natural language utterance further comprises: generating, by the computer system, the response based on a response format associated with the identified manner** ("determine the user's affective state... vocal analysis... pitch range, the volume, and the degree of breathiness in the speech... louder and faster speech compared to the user's basic pattern... happy... quieter and slower... than normal... indicate that a user is sad", paragraph 50; "determining the user's affective state... verbal content that reveals the

user's emotions… great…disappeared", paragraph 51; "determines the appropriate verbal expression… for the intelligent social agent", paragraph 62; "generates an appropriate verbal expression for the intelligent social agent… includes the appropriate verbal content and appropriate emotional semantics based on the content… basic user profile information", paragraph 63; "processor may increase the number of words used in a verbal expression when the affective state of the user is happy or may decrease the number of words used or use words with fewer syllables if the affective state of the user is sad", paragraph 64; "send the verbal expression text… convert the verbal expression text to speech and output the speech", paragraph 65; "generates the appropriate affect for the verbal expression of the intelligent social agent… modifying the speech style from the baseline style of speech for the intelligent social agent... speech rate, pitch average, pitch range, intensity, voice quality, pitch changes, and level of articulation… fear… speech rate is much faster, the pitch average is very much higher... table below", paragraph 69; Table just above paragraph 60; "create an intelligent social agent... appearance and voice are appealing and appropriate for the target users", paragraph 70; "user profile", paragraph 71; "applies the appeal rule to the stored basic user profile… select a voice for the intelligent social agent… appealing to the user… match the user's speech style characteristics… speech rate, pitch average, pitch range, and articulation… appropriate for the voice of the intelligent social agent", paragraph 76;

The combination is as discussed in the rejection of claims 1 and 11.

Paragraphs 64-65 describe a verbal expression which is converted via text-to-speech and where speech is output [similar to how Kennewick uses text-to-speech to generate a response]. Paragraph 64 further teaches where the number of words used

varies with the user's "affective state" [more words when happy, less when sad], and paragraph 76 describes selecting a voice for an agent and matching the user's speech style characteristics [speech rate, pitch average, pitch range, and articulation].

Gong [in combination with Kennewick] thus suggests where the voice response is generated based on a "response format" [e.g. a particular speech style matching the user's speech style or having a larger/smaller amount of words] depending on the user's affective state or speech style.)

Therefore, it would have been obvious at the time of effective filing to modify Kennewick to include the suggestion of Gong (in combination with Kennewick) of wherein generating the response to the natural language utterance further comprises: generating, by the computer system, the response based on a response format associated with the identified manner, in order to produces responses that are "appropriate for the user" mood (Gong, paragraph 64) and "appealing to the user" (Gong, paragraph 76) and that makes the system express emotion that it should express (Gong, paragraph 64).

As per Claims 9 and 19, Kennewick (in combination with Gong) suggests **wherein recognizing the one or more words or phrases from the natural language utterance comprises: providing, by the computer system, the natural language utterance as an input to a speech recognition engine; and obtaining, by the computer system, the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine** ("user asks 'what about flight one hundred and twenty too?'...parser and domain agent use flight

information... and network information along with context to determine the most plausible interpretation among; flight 100 and flight 20 also, flight 100 and flight 22, flight 122, and the like", paragraph 155; "speech unit... receives spoken natural language queries, commands and/or other utterances from a user... computer device or system that receives input from the speech unit", paragraph 10; "speech unit... incorporated into the computer device or system", paragraph 11; "computer device or system... stand alone or networked PC", paragraph 12; "system... may include a main unit... and a speech unit. Alternatively... may only comprise of the main unit... speech unit... completely separate", paragraph 84; "speech unit... includes one or more microphones... speech received at the microphone... transmits the coded speech to the main unit", paragraph 86; "speech unit... microphone", paragraph 139; "speech received by the... microphone... sent to the speech... coder... transmission of the coded speech to the speech recognition engine", paragraph 142; "output of the speech coder... fed to the speech recognition engine... recognizes words and phrases... passes these to the parser... for interpretation", paragraph 147; Figure 1; "Once the words and phrases have been recognized by the speech recognition engine... parser... determines a context for an utterance by applying... user profile... dialog history", paragraph 152; "parser... determine the most likely context or domain for a user's question and/or command... number of factors including, the user profile... previous context", paragraph 153;

Paragraph 142 describes where input speech received by a microphone is sent to a speech recognition engine, paragraphs 147 and 152 describe where words and phrases are recognized by the speech recognition engine. Paragraph 155 further

describes an embodiment of a user's speech input which is a question containing words.)

As per Claims 10 and 20, Kennewick suggests **causing, by the computer system, the response to the natural language utterance to be provided to the user** ("receiving natural language speech-based queries and/or commands and generating a response…Once the utterance has been converted into an understandable format… approximate meaning of the utterance can be determined at 304… use of… user profiles…other data. Based on the approximate meaning, one or more correctly formatted queries and/or commands may be generated… in order to generate the desired response or action… correct interpretation of the user utterance and result in the desired response and/or action… data may be useful for future inquiries and commands… response, if need be, may be generated and forwarded to the user… In the case of a query for retrieving data, the response would contain the requested information… response may be a confirmation that a specific action[s] has been executed… response may be in the form of a natural language format… response may relayed to the user… as an audio message and/or a visual message", paragraph 185; "agents… return results of questions as responses to users… generally present these results using the speech unit… agents... create a response string... send to the text to speech engine... required utterances... transmitted form the main unit... to the ... speech unit... output by the speaker", paragraph 89;

Paragraph 185 describes where a response can be audio and can be relayed/displayed to the user and paragraph 89 describes using a text to speech engine

to generate a response [obviously a speech/voice response] and outputting the voice response via a speaker [obviously to the user])

3. Claims 5, 15, is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kennewick, in view of Gong, as applied to Claims 1 and 11, above, and further in view of Perkins (US 7,072,888).

As per Claims 5 and 15, Kennewick suggests **accumulating, by the computer system, knowledge based on one or more natural language utterances, wherein the one or more natural language utterances are related to a single conversation between a user and the computer system** ("users personal or user profile... values... information specific to the individual... history of their interactions with the system... domains of interest... personal profile data... used by the agents... and the parser... past behavior or history, questions... User profile data can be manually entered by the user and/or can be learned by the system… based on user behavior", paragraph 114; "Examples of information in a user profile includes, history of questions asked", paragraph 29; Figure 1; "parser... determines a context for an utterance by applying…user profile… dialog history", paragraph 152; "parser… determine the most likely context or domain for a user's question and/or command", paragraph 153; "what about flight one hundred and twenty too?", paragraph 155; "speech unit... receives spoken natural language queries, commands and/or other utterances from a user… computer device or system that receives input from the speech unit… further generate a natural language speech response to the user", paragraph 10; "receiving natural

language speech-based queries and/or commands and generating a response… In the case of a query for retrieving data, the response would contain the requested information… response may relayed to the user", paragraph 185;

Paragraphs 152 and 153 describe where a parser determines a context for a question/command [obviously a "natural language utterance", see e.g. the example question in paragraph 155] based on "user profile" and "dialog history" [paragraph 152], where "user profile" and "dialog history" can be interpreted as "knowledge" which a context of an utterance is determined based on [relevant for the "determining... a first context..." limitation].

Paragraph 114 further describes where the user profile "knowledge" discussed in the previous paragraph can be manually entered by the user and/or can be learned by the system… based on user behavior, and paragraph 29 describes where user profile information can include a history of questions asked [obviously questions asked by the user since it is part of profile information that is obviously for a particular user]. Since the user profile is depicted in Figure 1 as part of the main unit "computer system"-in-claim-1/"system"-in-claim-11, this at least suggests where the "computer system"-in-claim-1/"system"-in-claim-11 "accumulat[es]... knowledge", because entering or learning different pieces of profile/history information/"knowledge", as described in paragraph 114, obviously causes the system to acquire/"accumulate" the information as it is entered or learned [since multiple pieces of information, especially learned user behavior and/or a history of questions asked, are obviously not entered instantaneously all at once]

The "history of questions asked" example of user profile information [paragraph 29] particularly reads on "knowledge based on one or more natural language utterances" because questions asked are obviously utterances spoken by the user [see e.g. paragraph 155] and are obviously accumulated over time since users obviously do not ask all possible questions at once. For the purposes of this rejection, one of the questions asked is interpreted as "one or more natural language utterances".

Paragraphs 10, 155 and 185 further suggests "wherein the one or more natural language utterances... are related to a single conversation between a user and the computer system" because paragraphs 10 and 185 describe a user providing a query and the system providing a response, including an example where a user provides a query for retrieving data and the system provides the requested information, and including an example where the system responds in natural language audio, and paragraph 155 describes a user asks a question [particularly for flight information]. A natural language exchange between the system and user including a user question and a system response can be interpreted as "a single conversation between a user and the computer system". It is therefore obvious for one of the questions in the history of questions asked [i.e. the "one or more natural language utterances"] to be asked as part of [and thus is "related to"] "a single conversation between a user and the computer system")

Kennewick does not, but Gong (in combination with Kennewick) suggests **wherein the manner in which the first natural language utterance was spoken is identified based on the knowledge** ("determine the user's affective state... vocal analysis... pitch range, the volume, and the degree of breathiness in the speech...

louder and faster speech compared to the user's basic pattern... happy... quieter and slower... than normal... indicate that a user is sad", paragraph 50; "determining the user's affective state... verbal content that reveals the user's emotions... great...disappeared", paragraph 51; "determines the appropriate verbal expression... for the intelligent social agent", paragraph 62; "generates an appropriate verbal expression for the intelligent social agent... includes the appropriate verbal content and appropriate emotional semantics based on the content... basic user profile information", paragraph 63; "processor may increase the number of words used in a verbal expression when the affective state of the user is happy or may decrease the number of words used or use words with fewer syllables if the affective state of the user is sad", paragraph 64; "send the verbal expression text... convert the verbal expression text to speech and output the speech", paragraph 65; "generates the appropriate affect for the verbal expression of the intelligent social agent... modifying the speech style from the baseline style of speech for the intelligent social agent... speech rate, pitch average, pitch range, intensity, voice quality, pitch changes, and level of articulation... fear... speech rate is much faster, the pitch average is very much higher... table below", paragraph 69; Table just above paragraph 60; "create an intelligent social agent... appearance and voice are appealing and appropriate for the target users", paragraph 70; "user profile", paragraph 71; "applies the appeal rule to the stored basic user profile... select a voice for the intelligent social agent... appealing to the user... match the user's speech style characteristics... speech rate, pitch average, pitch range, and articulation... appropriate for the voice of the intelligent social agent", paragraph 76;

Gong, like Kennewick, teaches using user profile information to determine how to communicate with a user [see Gong, paragraphs 62-65 and 76, and see Kennewick paragraph 114 which describes where personal profile data can be used for the text to speech engine and Kennewick paragraph 89 which describes where responses are based on user profile data, among other things].

Gong further teaches where a user's emotion/"affective state" can be determined from user speech by determining, for example, whether speech is faster/slower than the user's "basic pattern"/"normal" [paragraph 50, see the table above paragraph 70 for other parameters that obviously reflect different emotions when they are not "normal"] and also teaches where an agent voice [obviously used to communicate with the user] matches a user's speech style, which includes "speech rate, pitch average, pitch range, and articulation" [paragraph 76].

These paragraphs suggest where Gong's system has "knowledge" of a user's "normal" speech rate, pitch average, pitch range, etc., based on received user speech. A system obviously cannot determine that speech is slower/faster than normal without having information indicating what "normal"/"user's basic pattern" is, and cannot match a user's speech style without knowing what the user's "speech rate, pitch average, pitch range, and articulation" is. Since these features/parameters are qualities/characteristics of a user's speech, it is obvious to derive those features/parameters/"knowledge" from samples of the user's speech ["natural language utterances" which contain the exact information that is needed to determine those features/parameters]. Also, if a system can determine a user's pitch average, pitch range, etc., for speech style matching

purposes, the system can obviously compute those same parameters for identifying "affective state".

Gong [in combination with Kennewick] suggests a combination where the utterances used to generate/"accumulate" the "history of questions asked" [i.e. question utterances, one of which is "one or more natural language utterances"] are further analyzed to determine a user's "normal" speech speed/rate/pace [for the affective state recognition] and also to determine a user's "normal" speech rate, pitch average, pitch range, articulation [so that the system can determine affective state based on the other parameters in the table above paragraph 70], such that, in the combination, the "knowledge" [knowledge based on question utterances asked] that is "accumulated based on one or more natural language utterances" [i.e. accumulated by-analyzing/based-on the question utterances] includes a history of questions asked [recognized question words of the question-utterances, as per Kennewick] and also includes a user's "normal" speech speed/rate, pitch range, pitch average, etc. [calculated from the question-utterances], where the "knowledge" [particularly the "normal" speech speed/rate, pitch average, pitch range, articulation components] is used to determine the speech style and/or faster/slower-than-normal quality of the user's input speech [i.e. "the manner in which the first natural language utterance was spoken"])

Therefore, it would have been obvious at the time of effective filing to modify Kennewick to include the suggestion of Gong (in combination with Kennewick) of wherein the manner in which the first natural language utterance was spoken is identified based on the knowledge, in order to produces responses that are "appropriate

for the user" mood (Gong, paragraph 64) and "appealing to the user" (Gong, paragraph 76) and that makes the system express emotion that it should express (Gong, paragraph 64).

Kennewick, in view of Gong, do not, but Perkins (in combination with Kennewick and Gong) suggests **where the knowledge is short-term knowledge and wherein the short-term knowledge is accumulated based on one or more natural language utterances received during a predetermined time period** ("recording user searches... Table of Searches... initially empty when the user profile is created... When a user submits a query to the search engine... adds a new record... updates an existing record... processes the user query and returns to the user a list of resources that match the query", col. 7, lines 21-30; "Query... text of the query...Date submitted... date on which the query was last submitted", col. 7, lines 35-45; "If the query does not exist in the Table of Queries... add a new query entry to the Table of Queries... Date Last Submitted... updated", col. 8, lines 39-56; "Query... text of the query submitted by the user... date on which the query was last submitted", col. 9, lines 42-52; "Date Last Submitted... used by the search engine to clean up old or obsolete records that are no longer needed... removing queries not used in the previous n days (e.g. the previous thirty days)", col. 9, lines 59-63; "provide users the ability to query the database... locate content that is relevant to the user's query... query may be in several different forms, but most common are words, phrases, or questions", col. 1, line 62 – col. 2, line 16;

Kennewick describes, in paragraphs 29, 114, and Figure 1, where Kennewick's main unit "computer system"-in-claim-1/"system"-in-claim-11 includes user profile data that can be used, among other things, to interpret questions and that includes, among

other things, a history of questions asked. Paragraph 185 of Kennewick further describes receiving “natural language speech-based queries and/or commands” where, “In the case of a query for retrieving data, the response would contain the requested information”. The "history of questions asked" in the user profile information thus can be interpreted as a "history of queries".

Perkins, like Kennewick, teaches recording query information in user profile data [see cited passages at the start of this section based on Perkins, in combination with Kennewick] which can also be interpreted as recording a "history of queries" [like Kennewick], and Perkins also teaches where query information that is older than or not used during the past n days [30 days in the particular example of col. 9, lines 59-63] are deleted. Perkins also describes, in col. 1, line 62 – col. 2, line 16, where queries can be questions [like Kennewick].

Perkins [in combination with Kennewick and Gong] suggest where Kennewick’s “history of questions asked” and the user’s speech rate/style in the user profile [in the combination of Kennewick and Gong, discussed above] are only based on questions that were asked in the past n days, such that the history of questions asked and the user’s speech rate/style "knowledge" is "short-term" knowledge [i.e. knowledge acquired during a "short term" that expires once it is "older" than that "short term"], and such that the "short-term knowledge” is accumulated “based on one or more natural language utterances received during a predetermined time period” [i.e. the history of questions asked and user’s speech rate/style is accumulated based on natural language utterance queries/questions that were received/asked during the predetermined n day time period].).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of effective filing to perform a simple substitution of one type of history data with another because the prior art teaches the claimed invention except for the substitution of history data that is not based on queries received during a predetermined time period with history data that is based on queries received during a predetermined time period. Perkins teaches that history data that is based on queries received during a predetermined time period was known in the art. One of ordinary skill in the art could have substituted one type of history data with another to obtain the predictable results of a natural language query and response system that uses user profile information (as per Kennewick) where the user profile information includes information pertaining to the user's normal speech rate and/or the user's speech style (as per Gong) where the user profile information is based on queries that were received during the past n days (as per Perkins).

Allowable Subject Matter

4. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or suggest the combination of all limitations in claims 1, 5, and 6 together, and in claims 11, 15, and 16 together.

Perkins, as discussed above, teaches where "short-term" knowledge includes queries within the last n days, but describes where data older than n days is obsolete and is deleted (therefore not obvious to combine with an additional reference that teaches long-term data based on utterances received more than n days ago).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file

provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

6. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 7-9 and 17-19 of U.S. Patent No. 9,015,049, hereafter Parent Patent 1 (and similarly claims 10-11 of US Patent 10,297,249, and claims 1 and 10 of US Patent 8,515,765, and claims 1 and 25 of US Patent 8,073,681) in view of Kennewick and Gao.

As per Claims 1 and 11, Claims 7 and 17 of Parent Patent 1 (interpreted as incorporating all limitations of independent claims 1 and 11) teach all limitations of claims 1 and 11 (preamble of claims 1 and 11 of Parent Patent 1 recite system/method for facilitating conversation-based responses, first limitation in the body recites receiving a natural language utterance, 3rd limitation in the body recites identifying context of the utterance, last 2 limitations recite generating an interpretation based on context and

generating a response based on the interpretation, claims 7 and 17 of Parent Patent 1 teach identifying a manner in which the natural language utterance was spoken and further generating the response based on both the identified manner and the interpretation of the natural language utterance [such that natural language system responses are adapted based on a user's manner of speaking])

except for **recognizing, by the computer system, one or more words or phrases from the natural language utterance** and **where the context for the natural language utterance is identified based on the one or more words or phrases recognized from the natural language utterance**.

Kennewick suggests **recognizing, by the computer system, one or more words or phrases from the natural language utterance** and **where the context for the natural language utterance is identified based on the one or more words or phrases recognized from the natural language utterance** (Paragraphs 142 and 147 teach where speech is provided to a speech recognition engine and recognizing words and phrases and passing them to the parser, paragraphs 152-153 describe where the parser determines context for an utterance/question/command and where a word in the question/command implies a context value [suggesting that context is determined based on words/phrases in the question])

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to perform a simple substitution of one type of context determination with another because the claims of Parent Patent 1 teach the claimed invention except for the substitution of context determination which does not necessarily determine context based on recognized words/phrases with context determination which does.

Kennewick teaches that context determination which determines context based on recognized words/phrases was known in the art. One of ordinary skill in the art could have substituted one type of context determination with another to obtain the predictable results of a system that receives a natural language utterance, determines context for that utterance, determines an interpretation based on the context, and generates a response based on the interpretation (as per Parent Patent 1) where context is determined based on words/phrases recognized in the natural language utterance via a speech recognizer (as per Kennewick).

Conclusion

7. 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 12/12/19

/ERIC YEN/
Primary Examiner, Art Unit 2658

Notice of References Cited	Application/Control No. 16/417,178	Applicant(s)/Patent Under Reexamination BALDWIN et al.	
	Examiner ERIC YEN	Art Unit 2658	Page 1 of 1

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	Art Unit
	ERIC YEN	2658

CPC - Searched*		
Symbol	Date	Examiner
G10L 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	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 14/691445	12/12/2019	EY
EAST Search (attached)	12/12/2019	EY

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G10L	15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	EY

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	12/13/2019								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
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	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								

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Application No: 16/417,178

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

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/20/2019	704	2658	62KC-298931
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CONTINUING DATA

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

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FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

05/28/2019

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	TBD
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

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	96	7447635		2008-11-04	Konopka	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	97	7451088		2008-11-11	Ehlen	
	98	7454368		2008-11-18	Stillman	
	99	7454608		2008-11-18	Gopalakrishnan	
	100	7461059		2008-12-02	Richardson	
	101	7472020		2008-12-30	Brulle-Drews	
	102	7472060		2008-12-30	Gorin	
	103	7472075		2008-12-30	Odinak	
	104	7477909		2009-01-13	Roth	
	105	7478036		2009-01-13	Shen	
	106	7487088		2009-02-03	Gorin	
	107	7487110		2009-02-03	Bennett	

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	Attorney Docket Number	62KC-298931

	108	7493259		2009-02-17	Jones	
	109	7493559		2009-02-17	Wolff	
	110	7502672		2009-03-10	Kolls	
	111	7502730		2009-03-10	WANG KUANSAN	
	112	7502738		2009-03-10	Kennewick	
	113	7512906		2009-03-31	BAIER JOHN JOSEPH	
	114	7516076		2009-04-07	Walker	
	115	7529675		2009-05-05	Maes	
	116	7536297		2009-05-19	Byrd	
	117	7536374		2009-05-19	Au	
	118	7542894		2009-06-02	Murata	

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	119	7546382		2009-06-09	Healey	
	120	7548491		2009-06-16	Macfarlane	
	121	7552054		2009-06-23	Stifelman	
	122	7558730		2009-07-07	Davis	
	123	7574362		2009-08-11	Walker	
	124	7577244		2009-08-18	Taschereau	
	125	7606708		2009-10-20	Hwang	
	126	7606712		2009-10-20	SMITH STEVEN G	
	127	7620549		2009-11-17	DiCristo	
	128	7634409		2009-12-15	Kennewick	
	129	7640006		2009-12-29	Portman	

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	130	7640160		2009-12-29	DiCristo	
	131	7640272		2009-12-29	Mahajan	
	132	7672931		2010-03-02	Hurst-Hiller	
	133	7676365		2010-03-09	Hwang	
	134	7676369		2010-03-09	Fujimoto	
	135	7684977		2010-03-23	Morikawa	
	136	7693720		2010-04-06	Kennewick	
	137	7697673		2010-04-13	Chiu	
	138	7706616		2010-04-27	Kristensson	
	139	7729913		2010-06-01	LEE NICHOLAS J	
	140	7729916		2010-06-01	Coffman	

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	Attorney Docket Number	62KC-298931

	141	7729918		2010-06-01	Walker	
	142	7729920		2010-06-01	Chaar	
	143	7734287		2010-06-08	Ying	
	144	7748021		2010-06-29	Obradovich	
	145	7788084		2010-08-31	Brun	
	146	7792257		2010-09-07	Vanier	
	147	7801731		2010-09-21	Odinak	
	148	7809570		2010-10-05	Kennewick	
	149	7818176		2010-10-19	Freeman	
	150	7831426		2010-11-09	Bennett	
	151	7831433		2010-11-09	Belvin	

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	152	7856358		2010-12-21	Ho	
	153	7873519		2011-01-18	Bennett	
	154	7873523		2011-01-18	Potter	
	155	7873654		2011-01-18	Bernard	
	156	7881936		2011-02-01	Longe	
	157	7890324		2011-02-15	Bangalore	
	158	7894849		2011-02-22	Kass	
	159	7902969		2011-03-08	Obradovich	
	160	7917367		2011-03-29	DiCristo	
	161	7920682		2011-04-05	Byrne	
	162	7949529		2011-05-24	Weider	

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	163	7949537		2011-05-24	Walker	
	164	7953732		2011-05-31	Frank	
	165	7974875		2011-07-05	Quilici	
	166	7983917		2011-07-19	Kennewick	
	167	7984287		2011-07-19	Gopalakrishnan	
	168	8005683		2011-08-23	Tessel	
	169	8015006		2011-09-06	Kennewick	
	170	8024186		2011-09-20	Jeremy S. De Bonet	
	171	8027965		2011-09-27	Mitsuru Takehara	
	172	8032383		2011-10-04	Bhardwaj	
	173	8060367		2011-11-15	Keaveney	

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	174	8069046		2011-11-29	Kennewick	
	175	8073681		2011-12-06	Baldwin	
	176	8077975		2011-12-13	Ma	
	177	8082153		2011-12-20	Coffman	
	178	8086463		2011-12-27	Ativanichayaphong	
	179	8103510		2012-01-24	Sato	
	180	8112275		2012-02-07	Kennewick	
	181	8140327		2012-03-20	Kennewick	
	182	8140335		2012-03-20	Kennewick	
	183	8145489		2012-03-27	Freeman	
	184	8150694		2012-04-03	Kennewick	

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	185	8155962		2012-04-10	Kennewick	
	186	8170867		2012-05-01	Germain	
	187	8180037		2012-05-15	Delker	
	188	8195468		2012-06-05	Weider	
	189	8200485		2012-06-12	Lee	
	190	8204751		2012-06-19	Giuseppe Di Fabbrizio	
	191	8219399		2012-07-10	Lutz	
	192	8219599		2012-07-10	Tunstall-Pedoe	
	193	8224652		2012-07-17	Wang	
	194	8255224		2012-08-28	Singleton	
	195	8326599		2012-12-04	Nadi Tomeh	

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	196	8326627		2012-12-04	Kennewick	
	197	8326634		2012-12-04	DiCristo	
	198	8326637		2012-12-04	Baldwin	
	199	8332224		2012-12-11	DiCristo	
	200	8340975		2012-12-25	Theodore Alfred Rosenberger	
	201	8346563		2013-01-01	Hjelm	
	202	8370147		2013-02-05	Kennewick	
	203	8447607		2013-05-21	Weider	
	204	8447651		2013-05-21	Nathaniel B. Scholl	
	205	8452598		2013-05-28	Kennewick	
	206	8503995		2013-08-06	Ramer	

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	207	8509403		2013-08-13	Chiu	
	208	8515765		2013-08-20	Baldwin	
	209	8527274		2013-09-03	Freeman	
	210	8577671		2013-11-05	Rakesh Barve	
	211	8589161		2013-11-19	Kennewick	
	212	8612205		2013-12-17	Gregory Alan Hanneman	
	213	8612206		2013-12-17	Achraf Chalabi	
	214	8620659		2013-12-31	DiCristo	
	215	8719005		2014-05-06	Lee	
	216	8719009		2014-05-06	Baldwin	
	217	8719026		2014-05-06	Kennewick	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	218	8731929		2014-05-20	Kennewick	
	219	8738380		2014-05-27	Baldwin	
	220	8849652		2014-09-30	Weider	
	221	8849670		2014-09-30	DiCristo	
	222	8849696		2014-09-30	Pansari	
	223	8849791		2014-09-30	Hertschuh	
	224	8886536		2014-11-11	Freeman	
	225	8972243		2015-03-03	Nikko Strom	
	226	8983839		2015-03-17	Kennewick	
	227	9009046		2015-04-14	Stewart	
	228	9015049		2015-04-21	Baldwin	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	229	9037455		2015-05-19	Faaborg	
	230	9070366		2015-06-30	Lambert Mathias	
	231	9070367		2015-06-30	Bjorn Hoffmeister	
	232	9105266		2015-08-11	Baldwin	
	233	9171541		2015-10-27	Kennewick	
	234	9269097		2016-02-23	Freeman	
	235	9305548		2016-04-05	Kennewick	
	236	9308445		2016-04-12	Michael M. Merzenich	
	237	9318108		2016-04-19	GRUBER THOMAS ROBERT	
	238	9406078		2016-08-02	Freeman	
	239	9443514		2016-09-13	Gabriel Taubman	

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	Examiner Name	TBD
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	240	9502025		2016-11-22	Mike Kennewick	
	241	9711143		2017-07-18	KENNEWICK ROBERT A	

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	4	20010047261		2001-11-29	Peter Kassan	
	5	20010049601		2001-12-06	Kroeker	
	6	20010054087		2001-12-20	Flom	
	7	20020002548		2002-01-03	Brian Roundtree	

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	8	20020007267		2002-01-17	BATCHILO LEONID	
	9	20020010584		2002-01-24	Schultz	
	10	20020015500		2002-02-07	Belt	
	11	20020022927		2002-02-21	Lemelson	
	12	20020022956		2002-02-21	Igor Ukrainczyk	
	13	20020029186		2002-03-07	Roth	
	14	20020029261		2002-03-07	Shibata	
	15	20020032752		2002-03-14	Gold	
	16	20020035501		2002-03-21	Handel	
	17	20020040297		2002-04-04	Tsiao	
	18	20020049535		2002-04-25	Rigo	

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	20	20020059068		2002-05-16	Rose	
	21	20020065568		2002-05-30	Silfvast	
	22	20020067839		2002-06-06	Heinrich	
	23	20020069059		2002-06-06	Smith	
	24	20020069071		2002-06-06	Knockeart	
	25	20020073176		2002-06-13	Ikeda	
	26	20020082911		2002-06-27	Dunn	
	27	20020087312		2002-07-04	Lee	
	28	20020087326		2002-07-04	Lee	
	29	20020087525		2002-07-04	Abbott	

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	31	20020120609		2002-08-29	Lang	
	32	20020124050		2002-09-05	Middeljans	
	33	20020133347		2002-09-19	Eberhard Schoneburg	
	34	20020133354		2002-09-19	Ross	
	35	20020133402		2002-09-19	Faber	
	36	20020135618		2002-09-26	Maes	
	37	20020138248		2002-09-26	Corston-Oliver	
	38	20020143532		2002-10-03	McLean	
	39	20020143535		2002-10-03	Kist	
	40	20020152260		2002-10-17	Chen	

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	42	20020161647		2002-10-31	Michael Gailey	
	43	20020169597		2002-11-14	Vitaliy Fain	
	44	20020173333		2002-11-21	Buchholz	
	45	20020173961		2002-11-21	Guerra	
	46	20020178003		2002-11-28	GEHRKE JAMES K	
	47	20020184373		2002-12-05	Maes	
	48	20020188455		2002-12-12	SHIODA TAKEHIKO	
	49	20020188602		2002-12-12	Stubler	
	50	20020198714		2002-12-26	Zhou	
	51	20030005033		2003-01-02	Sudhir Mohan	

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	52	20030014261		2003-01-16	Kageyama	
	53	20030016835		2003-01-23	Elko	
	54	20030036903		2003-02-20	Courtney Konopka	
	55	20030046071		2003-03-06	Blair Wyman	
	56	20030046281		2003-03-06	Chan Son	
	57	20030046346		2003-03-06	Mumick	
	58	20030064709		2003-04-03	Gailey	
	59	20030065427		2003-04-03	Funk	

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	Attorney Docket Number	62KC-298931

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)	2019-05-20
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.**

12/13/2019

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The information provided by you in this form will be subject to the following routine uses:

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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.

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.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6076057		2000-06-13	NARAYANAN SHRIKANTH SAMBASIVAN	

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	1	101236635A	CN		2008-08-06	IBM		X

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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[5]

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	Application Number	16417178
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	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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EXAMINER SIGNATURE

Examiner Signature	/ERIC YEN/	Date Considered	12/13/2019

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

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	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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)	2019-11-25
Name/Print	Mark A. Patrick	Registration Number	72,958

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Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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(Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	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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	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	9	5208748		1993-05-04	Flores	
	10	5265065		1993-11-23	Turtle	
	11	5274560		1993-12-28	LaRue	
	12	5331554		1994-07-19	GRAHAM JAMES M	
	13	5357596		1994-10-18	Takebayashi	
	14	5369575		1994-11-29	Lamberti	
	15	5377350		1994-12-27	Skinner	
	16	5386556		1995-01-31	Hedin	
	17	5424947		1995-06-13	Nagao	
	18	5471318		1995-11-28	Ahuja	
	19	5475733		1995-12-12	Eisdorfer	

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	Attorney Docket Number	62KC-298931

	20	5479563		1995-12-26	Yamaguchi	
	21	5488652		1996-01-30	Bielby	
	22	5499289		1996-03-12	Bruno	
	23	5500920		1996-03-19	Kupiec	
	24	5517560		1996-05-14	Greenspan	
	25	5533108		1996-07-02	Harris	
	26	5537436		1996-07-16	Bottoms	
	27	5539744		1996-07-23	Chu	
	28	5557667		1996-09-17	Bruno	
	29	5559864		1996-09-24	KennedyJr	
	30	5563937		1996-10-08	Bruno	

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	Attorney Docket Number	62KC-298931

	31	5577165		1996-11-19	Takebayashi	
	32	5590039		1996-12-31	Ikeda	
	33	5608635		1997-03-04	Tamai	
	34	5615296		1997-03-25	Vincent M. Stanford	
	35	5617407		1997-04-01	Bareis	
	36	5633922		1997-05-27	August	
	37	5634086		1997-05-27	Rtischev	
	38	5652570		1997-07-29	Lepkofker	
	39	5675629		1997-10-07	Raffel	
	40	5696965		1997-12-09	Dedrick	
	41	5708422		1998-01-13	Blonder	

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	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	42	5721938		1998-02-24	Stuckey	
	43	5722084		1998-02-24	Chakrin	
	44	5740256		1998-04-14	CastelloDaCosta	
	45	5742763		1998-04-21	Jones	
	46	5748841		1998-05-05	Morin	
	47	5748974		1998-05-05	Johnson	
	48	5752052		1998-05-12	Richardson	
	49	5754784		1998-05-19	Garland	
	50	5761631		1998-06-02	Nasukawa	
	51	5774841		1998-06-30	Salazar	
	52	5774859		1998-06-30	Houser	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	53	5794050		1998-08-11	Dahlgren	
	54	5794196		1998-08-11	Yegnanarayanan	
	55	5797112		1998-08-18	Komatsu	
	56	5799276		1998-08-25	Komissarchik	
	57	5802510		1998-09-01	Jones	
	58	5829000		1998-10-27	Huang	
	59	5832221		1998-11-03	Jones	
	60	5839107		1998-11-17	Gupta	
	61	5848396		1998-12-08	Gerace	
	62	5855000		1998-12-29	Waibel	
	63	5860059		1999-01-12	AUST HARALD	

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	Attorney Docket Number	62KC-298931

	64	5867817		1999-02-02	Catallo	
	65	5878385		1999-03-02	Bralich	
	66	5878386		1999-03-02	Coughlin	
	67	5892813		1999-04-06	Morin	
	68	5892900		1999-04-06	Ginter	
	69	5895464		1999-04-20	Bhandari	
	70	5895466		1999-04-20	Goldberg	
	71	5897613		1999-04-27	Chan	
	72	5899991		1999-05-04	Robert Karch	
	73	5902347		1999-05-11	Backman	
	74	5911120		1999-06-08	Jarett	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	75	5918222		1999-06-29	Fukui	
	76	5926784		1999-07-20	Richardson	
	77	5933822		1999-08-03	Braden-Harder	
	78	5950167		1999-09-07	Yaker	
	79	5953393		1999-09-14	Culbreth	
	80	5960384		1999-09-28	Douglas E. Brash	
	81	5960397		1999-09-28	Rahim	
	82	5960399		1999-09-28	Barclay	
	83	5960447		1999-09-28	Holt	
	84	5963894		1999-10-05	Richardson	
	85	5963940		1999-10-05	Liddy	

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	86	5982906		1999-11-09	ONO YOSHIHIRO	
	87	5983190		1999-11-09	TrowerII	
	88	5987404		1999-11-16	DellaPietra	
	89	5991721		1999-11-23	Asano	
	90	5995119		1999-11-30	Cosatto	
	91	5995928		1999-11-30	Nguyen	
	92	5995943		1999-11-30	Bull	
	93	6009382		1999-12-28	Martino	
	94	6014559		2000-01-11	Amin	
	95	6018708		2000-01-25	Dahan	
	96	6021384		2000-02-01	Gorin	

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	97	6028514		2000-02-22	Lemelson	
	98	6035267		2000-03-07	Watanabe	
	99	6044347		2000-03-28	Abella	
	100	6049602		2000-04-11	Foladare	
	101	6049607		2000-04-11	Marash	
	102	6058187		2000-05-02	Chen	
	103	6067513		2000-05-23	Ishimitsu	
	104	6073098		2000-06-06	Buchsbaum	
	105	6076059		2000-06-13	Glickman	
	106	6078886		2000-06-20	Dragosh	
	107	6081774		2000-06-27	deHita	

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	108	6085186		2000-07-04	Christianson	
	109	6101241		2000-08-08	Boyce	
	110	6108631		2000-08-22	Ruhl	
	111	6119087		2000-09-12	Kuhn	
	112	6119101		2000-09-12	Peckover	
	113	6122613		2000-09-19	Baker	
	114	6134235		2000-10-17	Goldman	
	115	6144667		2000-11-07	Doshi	
	116	6144938		2000-11-07	Surace	
	117	6154526		2000-11-28	Dahlke	
	118	6160883		2000-12-12	Jackson	

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	119	6167377		2000-12-26	Gillick	
	120	6173266		2001-01-09	Marx	
	121	6173279		2001-01-09	Levin	
	122	6175858		2001-01-16	Bulfer	
	123	6185535		2001-02-06	Hedin	
	124	6188982		2001-02-13	Chiang	
	125	6192110		2001-02-20	Abella	
	126	6192338		2001-02-20	Haszto	
	127	6195634		2001-02-27	Dudemaine	
	128	6195651		2001-02-27	Handel	
	129	6199043		2001-03-06	Happ	

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	130	6208964		2001-03-27	Sabourin	
	131	6208972		2001-03-27	Grant	
	132	6219346		2001-04-17	Maxemchuk	
	133	6219643		2001-04-17	Cohen	
	134	6219645		2001-04-17	BYERS CHARLES CALVIN	
	135	6226612		2001-05-01	Srenger	
	136	6233556		2001-05-15	Teunen	
	137	6233559		2001-05-15	Balakrishnan	
	138	6233561		2001-05-15	Junqua	
	139	6236968		2001-05-22	Kanevsky	
	140	6243679		2001-06-05	Mehryar Mohri	

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	142	6246990		2001-06-12	Happ	
	143	6266636		2001-07-24	Kosaka	
	144	6269336		2001-07-31	Ladd	
	145	6272455		2001-08-07	Hoshen	
	146	6272461		2001-08-07	Phillip C. Meredith	
	147	6275231		2001-08-14	Obradovich	
	148	6278377		2001-08-21	DeLine	
	149	6278968		2001-08-21	Franz	
	150	6286002		2001-09-04	Axaopoulos	
	151	6288319		2001-09-11	Catona	

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	153	6301560		2001-10-09	Masters	
	154	6308151		2001-10-23	Smith	
	155	6311159		2001-10-30	VanTichelen	
	156	6314402		2001-11-06	Monaco	
	157	6321196		2001-11-20	Franceschi	
	158	6356869		2002-03-12	Chapados	
	159	6362748		2002-03-26	Huang	
	160	6366882		2002-04-02	Bijl	
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	164	6377913		2002-04-23	Coffman	
	165	6377919		2002-04-23	BURNETT GREG C	
	166	6381535		2002-04-30	Durocher	
	167	6385596		2002-05-07	Wiser	
	168	6385646		2002-05-07	Brown	
	169	6389398		2002-05-14	LUSTGARTEN PAUL C	
	170	6393403		2002-05-21	Majaniemi	
	171	6393428		2002-05-21	Miller	
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	173	6404878		2002-06-11	Jackson	

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	175	6408272		2002-06-18	White	
	176	6411810		2002-06-25	Maxemchuk	
	177	6411893		2002-06-25	Ruhl	
	178	6415257		2002-07-02	Junqua	
	179	6418210		2002-07-09	Sayko	
	180	6420975		2002-07-16	DeLine	
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	186	6434529		2002-08-13	Walker	
	187	6442522		2002-08-27	Carberry	
	188	6446114		2002-09-03	Bulfer	
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	190	6453292		2002-09-17	Ramaswamy	
	191	6456711		2002-09-24	Cheung	
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	197	6487495		2002-11-26	Gale	
	198	6498797		2002-12-24	Anerousis	
	199	6499013		2002-12-24	Weber	
	200	6501833		2002-12-31	Phillips	
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	202	6505155		2003-01-07	Vanbuskirk	
	203	6510417		2003-01-21	Woods	
	204	6513006		2003-01-28	Howard	
	205	6522746		2003-02-18	Marchok	
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	209	6549629		2003-04-15	Finn	
	210	6553372		2003-04-22	Brassell	
	211	6556970		2003-04-29	Sasaki	
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	215	6567778		2003-05-20	ChaoChang	
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	219	6570964		2003-05-27	Murveit	
	220	6571279		2003-05-27	Herz	
	221	6574597		2003-06-03	Mohri	
	222	6574624		2003-06-03	Johnson	
	223	6578022		2003-06-10	Foulger	
	224	6581103		2003-06-17	Dengler	
	225	6584439		2003-06-24	Geilhufe	
	226	6587858		2003-07-01	Strazza	
	227	6591185		2003-07-08	Ari Israel Polidi	
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	230	6594367		2003-07-15	Marash	
	231	6598018		2003-07-22	Junqua	
	232	6601026		2003-07-29	Appelt	
	233	6601029		2003-07-29	John Brian Pickering	
	234	6604075		2003-08-05	Brown	
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	242	6631346		2003-10-07	Karaorman	
	243	6631351		2003-10-07	Ramachandran	
	244	6633846		2003-10-14	Bennett	
	245	6636790		2003-10-21	Lightner	
	246	6643620		2003-11-04	Contolini	
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	248	6650747		2003-11-18	Bala	
	249	6658388		2003-12-02	Kleindienst	
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	253	6701294		2004-03-02	Ball	
	254	6704396		2004-03-09	Parolkar	
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	256	6704708		2004-03-09	Pickering	
	257	6707421		2004-03-16	Drury	
	258	6708150		2004-03-16	Hirayama	
	259	6721001		2004-04-13	Berstis	
	260	6721633		2004-04-13	Funk	
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	263	6732088		2004-05-04	Natalie S. Glance	
	264	6735592		2004-05-11	Neumann	
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	266	6741931		2004-05-25	Kohut	
	267	6742021		2004-05-25	Halverson	
	268	6745161		2004-06-01	Arnold	
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	278	6801604		2004-10-05	Maes	
	279	6801893		2004-10-05	Backfried	
	280	6804330		2004-10-12	Shannon Jones	
	281	6810375		2004-10-26	Ejerhed	
	282	6813341		2004-11-02	Mahoney	
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	285	6829603		2004-12-07	Chai	
	286	6832230		2004-12-14	Zilliacus	
	287	6833848		2004-12-21	Wolff	
	288	6850603		2005-02-01	Eberle	
	289	6856990		2005-02-15	Barile	
	290	6865481		2005-03-08	Kawazoe	
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	296	6877134		2005-04-05	Fuller	
	297	6882970		2005-04-19	GARNER PHILIP NEIL	
	298	6901366		2005-05-31	Kuhn	
	299	6910003		2005-06-21	Arnold	
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	8	2008058465	JP		2008-03-13	TOSHIBA CORP		
	9	2008139928	JP		2008-06-19	YAHOO JAPAN CORP		
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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.

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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)	2019-05-20
Name/Print	Mark A. Patrick	Registration Number	72,958

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	149	20070208732		2007-09-06	Flowers	
	150	20070214182		2007-09-13	Rosenberg	
	151	20070250901		2007-10-25	McIntire	
	152	20070265850		2007-11-15	Kennewick	
	153	20070266257		2007-11-15	Camaisa	
	154	20070276651		2007-11-29	Bliss	
	155	20070294615		2007-12-20	Saleel Sathe	
	156	20070299824		2007-12-27	Pan	
	157	20080014908		2008-01-17	Abraham Vasant	
	158	20080034032		2008-02-07	Healey	
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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

	160	20080059188		2008-03-06	Konopka	
	161	20080065386		2008-03-13	Cross	
	162	20080065389		2008-03-13	Cross	
	163	20080065390		2008-03-13	ATIVANICHAYAPHONG SOONTHORN	
	164	20080086455		2008-04-10	Adrienne C. Meisels	
	165	20080091406		2008-04-17	Baldwin	
	166	20080103761		2008-05-01	Printz	
	167	20080103781		2008-05-01	Wasson	
	168	20080104071		2008-05-01	Pragada	
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	171	20080126091		2008-05-29	Jason W. Clark	
	172	20080126284		2008-05-29	FORBES SCOTT C	
	173	20080133215		2008-06-05	Sarukkai	
	174	20080140385		2008-06-12	Mahajan	
	175	20080147396		2008-06-19	Wang	
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	177	20080147637		2008-06-19	Xin Li	
	178	20080154604		2008-06-26	Sathish	
	179	20080162471		2008-07-03	Bernard	
	180	20080177530		2008-07-24	Cross	
	181	20080184164		2008-07-31	Giuseppe Di Fabbrizio	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	182	20080189110		2008-08-07	Freeman	
	183	20080189187		2008-08-07	HAO BIAO	
	184	20080228496		2008-09-18	Dong Yu	
	185	20080235023		2008-09-25	Kennewick	
	186	20080235027		2008-09-25	Cross	
	187	20080269958		2008-10-30	Dimitar Petrov Filev	
	188	20080270135		2008-10-30	GOEL VAIBHAVA	
	189	20080270224		2008-10-30	Eric A. Portman	
	190	20080294437		2008-11-27	Nakano	
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	193	20080319751		2008-12-25	Kennewick	
	194	20090006077		2009-01-01	Keaveney	
	195	20090006194		2009-01-01	Prashant Sridharan	
	196	20090018829		2009-01-15	Michael Kuperstein	
	197	20090024476		2009-01-22	Baar	
	198	20090030686		2009-01-29	WENG FULIANG	
	199	20090052635		2009-02-26	Jones	
	200	20090055176		2009-02-26	HU JUNLING	
	201	20090067599		2009-03-12	Agarwal	
	202	20090076827		2009-03-19	Bulitta	
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Attorney Docket Number	62KC-298931

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	205	20090144131		2009-06-04	Chiu	
	206	20090144271		2009-06-04	Richardson	
	207	20090150156		2009-06-11	Kennewick	
	208	20090157382		2009-06-18	BAR SHMUEL	
	209	20090164216		2009-06-25	Rathinavelu Chengalvarayan	
	210	20090171664		2009-07-02	Kennewick	
	211	20090171912		2009-07-02	NASH MICHAEL PATRICK	
	212	20090197582		2009-08-06	Robert C. Lewis	
	213	20090216540		2009-08-27	Tessel	
	214	20090248565		2009-10-01	Kai Chuang	

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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	216	20090259561		2009-10-15	Donald Robert Martin Boys	
	217	20090259646		2009-10-15	Fujita	
	218	20090265163		2009-10-22	Li	
	219	20090271194		2009-10-29	Davis	
	220	20090273563		2009-11-05	Pryor	
	221	20090276700		2009-11-05	Anderson	
	222	20090287680		2009-11-19	Paek	
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Examiner Name	TBD
Attorney Docket Number	62KC-298931

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	227	20090313026		2009-12-17	Coffman	
	228	20090319517		2009-12-24	Ramananthan V. Guha	
	229	20100023320		2010-01-28	Cristo	
	230	20100023331		2010-01-28	DUTA NICOLAE	
	231	20100029261		2010-02-04	Mikkelsen	
	232	20100036967		2010-02-11	Caine	
	233	20100049501		2010-02-25	Kennewick	
	234	20100049514		2010-02-25	Kennewick	
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Filing Date	2019-05-20
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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

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	238	20100094707		2010-04-15	Freer	
	239	20100138300		2010-06-03	R. Tyler Wallis	
	240	20100145700		2010-06-10	Kennewick	
	241	20100185512		2010-07-22	Borger	
	242	20100191856		2010-07-29	GUPTA APURV	
	243	20100204986		2010-08-12	Kennewick	
	244	20100204994		2010-08-12	Kennewick	
	245	20100217604		2010-08-26	Baldwin	
	246	20100268536		2010-10-21	SUENDERMANN DAVID	
	247	20100286985		2010-11-11	Kennewick	

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	First Named Inventor	Larry BALDWIN
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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	249	20100312547		2010-12-09	VAN OS MARCEL	
	250	20100312566		2010-12-09	Odinak	
	251	20100318357		2010-12-16	Anthony F. Istvan	
	252	20100331064		2010-12-30	Michelstein	
	253	20110022393		2011-01-27	Waller	
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Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

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	260	20110231182		2011-09-22	Weider	
	261	20110231188		2011-09-22	Kennewick	
	262	20110238409		2011-09-29	Jean-Marie Henri Daniel Larcheveque	
	263	20110307167		2011-12-15	Taschereau	
	264	20120022857		2012-01-26	Baldwin	
	265	20120041753		2012-02-16	Marc Dymetman	
	266	20120046935		2012-02-23	Nagao	
	267	20120101809		2012-04-26	Kennewick	
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	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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	272	20120239498		2012-09-20	Ramer	
	273	20120240060		2012-09-20	Pennington	
	274	20120265528		2012-10-18	Thomas Robert Gruber	
	275	20120278073		2012-11-01	Weider	
	276	20130006734		2013-01-03	Ocko	
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	278	20130060625		2013-03-07	Davis	
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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	282	20130254314		2013-09-26	Chow	
	283	20130297293		2013-11-07	Cristo	
	284	20130304473		2013-11-14	Baldwin	
	285	20130311324		2013-11-21	Stoll	
	286	20130332454		2013-12-12	Gunther Stuhec	
	287	20130339022		2013-12-19	Baldwin	
	288	20140006951		2014-01-02	Hunter	
	289	20140012577		2014-01-09	Freeman	
	290	20140025371		2014-01-23	Sunyoung Min	
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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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	293	20140156278		2014-06-05	Kennewick	
	294	20140195238		2014-07-10	Makoto Terao	
	295	20140236575		2014-08-21	Tur	
	296	20140249821		2014-09-04	Kennewick	
	297	20140249822		2014-09-04	Baldwin	
	298	20140278413		2014-09-18	Pitschel	
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	Examiner Name	TBD
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Examiner Signature	/ERIC YEN/	Date Considered	12/13/2019

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	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

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)	2019-05-20
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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

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	2	8190436		2012-05-29	BANGALORE SRINIVAS	
	3	8972354		2015-03-03	TELANG NILESH	
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	2	20050080821		2005-04-14	BREIL PETER D	

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	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

	3	20050138168		2005-06-23	HOFFMAN PHILIP M	
	4	20170004588		2017-01-05	ISAACSON THOMAS M	

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FOREIGN PATENT DOCUMENTS Remove

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

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NON-PATENT LITERATURE DOCUMENTS Remove

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[5]
	1		

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

EXAMINER SIGNATURE

Examiner Signature	/ERIC YEN/	Date Considered	12/13/2019

*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.

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

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)	2019-08-30
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/ 12/13/2019

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

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 the Freedom of Information Act requires disclosure of these record s.

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.

/ERIC YEN/ 12/13/2019

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EFS Web 2.1.18

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	TBD
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	62KC-298931

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140330552		2014-11-06	Srinivas Bangalore	
	2	20140337007		2014-11-13	WAIBEL NAOMI AOKI	
	3	20140365222		2014-12-11	Weider	
	4	20150019211		2015-01-15	Patrice Y. Simard	
	5	20150019217		2015-01-15	Cristo	

/ERIC YEN/ 12/13/2019

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	6	20150019227		2015-01-15	Anandarajah	
	7	20150066479		2015-03-05	PASUPALAK SAM	
	8	20150066627		2015-03-05	Freeman	
	9	20150073910		2015-03-12	Kennewick	
	10	20150095159		2015-04-02	Kennewick	
	11	20150142447		2015-05-21	Kennewick	
	12	20150170641		2015-06-18	Kennewick	
	13	20150193379		2015-07-09	Sarin S. Mehta	
	14	20150199339		2015-07-16	Shachar Mirkin	
	15	20150228276		2015-08-13	Baldwin	
	16	20150293917		2015-10-15	John P. Bufe	

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/ERIC YEN/ 12/13/2019

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	TBD
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	17	20150348544		2015-12-03	Baldwin	
	18	20150348551		2015-12-03	Thomas R. Gruber	
	19	20150364133		2015-12-17	Freeman	
	20	20160049152		2016-02-18	Kennewick	
	21	20160078482		2016-03-17	Kennewick	
	22	20160078491		2016-03-17	Kennewick	
	23	20160078504		2016-03-17	Kennewick	
	24	20160078773		2016-03-17	Carter	
	25	20160110347		2016-04-21	Kennewick	
	26	20160148610		2016-05-26	Kennewick	
	27	20160148612		2016-05-26	Guo	

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/ERIC YEN/ 12/13/2019

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	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	62KC-298931

	28	20160188292		2016-06-30	Carter	
	29	20160188573		2016-06-30	Tang	
	30	20160217785		2016-07-28	Robert A. Kennewick	
	31	20160335676		2016-11-17	Tom Freeman	

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

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

EXAMINER SIGNATURE

Examiner Signature	/ERIC YEN/	Date Considered	12/13/2019

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/ERIC YEN/ 12/13/2019

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First Named Inventor	Larry BALDWIN
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Attorney Docket Number	62KC-298931

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Signature	/Mark A. Patrick/	Date (YYYY-MM-DD)	2019-05-20
Name/Print	Mark A. Patrick	Registration Number	72,958

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/ERIC YEN/ 12/13/2019

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

Privacy Act Statement

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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 record s.

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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)).

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/ERIC YEN/ 12/13/2019

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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	("20030167167" "20040044516" "7072888").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 16:32
L2	0	(G10L17/$ G10L2017/$).cpc. and (((long-term) with (normal adj (speech voice)))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:08
L3	0	(G10L17/$ G10L2017/$).cpc. and (((long-term) with ((speech voice speaking) adj style$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:09
L4	2	(G10L$/$).cpc. and (((long-term) with ((speech voice speaking) adj style$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:09
L5	2	(G10L$/$).cpc. and (((long-term) with (normal adj (speech voice)))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:10
L6	11	(G10L$/$).cpc. and (((weeks months years days) with (normal adj (speech voice)))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:10
L7	3	(G10L$/$).cpc. and (((weeks months years days) with ((speak$4 speech voice) near5 style$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:11
L8	0	(G10L$/$).cpc. and (((weeks months years days) with utterances with long-term with (train$4 learn$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:12
L9	7	(G10L$/$).cpc. and (((weeks months years days) with utterances with (train$4 learn$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:12
L10	3	(G10L$/$).cpc. and (((long-term) with utterances with (train$4 learn$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2019/12/12 17:13

12/12/2019 5:13:38 PM
C:\Users\eyen\Documents\EAST\Workspaces\16280633F.wsp

IN THE UNITED STATES PATENT & TRADEMARK OFFICE			
In Re Patent Application Of:	Larry BALDWIN *et al.*	**Attorney Docket No.:**	62KC-298931
Serial No.:	16/417,178	**Confirmation No.:**	8276
Filing Date:	May 20, 2019	**Examiner:**	Eric Yen
		Art Unit:	2658

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

PROPOSED AGENDA

Via Email
Examiner Yen
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The following is submitted as a Proposed Agenda for a telephonic Examiner's Interview regarding the above-identified patent application. It should be appreciated that this document is provided solely as a reference for the Examiner and is not intended for entry into the Official Record.

As previously discussed, the Examiner Interview is currently scheduled for Wednesday, January 22, 2020, at 3:00 PM ET. Mark Patrick will call you at the phone number listed in the Office Action (571-272-4249). Please contact Mark Patrick at 202-747-2192 if you have any questions.

PROPOSED TOPICS

- Discuss the rejection of independent claim 1 under 35 U.S.C. § 103 and the relied upon portions of Gong.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

133759 7590 01/28/2020

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

EXAMINER
YEN, ERIC L

ART UNIT	PAPER NUMBER
2658	

NOTIFICATION DATE	DELIVERY MODE
01/28/2020	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

PTOL-90A (Rev. 04/07)

Applicant-Initiated Interview Summary	**Application No.** 16/417,178	**Applicant(s)** BALDWIN et al.	
	Examiner ERIC YEN	**Art Unit** 2658	**AIA (FITF) Status** No

All participants (applicant, applicants representative, PTO personnel):

(1) ERIC YEN. (3) _____.

(2) Mark Patrick. (4) _____.

Date of Interview: 22 January 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☑103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: Gong.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's representative and the examiner discussed features of the Gong reference and possible distinguishing aspects of Applicant's invention that may be incorporated into claims filed in the next response. No agreement was reached pertaining to any particular claim language..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/ERIC YEN/ Primary Examiner, Art Unit 2658	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

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- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
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- Type of interview (telephonic, video-conference, or personal)
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- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
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It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

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3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

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	1	2867583	FR		2005-09-16	VESSIERE GILLES RENE		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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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.

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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)	2020-03-12
Name/Print	Mark A. Patrick	Registration Number	72,958

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(60) **Références à d'autres documents nationaux apparentés :**

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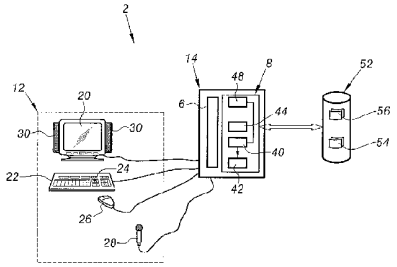
(73) **Titulaire(s) :**

(74) **Mandataire(s) :** CABINET LAVOIX AUVERGNE.

(54) CORRECTEUR SEMANTIQUE, SYNTAXIQUE ET/OU LEXICAL ET PROCEDE D'INTERACTION VOCALE, SUPPORT D'ENREGISTREMENT ET PROGRAMME D'ORDINATEUR POUR SA MISE EN OEUVRE.

(57) Ce correcteur sémantique, syntaxique et/ou lexical électronique est adapté aux personnes dyslexiques ou dysorthographiques pour faciliter la correction syntaxique et/ou lexicale d'une expression erronée dans un texte numérique. Ce correcteur comporte:

- un module (42) d'établissement d'expressions apte à établir automatiquement une liste d'au moins deux expressions correctes propres chacune à remplacer l'expression erronée, et
- un module (44) d'interaction vocale pour sélectionner dans cette liste l'expression correcte destinée à remplacer l'expression erronée dans le texte numérique.



FR 2 867 583 - A1

L'invention concerne un correcteur sémantique, syntaxique et/ou lexical, un procédé d'interaction vocale, un support d'enregistrement et un programme d'ordinateur pour sa mise en œuvre.

Plus précisément, l'invention concerne un correcteur comportant un module d'établissement d'expressions apte à établir automatiquement une liste d'au moins deux expressions correctes propres chacune à remplacer l'expression erronée, cette liste étant établie à partir de l'expression erronée et à l'aide d'une base préétablie de règles de corrections.

Ici, le terme « expression » sera utilisé pour désigner aussi bien un mot, un groupe de mots dans une phrase ou une phrase entière.

Il existe aujourd'hui de nombreux correcteurs syntaxiques et/ou lexicaux associés à différents logiciels de traitement de textes existant. L'un des plus connu de ces correcteurs est, par exemple, celui utilisé dans le traitement de texte Word de Microsoft®.

Typiquement, ces correcteurs détectent automatiquement une expression erronée, la soulignent et affichent une liste d'expressions susceptibles d'être utilisées pour corriger l'expression erronée. L'utilisateur doit alors cliquer sur l'une de ces expressions dans la liste pour la sélectionner. L'expression sélectionnée est ensuite utilisée pour corriger l'expression erronée.

Ces correcteurs sont pratiques et adaptés pour la plupart des utilisateurs. Toutefois, de tels correcteurs ne sont pas faciles à utiliser pour une personne dyslexique ou dysorthographique. En effet, ces personnes ont souvent des difficultés pour lire les expressions d'une liste d'expressions de sorte qu'il leur est difficile de sélectionner dans la liste d'expressions proposées l'expression correcte à utiliser pour corriger l'expression erronée. Il n'existe donc pas aujourd'hui de correcteur adapté aux personnes dyslexiques pour les assister à corriger un texte.

L'invention vise à remédier à cette lacune en proposant un correcteur sémantique, syntaxique et/ou lexical adapté aux personnes dyslexiques ou dysorthographiques pour les aider dans la correction sémantique, syntaxique et/ou lexicale d'une expression erronée dans un texte numérique.

L'invention a donc pour objet un correcteur sémantique, syntaxique et/ou lexical caractérisé en ce qu'il comporte un module d'interaction vocale pour sélectionner dans cette liste l'expression correcte destinée à remplacer l'expression erronée dans le texte numérique.

Contrairement aux correcteurs connus, celui-ci fait appel à la voix pour sélectionner une expression dans la liste d'expressions susceptibles d'être utilisées pour corriger l'expression erronée. Ainsi, même une personne dyslexique ou dysorthographique souffrant de troubles de la lecture peut sélectionner correctement et facilement dans la liste l'expression qui doit remplacer l'expression erronée.

Suivant d'autres caractéristiques supplémentaires prises seules ou en combinaison, ce correcteur conforme à l'invention se caractérise en ce que :

- le module d'interaction vocale est apte à :
  - acquérir une expression dictée par un utilisateur,
  - comparer l'expression dictée à chaque expression de ladite liste pour déterminer l'expression de cette liste ressemblant phonétiquement le plus à l'expression dictée, et
  - sélectionner automatiquement l'expression de la liste la plus ressemblante à l'expression dictée ;
  - à construire un premier modèle de parole pour chaque expression de ladite liste et un second modèle de parole pour l'expression dictée, et
  - à comparer l'expression dictée à chaque expression de ladite liste en comparant le second modèle de parole à chacun des premiers modèles de parole construits.
- il comporte :
  - un module de synthèse vocale propre à lire le texte numérique,
  - un module de sélection de l'expression du texte actuellement lue par le module de synthèse en réponse à un signal d'activation, et
  - un dispositif de génération dudit signal d'activation sous la commande d'un utilisateur, et

- en ce que le module d'établissement est apte à utiliser l'expression sélectionnée par le module de sélection en tant qu'expression erronée pour générer les expressions de ladite liste.

L'invention a également pour objet un procédé d'interaction vocale pour faciliter la correction sémantique, syntaxique et/ou lexicale d'une expression erronée dans un texte numérique, ce procédé comportant :

- une étape automatique d'établissement d'une liste limitée d'expressions correctes propres chacune à remplacer l'expression erronée, cette liste étant établie à partir de l'expression erronée et à l'aide d'une base préétablie de règles de corrections de manière à former un sous ensemble limité parmi l'ensemble des expressions possibles dans une langue donnée,

- une étape d'interaction vocale pour sélectionner dans cette liste l'expression correcte destinée à remplacer l'expression erronée dans le texte numérique, cette étape comportant les opérations consistant à :

- acquérir une expression dictée par un utilisateur,

- comparer l'expression dictée à chaque expression de ladite liste pour déterminer l'expression de cette liste ressemblant le plus à l'expression dictée, et

- sélectionner automatiquement l'expression de la liste la plus ressemblante à l'expression dictée.

L'invention a également pour objet un support d'enregistrement d'informations et un programme d'ordinateur, caractérisés en ce qu'ils comportent des instructions pour l'exécution d'un procédé conforme à l'invention, lorsque ces instructions sont exécutées par un calculateur électronique.

L'invention sera mieux comprise à la lecture de la description qui va suivre donnée uniquement à titre d'exemple et faite en se référant aux dessins sur lesquels :

- la figure 1 est une illustration schématique d'un système de correction syntaxique et lexical conforme à l'invention,

- la figure 2 est un organigramme d'un procédé pour faciliter la correction syntaxique et lexicale conforme à l'invention, et

- la figure 3 est un organigramme d'un autre mode de réalisation du procédé de la figure 2.

La figure 1 représente un système de correction sémantique, syntaxique et lexical désigné par la référence générale 2. Le système 2 est ici réalisé, à titre d'exemple, à partir d'un ordinateur conventionnel équipé d'un logiciel de traitement de texte conventionnel et d'un correcteur sémantique, syntaxique et lexical 8.

Le logiciel de traitement de texte 6 forme ici un exemple d'un moyen d'acquisition d'un texte numérique dactylographié complet à corriger. Ce texte complet est formé d'une succession d'expressions.

L'ordinateur comporte une interface homme/machine 12 associée à une unité centrale 14.

L'interface homme/machine 12 comporte, par exemple :

- un écran vidéo 20,
- un clavier 22 équipé d'une touche 24 d'activation d'un module de sélection du correcteur 8,
- un dispositif de pointage 26, tel que, par exemple, une souris,
- des moyens d'acquisition d'un signal acoustique prononcé ou dicté par un utilisateur, tel que, par exemple, un microphone 28, et
- au moins un haut-parleur 30.

L'unité centrale 14 est formée à partir d'un calculateur électronique programmable conventionnel apte à exécuter le logiciel 6 de traitement de texte.

Le correcteur 8 est apte à corriger des expressions erronées acquises à l'aide du logiciel 6. A cet effet il comporte :

- un module 40 de sélection d'une expression erronée en réponse à l'enfoncement de la touche 24,
- un module 42 d'établissement automatique d'une liste comportant plusieurs expressions susceptibles d'être utilisées pour corriger une expression erronée,
- un module 44 d'interaction vocale pour sélectionner dans cette liste l'expression à utiliser pour corriger l'expression erronée,

- un module 48 de synthèse vocale propre à transformer un texte et chaque expression dactylographiée numérique de ce texte en un signal acoustique restitué par l'intermédiaire des haut-parleurs 30 de manière à être intelligible par l'utilisateur.

De manière à convertir un signal acoustique en un texte dactylographié numérique et vice-versa, les modules 44 et 48 utilisent des techniques connues telles que celles décrites dans : Tubach J.P & al. (1989) « La parole et son traitement automatique », Masson. Paris. En particulier, la technique utilisée ici fait appel à des modèles de paroles conventionnels tels que ceux définis dans l'ouvrage précédent.

Une mémoire 52 est associée à l'unité centrale 14.

La mémoire 52 comporte une base 54 préétablie de règles de correction d'expressions erronées. Cette base 54 est destinée à être utilisée par le module 42 pour établir à partir d'une expression erronée la liste d'expressions susceptibles de corriger cette expression erronée.

La mémoire 52 comporte également une base 56 préétablie de règles de détection d'erreurs permettant au correcteur 8 de détecter automatiquement les expressions erronées présentes dans le texte acquis par le logiciel 6. Ici, les bases 54 et 56 sont chacune divisées en une première et une seconde parties. La première partie comporte des règles adaptées à tout type d'utilisateur. A l'inverse, la seconde partie comporte des règles spécialement établies pour un utilisateur donné. Ainsi, chaque seconde partie est associée à un identifiant de l'utilisateur du correcteur 8. A titre d'exemple, ces secondes parties comporteront des règles permettant de détecter et de corriger la substitution d'un mot correctement orthographié par un autre mot correctement orthographié. Par exemple, ici la base 56 comporte une règle de détection associée à un utilisateur α consistant à détecter le mot « lieu » et une règle de correction associée à ce même utilisateur dans la base 54 consistant à proposer le mot « lion » pour corriger le mot « lieu ».

Ici, le correcteur 8 est réalisé sous la forme d'un programme d'ordinateur exécutable par le calculateur électronique de l'unité centrale 14. A cet effet, la mémoire 52 comporte également des instructions pour l'exécution des procédés des figures 2 et 3.

Un premier mode de fonctionnement du système 2 va maintenant être décrit en regard du procédé de la figure 2 dans le cas particulier de l'utilisateur α.

Initialement, lors d'une étape 70 d'initialisation du correcteur 8, l'utilisateur α s'identifie auprès du correcteur 8. En fonction de l'utilisateur ainsi identifié, le correcteur 8 sélectionne lors de la même étape, les secondes parties des bases 54 et 56 correspondantes à utiliser.

Ensuite, l'utilisateur α saisit un texte à l'aide du clavier 22. Ce texte est acquis, lors d'une étape 72, par le logiciel 6 sous la forme d'un texte dactylographié numérique.

Une fois que le texte complet à corriger a été acquis par le logiciel 6, le module 48 commence à relire l'ensemble du texte acquis lors d'une étape 74.

Lorsque l'utilisateur entend une expression erronée, il enfonce la touche 24. En réponse à l'enfoncement de la touche 24, le module 40 sélectionne, lors d'une étape 76, l'expression actuellement lue par le module 48.

En réponse à cette sélection, le module 42 établit automatiquement, lors d'une étape 78, à partir de l'expression sélectionnée et à l'aide des règles de la base 54 une liste d'expressions susceptibles d'être utilisées pour corriger l'expression sélectionnée. Par exemple, si l'expression sélectionnée est : "le lieu est au zoo", la liste établie comporte l'expression "le lion est au zoo" ou "lion".

Ensuite, lors d'une étape 80, le module 44 d'interaction vocale construit pour chacune des expressions de la liste établie lors de l'étape 78 un modèle de parole.

Ensuite, lors d'une étape 82, le correcteur 8 présente à l'utilisateur l'expression qu'il a sélectionnée comme étant incorrecte. Par exemple, lors de cette étape 82, l'expression sélectionnée est mise en évidence sur l'écran 20 et, en parallèle, lue vocalement à l'aide du module 48.

Puis, lors d'une étape 84, la liste construite est présentée par le correcteur 8 à l'utilisateur. Lors de cette étape 84, cette liste est, par exemple, affichée sur l'écran 20 et, en parallèle, chaque expression de cette liste est lue et/ou épelée par le module 48.

A l'issue de cette étape 84, le correcteur 8 procède à une étape 90 d'interaction vocale pour sélectionner, dans la liste présentée, l'expression à utiliser pour corriger l'expression erronée. A cet effet, l'utilisateur est invité à dicter ou à prononcer dans le microphone 28 l'expression correcte. Le module 44 procède alors à une opération 92 d'acquisition du signal acoustique correspondant puis à une opération 94 de construction d'un modèle de parole pour l'expression dictée dans le microphone 28. Le modèle de parole ainsi construit lors de l'opération 94 est alors comparé, lors d'une opération 96, à chaque modèle de parole établi lors de l'étape 80. Cette comparaison est réalisée de manière à identifier quel est parmi les différents modèles de paroles construits lors de l'étape 80 celui qui ressemble le plus au modèle de parole construit lors de l'opération 94.

Enfin, lors d'une opération 98, le module 44 sélectionne automatiquement l'expression de la liste dont le modèle de parole est le plus ressemblant à celui construit lors de l'opération 94.

Dès lors, l'expression ainsi sélectionnée est utilisée par le correcteur 8, lors d'une étape 100, pour remplacer l'expression erronée.

Les étapes 76 à 100 sont alors réitérées pour l'expression suivante sélectionnée par l'utilisateur en tant qu'expression erronée.

Dans ce premier mode de fonctionnement, le correcteur 8 ne détecte pas lui-même les expressions erronées, ce travail étant réalisé par l'utilisateur lorsque celui-ci enfonce la touche 24.

Un second mode de fonctionnement du système 2 va maintenant être décrit en regard du procédé de la figure 3.

Dans la figure 3, contrairement au procédé de la figure 2, le correcteur 8 détecte lui-même les expressions erronées à l'aide de la base de règles 56 de sorte que dans ce mode de fonctionnement, l'utilisateur n'a plus besoin d'utiliser la touche 24 ni le module de sélection 40 associé à cette touche.

Sur l'organigramme de la figure 3, les étapes ou opérations qui sont identiques à celles de la figure 2 portent les mêmes références.

Le procédé de la figure 3 commence par les étapes 70 et 72. Ensuite, lors d'une étape 110, le correcteur sélectionne automatiquement une

expression erronée dans le texte acquis lors de l'étape 72. A cet effet, le correcteur utilise la base 56 de règles de détection d'expressions erronées et plus particulièrement la seconde partie de cette base spécifique à l'utilisateur α.

Ensuite, le correcteur 8 procède aux étapes 78, 80, 82, 84, 90 et 100 comme décrit en regard de la figure 2.

Le mode de fonctionnement de la figure 2 présente l'avantage d'être plus simple à réaliser. En effet détecter des expressions erronées de façon automatique est compliqué.

Le fait d'établir dans un premier temps une liste limitée d'expressions correctes possibles et ensuite de rechercher uniquement dans cette liste l'expression erronée dictée lors de l'opération 92 par l'utilisateur augmente considérablement la probabilité d'identifier correctement à l'aide d'une interaction vocale l'expression dictée par l'utilisateur. Le fonctionnement du correcteur s'en trouve donc amélioré. En effet, contrairement, par exemple, au cas où l'utilisateur utilise un logiciel de dictée vocale, l'expression dictée ici n'est pas comparée à l'ensemble des expressions possibles dans une langue donnée, mais simplement à un sous-ensemble limité de ces expressions possibles. Typiquement, la liste établie lors de l'étape 78 est limitée à 5, 10 ou 30 expressions au maximum.

Enfin, le fait de comparer lors de l'opération 96 des modèles de paroles entre eux accroît également l'efficacité de l'interaction vocale. Ici, contrairement aux procédés de reconnaissance vocale, on évite de transformer le signal acoustique acquis lors de l'opération 92 en une chaîne de caractères. Or, lors de cette opération de transformation en chaîne de caractères des erreurs risquent de se produire. On évite donc ainsi une source d'erreur et on augmente la probabilité de reconnaître correctement une expression dictée, ce qui rend plus performant le correcteur 8.

Le système 2 a été décrit ici dans le cas particulier où le module d'acquisition du texte à corriger est un logiciel de traitement de texte. En variante, d'autres logiciels aptes à éditer du texte peuvent être utilisés à sa place, tels que par exemple des logiciels de messagerie électronique ou de dictée vocale.

Le système a également été décrit dans le cas particulier où celui-ci est adapté pour mettre en œuvre les procédés des figures 2 et 3. En variante, le système 2 est adapté pour mettre en œuvre uniquement l'un des procédés des figures 2 et 3.

Le système a été décrit dans le cas particulier d'un correcteur sémantique, syntaxique et lexical. En variante, le correcteur est uniquement adapté pour corriger un ou plusieurs types d'erreurs choisis dans l'ensemble composé des erreurs sémantiques, syntaxiques ou lexicales.

REVENDICATIONS

1. Correcteur sémantique, syntaxique et/ou lexical électronique pour faciliter la correction sémantique et/ou syntaxique et/ou lexicale d'une expression erronée dans un texte numérique, ce correcteur comportant :

- un module (42) d'établissement d'expressions apte à établir automatiquement une liste d'au moins deux expressions correctes propres chacune à remplacer l'expression erronée, cette liste étant établie à partir de l'expression erronée et à l'aide d'une base préétablie de règles de corrections,

caractérisé en ce qu'il comporte

- un module (44) d'interaction vocale pour sélectionner dans cette liste l'expression correcte destinée à remplacer l'expression erronée dans le texte numérique.

2. Correcteur selon la revendication 1, caractérisé en ce que le module (44) d'interaction vocale est apte à :

- acquérir une expression dictée par un utilisateur,

- comparer l'expression dictée à chaque expression de ladite liste pour déterminer l'expression de cette liste ressemblant phonétiquement le plus à l'expression dictée, et

- sélectionner automatiquement l'expression de la liste la plus ressemblante à l'expression dictée.

3. Correcteur selon la revendication 2, caractérisé en ce que le module (44) d'interaction vocale est apte :

- à construire un premier modèle de parole pour chaque expression de ladite liste et un second modèle de parole pour l'expression dictée, et

- à comparer l'expression dictée à chaque expression de ladite liste en comparant le second modèle de parole à chacun des premiers modèles de parole construits.

4. Correcteur selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte :

- un module (48) de synthèse vocale propre à lire le texte numérique,

- un module (40) de sélection de l'expression du texte actuellement lue par le module de synthèse en réponse à un signal d'activation, et

- un dispositif (24) de génération dudit signal d'activation sous la commande d'un utilisateur, et

- en ce que le module (42) d'établissement est apte à utiliser l'expression sélectionnée par le module de sélection en tant qu'expression erronée pour générer les expressions de ladite liste.

5. Procédé d'interaction vocale pour faciliter la correction sémantique, syntaxique et/ou lexicale d'une expression erronée dans un texte numérique, ce procédé comportant :

- une étape (78) automatique d'établissement d'une liste limitée d'expressions correctes propres chacune à remplacer l'expression erronée, cette liste étant établie à partir de l'expression erronée et à l'aide d'une base préétablie de règles de corrections de manière à former un sous ensemble limité parmi l'ensemble des expressions possibles dans une langue donnée,

- une étape (90) d'interaction vocale pour sélectionner dans cette liste l'expression correcte destinée à remplacer l'expression erronée dans le texte numérique, cette étape comportant les opérations consistant à :

- acquérir (en 92) une expression dictée par un utilisateur,

- comparer (en 96) l'expression dictée à chaque expression de ladite liste pour déterminer l'expression de cette liste ressemblant phonétiquement le plus à l'expression dictée, et

- sélectionner (en 98) automatiquement l'expression de la liste la plus ressemblante à l'expression dictée.

6. Procédé selon la revendication 5, caractérisé en ce que l'étape d'interaction vocale comporte :

- une opération (80, 84) de construction d'un premier modèle de parole pour chaque expression de ladite liste et d'un second modèle de parole pour l'expression dictée, et

- en ce que l'opération (90) de comparaison est réalisée en comparant le second modèle de parole à chacun des premiers modèles de parole construits.

7. Procédé selon l'une quelconque des revendications 5 à 6, caractérisé en ce qu'il comporte :

- une étape (74) de synthèse vocale pour lire le texte numérique,

- une étape (76) de sélection de l'expression du texte actuellement lue par le module de synthèse en réponse à un signal d'activation, et

- une étape (76) de génération dudit signal d'activation sous la commande d'un utilisateur, et

- en ce que lors de l'étape d'établissement (78), l'expression sélectionnée lors de l'étape de sélection est utilisée en tant qu'expression erronée pour générer les expressions de ladite liste.

8. Support (52) d'enregistrement d'informations, caractérisé en ce qu'il comporte des instructions pour l'exécution d'un procédé d'interaction vocale conforme à l'une quelconque des revendications 5 à 7, lorsque ces instructions sont exécutées par un calculateur électronique.

9. Programme d'ordinateur, caractérisé en ce qu'il comporte des instructions pour l'exécution d'un procédé d'interaction vocale conforme à l'une quelconque des revendications 5 à 7, lorsque ledit programme est exécuté par un calculateur électronique.

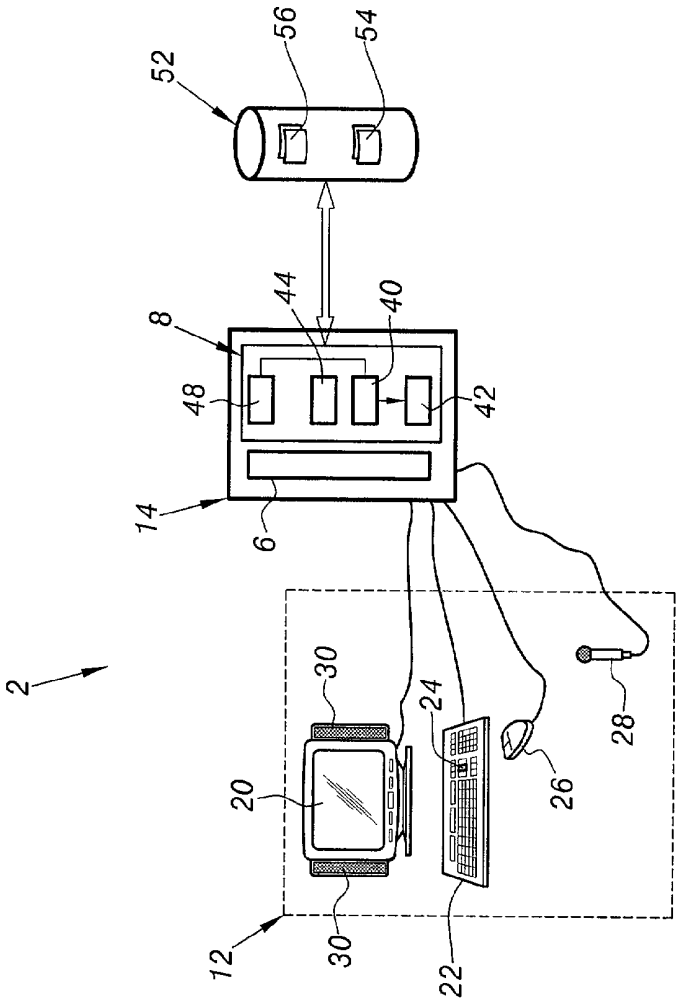


FIG.1

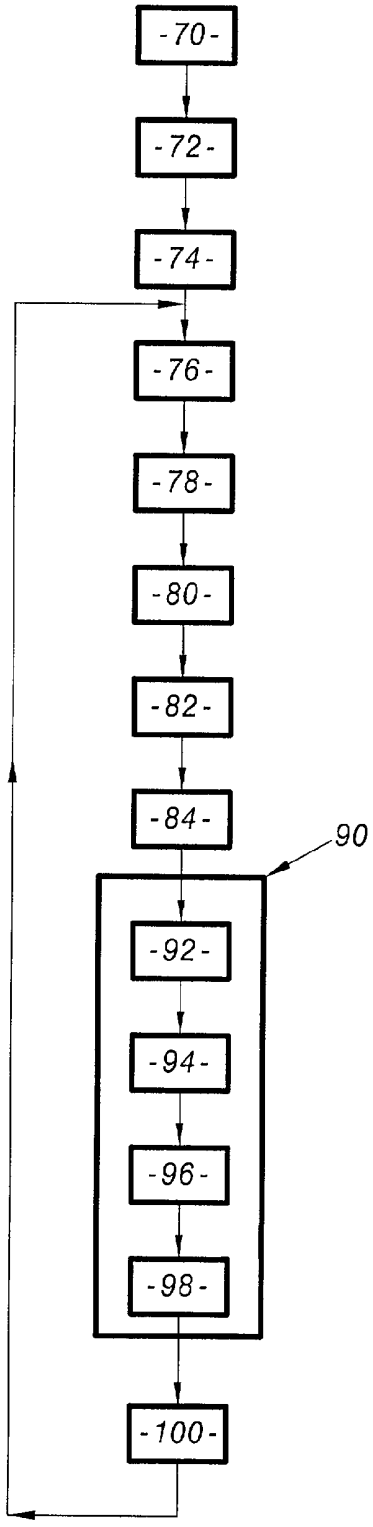

-70-
-72-
-74-
-76-
-78-
-80-
-82-
-84-
90
-92-
-94-
-96-
-98-
-100-

FIG. 2

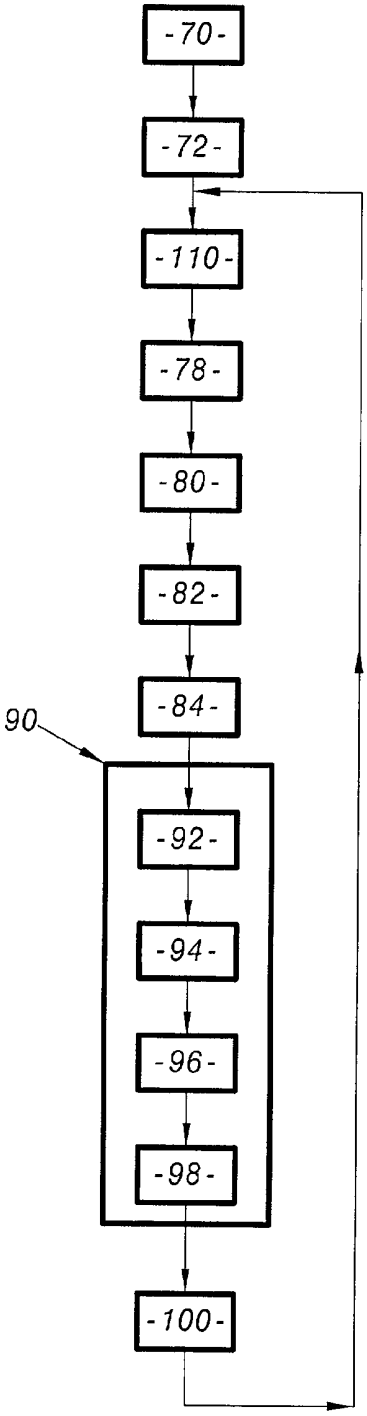

-70-
-72-
-110-
-78-
-80-
-82-
-84-
90
-92-
-94-
-96-
-98-
-100-

FIG. 3

INSTITUT NATIONAL DE LA PROPRIETE INDUSTRIELLE

RAPPORT DE RECHERCHE PRÉLIMINAIRE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

N° d'enregistrement national

FA 648933
FR 0402650

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
Y	GREGOR P ET AL: "AN EMPIRICAL INVESTIGATION OF WAYS IN WHICH SOME OF THE PROBLEMS ENCOUNTERED BY SOME DYSLEXICS MABY BE ALLEVIATED USING COMPUTER TECHNIQUES" THE FOURTH INTERNATIONAL ACM CONFERENCE ON ASSISTIVE TECHNOLOGIES. ARLINGTON, VA, NOV. 13 - 15, 2000, INTERNATIONAL ACM CONFERENCE ON ASSISTIVE TECHNOLOGIES, NEW YORK, NY : ACM, US, vol. CONF. 4, 13 novembre 2000 (2000-11-13), pages 85-91, XP000994001 ISBN: 1-58113-314-8 * page 87, colonne de droite, alinéa 2 * * page 89, colonne de gauche, dernier alinéa * * page 89, colonne de droite, dernier alinéa - page 90, colonne de gauche, alinéa 1 *	1,2,5,8, 9	G06F17/27 G10L13/08
	-----		DOMAINES TECHNIQUES RECHERCHÉS (Int.CL.7)
Y	INTERNATIONAL BUSINESS MACHINES CORPORATION: "Voice-activated speller" RESEARCH DISCLOSURE, KENNETH MASON PUBLICATIONS, HAMPSHIRE, GB, vol. 441, no. 138, janvier 2001 (2001-01), XP007127527 ISSN: 0374-4353 * le document en entier *	1,2,5,8, 9	G06F
	----- -/--		

Date d'achèvement de la recherche	Examinateur
31 août 2004	Abram, R

CATÉGORIE DES DOCUMENTS CITÉS

X : particulièrement pertinent à lui seul
Y : particulièrement pertinent en combinaison avec un autre document de la même catégorie
A : arrière-plan technologique
O : divulgation non-écrite
P : document intercalaire

T : théorie ou principe à la base de l'invention
E : document de brevet bénéficiant d'une date antérieure à la date de dépôt et qui n'a été publié qu'à cette date de dépôt ou qu'à une date postérieure.
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INSTITUT NATIONAL DE LA PROPRIETE INDUSTRIELLE

RAPPORT DE RECHERCHE PRÉLIMINAIRE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

N° d'enregistrement national

FA 648933
FR 0402650

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
A	ANONYMOUS: "Audio Highlighting Tool for Proofreading Dictated Text" RESEARCH DISCLOSURE, KENNETH MASON PUBLICATIONS, HAMPSHIRE, GB, vol. 42, no. 418, 1 février 1999 (1999-02-01), page 1, XP002262763 ISSN: 0374-4353 * le document en entier *	1-9	
A	SIEGEL R P: "FUZZY LOGIC SPELLING CHECKER" XEROX DISCLOSURE JOURNAL, XEROX CORPORATION. STAMFORD, CONN, US, vol. 20, no. 3, 1 mai 1995 (1995-05-01), pages 289-290, XP000512647 * le document en entier *	1-9	
A	EP 1 321 926 A (DRAGON SYSTEMS INC) 25 juin 2003 (2003-06-25) * revendications 1-5 *	1-9	DOMAINES TECHNIQUES RECHERCHÉS (Int.CL.7)
A	US 2003/157968 A1 (BOMAN ET AL.) 21 août 2003 (2003-08-21) * alinéa [0025] - alinéa [0027] *	4,7	

1

Date d'achèvement de la recherche	Examinateur
31 août 2004	Abram, R

CATÉGORIE DES DOCUMENTS CITÉS

X : particulièrement pertinent à lui seul
Y : particulièrement pertinent en combinaison avec un autre document de la même catégorie
A : arrière-plan technologique
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D : cité dans la demande
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ANNEXE AU RAPPORT DE RECHERCHE PRÉLIMINAIRE RELATIF A LA DEMANDE DE BREVET FRANÇAIS NO. FR 0402650 FA 648933

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche préliminaire visé ci-dessus.
Les dits membres sont contenus au fichier informatique de l'Office européen des brevets à la date du 31-08-2004
Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets, ni de l'Administration française

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
EP 1321926 A	25-06-2003	US 6064959 A	16-05-2000
		EP 1321926 A1	25-06-2003
		EP 0867858 A2	30-09-1998
		US 6601027 B1	29-07-2003
US 2003157968 A1	21-08-2003	AUCUN	

EPO FORM P0465

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82

PUB-NO: FR002867583A1
DOCUMENT-IDENTIFIER: FR 2867583 A1
TITLE: Semantic, syntax and lexical electronic proof reader for e.g. dyslexic person, has vocal interaction module to select expression matching most phonetically with dictated expression automatically and replace wrong expression in digital text
PUBN-DATE: September 16, 2005
PATENT-FAMILY-ID: 34896530

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VESSIERE GILLES RENE	FR

APPL-NO: FR 0402650 A
APPL-DATE: March 15, 2004

PRIORITY-DATA:

PRIORITY-NO	PRIORITY-APPL-DATE
FR 0402650 A	20040315

CPC-CURRENT:

TYPE	CPC/DATE
CPCI	G10L15/26 20130101
CPCA	G10L2015/025 20130101

INT-CL-CURRENT:

TYPE	IPC/DATE
IPCP	G06F17/27 20060101
IPCS	G10L15/26 20060101
IPCS	G10L13/08 20060101
IPCN	G10L15/02 20060101
IPCN	G09B19/04 20060101

REF-CITED:

PHASE-COUNTRY/NUMBER/KIND/DATE-NPL-INFO

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SIEGEL R P: "FUZZY LOGIC SPELLING CHECKER", XEROX DISCLOSURE JOURNAL, XEROX CORPORATION. STAMFORD, CONN, US, vol. 20, no. 3, 1 May 1995 (1995-05-01), pages 289 - 290, XP000512647

ANONYMOUS: "Audio Highlighting Tool for Proofreading Dictated Text", RESEARCH DISCLOSURE, KENNETH MASON PUBLICATIONS, HAMPSHIRE, GB, vol. 42, no. 418, 1 February 1999 (1999-02-01), pages 1, XP002262763, ISSN: 0374-4353

INTERNATIONAL BUSINESS MACHINES CORPORATION: "Voice-activated speller", RESEARCH DISCLOSURE, KENNETH MASON PUBLICATIONS, HAMPSHIRE, GB, vol. 441, no. 138, January 2001 (2001-01-01), XP007127527, ISSN: 0374-4353

GREGOR P ET AL: "AN EMPIRICAL INVESTIGATION OF WAYS IN WHICH SOME OF THE PROBLEMS ENCOUNTERED BY SOME DYSLEXICS MABY BE ALLEVIATED USING COMPUTER TECHNIQUES", THE FOURTH INTERNATIONAL ACM CONFERENCE ON ASSISTIVE TECHNOLOGIES. ARLINGTON, VA, NOV. 13 - 15, 2000, INTERNATIONAL ACM CONFERENCE ON ASSISTIVE TECHNOLOGIES, NEW YORK, NY : ACM, US, vol. CONF. 4, 13 November 2000 (2000-11-13), pages 85 - 91, XP000994001, ISBN: 1-58113-314-8

ABSTRACT:

The reader has a vocal interaction module (44) that compares an expression dictated by a user with expressions of a correct expression list to determine an expression of the list which matches most phonetically with the dictated expression. The module selects the determined expression automatically from the list. The module replaces a wrong expression in a digital text. Independent claims are also included for the following: (A) a process for vocal interaction for facilitating semantic, syntax and/or lexical correction of a wrong expression in a digital text (B) an information storage medium comprising instructions for the execution of a vocal interaction process (C) a computer program comprising instructions for the execution of a vocal interaction process.

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DESCRIPTION FR2867583

The invention relates to a semantic, syntactic and / or lexical corrector,

a method of voice interaction, a recording medium and a computer program for its implementation.

More specifically, the invention relates to a corrector comprising an expression establishment module capable of automatically establishing a list of at least two correct expressions each suitable for replacing the erroneous expression, this list being established from the expression erroneous and using a pre-established base of correction rules.

Here, the term expression will be used to denote either a word, a group of words in a sentence or an entire sentence.

Today there are many syntax and / or lexical proofreaders associated with different existing word processing software. One of the best known of these correctors is, for example, the one used in Microsoft's Word word processor.

Typically, these correctors automatically detect a wrong expression, underline it and display a list of expressions that can be used to correct the wrong expression. The user must then click on one of these expressions in the list to select it. The selected expression is then used to correct the incorrect expression.

These correctors are practical and suitable for most users. However, such correctors are not easy to use for a dyslexic or dysorthographic person. Indeed, these people often have difficulty reading the expressions in a list of expressions so that it is difficult for them to select from the list of expressions proposed the correct expression to be used to correct the erroneous expression. There is therefore currently no corrector suitable for dyslexic people to assist them in correcting a text.

The invention aims to remedy this shortcoming by proposing a semantic, syntactic and / or lexical corrector adapted to dyslexic or dysorthographic people to help them in the semantic, syntactic and / or lexical correction of an incorrect expression in a digital text.

The subject of the invention is therefore a semantic, syntactic and / or lexical corrector, characterized in that it includes a voice interaction module for selecting from this list the correct expression intended to replace the erroneous expression in the digital text.

Unlike known proofreaders, this one uses voice to select an expression from the list of expressions that can be used to correct the erroneous expression. Thus, even a dyslexic or dysorthographic person suffering from reading difficulties can correctly and easily select from the list the expression which must replace the erroneous expression.

According to other additional characteristics taken alone or in combination, this corrector according to the invention is characterized in that: - the voice interaction module is able to: - acquire an expression dictated by a user, - compare the expression dictation to each expression of said list to determine the expression of this list which most phonetically resembles the dictated expression, and automatically selects the expression of the list most similar to the dictated expression; - constructing a first speech model for each expression in said list and a second speech model for the dictated expression, and - comparing the dictated expression with each expression in said list by comparing the second speech model with each of the first speech models constructed.

- it includes: - a voice synthesis module suitable for reading digital text, - a module for selecting the expression of the text currently read by the synthesis module in response to an activation signal, and - a generation device of said activation signal under the control of a user, and - in that the establishment module is able to use the expression selected by the selection module as an erroneous expression to generate the expressions in said list.

The subject of the invention is also a method of voice interaction to facilitate the semantic, syntactic and / or lexical correction of an erroneous expression in a digital text, this method comprising: - an automatic step of establishing a limited list correct expressions each suitable for replacing the erroneous expression, this list being established from the erroneous expression and using a pre-established base of correction rules so as to form a limited subset among the set possible expressions in a given language, - a voice interaction step to select from this list the correct expression intended to replace the erroneous expression in the digital text, this step comprising the operations consisting in: acquiring an expression dictated by a user, - compare the expression dictated with each expression of said list to determine the expression of this list that most closely resembles to the dictated expression, and - automatically select the expression from the list most similar to the dictated expression.

The subject of the invention is also an information recording medium and a computer program, characterized in that they include instructions for the execution of a method according to the invention, when these instructions are executed by an electronic computer.

The invention will be better understood on reading the description which follows given solely by way of example and made with reference to the drawings in which: - Figure 1 is a schematic illustration of a syntactic and lexical correction system in accordance to the invention, - Figure 2 is a flow diagram of a method for facilitating syntactic and lexical correction according to the invention, and - Figure 3 is a flow diagram of another embodiment of the method of Figure 2 .

FIG. 1 represents a semantic, syntactic and lexical correction system designated by the general reference 2. System 2 is here produced, by way of example, from a conventional computer equipped with conventional word processing software and a semantic, syntactic and lexical corrector 8.

The word processing software 6 here forms an example of a means of acquiring a complete typed digital text to be corrected. This complete text is made up of a succession of expressions.

The computer comprises a man / machine interface 12 associated with a central unit 14.

The man / machine interface 12 comprises, for example: - a video screen 20, a keyboard 22

equipped with a key 24 for activating a selection module of the corrector 8, - a pointing device 26, such as, for example, a mouse, - means for acquiring an acoustic signal pronounced or dictated by a user, such as, for example, a microphone 28, and - at least one speaker 30.

The central unit 14 is formed from a conventional programmable electronic computer capable of executing the word processing software 6.

Corrector 8 is able to correct erroneous expressions acquired using software 6. To this end, it comprises: - a module 40 for selecting an erroneous expression in response to the pressing of the key 24, - a module 42 for automatically establishing a list comprising several expressions capable of being used to correct an erroneous expression 30, a voice interaction module 44 for selecting from this list the expression to be used to correct the erroneous expression, a speech synthesis module 48 suitable for transforming a text and each numerically typed expression of this text in an acoustic signal reproduced via the speakers 30 so as to be intelligible to the user.

In order to convert an acoustic signal into a digital typed text and vice versa, modules 44 and 48 use known techniques such as those described in: Tubach J.P & al. (1989) Speech and its automatic processing, Masson. Paris. In particular, the technique used here uses conventional speech models such as those defined in the previous work.

A memory 52 is associated with the central unit 14.

The memory 52 comprises a pre-established base 54 of rules for correcting erroneous expressions. This base 54 is intended to be used by the module 42 to establish, from an erroneous expression, the list of expressions capable of correcting this erroneous expression.

The memory 52 also includes a pre-established base 56 of error detection rules allowing the corrector 8 to automatically detect the erroneous expressions present in the text acquired by the software 6. Here, the bases 54 and 56 are each divided into first and second parts. The first part includes rules adapted to any type of user. Conversely, the second part includes rules specially established for a given user. Thus, each second part is associated with an identifier of the user of the corrector 8. By way of example, these second parts will include rules making it possible to detect and correct the substitution of a word correctly spelled by another word correctly spelled. For example, here the base 56 comprises a detection rule associated with a user a consisting in detecting the word place and a correction rule associated with this same user in the base 54

consisting in proposing the word lion to correct the word place.

Here, the corrector 8 is produced in the form of a computer program executable by the electronic computer of the central unit 14. To this end, the memory 52 also includes instructions for the execution of the methods of FIGS. 2 and 3.

A first mode of operation of the system 2 will now be described with reference to the method of FIG. 2 in the particular case of the user a.

Initially, during a step 70 of initialization of the corrector 8, the user identifies himself with the corrector 8. Depending on the user thus identified, the corrector 8 selects during the same step, the second parts of the corresponding bases 54 and 56 to be used.

Then, the user has entered a text using the keyboard 22. This text is acquired, during a step 72, by the software 6 in the form of a digital typed text.

Once the complete text to be corrected has been acquired by the software 6, the module 48 begins to re-read all of the text acquired during a step 74.

When the user hears an incorrect expression, he presses the key 24. In response to pressing the key 24, the module 40 selects, during a step 76, the expression currently read by the module 48.

In response to this selection, the module 42 automatically establishes, during a step 78, from the selected expression and using the rules of the base 54 a list of expressions capable of being used to correct the selected expression. For example, if the expression selected is: "the place is at the zoo", the list established includes the expression "the lion is at the zoo" or "lion".

Then, during a step 80, the voice interaction module 44 constructs a speech model for each of the expressions in the list established during step 78.

Then, during a step 82, the corrector 8 presents the user with the expression which he has selected as being incorrect. For example, during this step 82, the selected expression is

highlighted on the screen 20 and, in parallel, read by voice using the module 48.

Then, during a step 84, the constructed list is presented by the corrector 8 to the user. During this step 84, this list is, for example, displayed on the screen 20 and, in parallel, each expression of this list is read and / or spelled by the module 48.

At the end of this step 84, the corrector 8 proceeds to a voice interaction step 90 to select, from the list presented, the expression to be used to correct the erroneous expression. To this end, the user is invited to dictate or pronounce the correct expression in the microphone 28. The module 44 then proceeds to an operation 92 for acquiring the corresponding acoustic signal then to an operation 94 for building a speech model for the expression dictated in the microphone 28. The speech model thus constructed during operation 94 is then compared, during operation 96, with each speech model established during step 80. This comparison is carried out so as to identify which of the different speech models constructed during step 80 is the one that most closely resembles the speech model constructed during operation 94.

Finally, during an operation 98, the module 44 automatically selects the expression from the list whose speech model is most similar to that constructed during the operation 94.

Consequently, the expression thus selected is used by the corrector 8, during a step 100, to replace the erroneous expression.

Steps 76 to 100 are then repeated for the next expression selected by the user as an erroneous expression.

In this first operating mode, the corrector 8 does not itself detect the erroneous expressions, this work being carried out by the user when the latter presses the key 24.

A second mode of operation of the system 2 will now be described with reference to the method of FIG. 3.

In FIG. 3, unlike the method of FIG. 2, the corrector 8 itself detects the erroneous expressions using the rule base 56 so that in this operating mode, the user no longer needs using the key 24 or

the selection module 40 associated with this key.

In the flow diagram of FIG. 3, the steps or operations which are identical to those of FIG. 2 have the same references.

The process of FIG. 3 begins with steps 70 and 72. Then, during a step 110, the corrector automatically selects an incorrect expression in the text acquired during step 72. For this purpose, the corrector uses the base 56 of rules for detecting erroneous expressions and more particularly the second part of this database specific to the user a.

Then, the corrector 8 proceeds to steps 78, 80, 82, 84, 90 and 100 as described with reference to FIG. 2.

The operating mode of FIG. 2 has the advantage of being simpler to carry out. Indeed, detecting erroneous expressions automatically is complicated.

The fact of first establishing a limited list of possible correct expressions and then of only searching in this list for the incorrect expression dictated during operation 92 by the user considerably increases the probability of correctly identifying the Using voice interaction the expression dictated by the user. The operation of the corrector is therefore improved. In fact, unlike, for example, if the user uses voice dictation software, the expression dictated here is not compared to the set of possible expressions in a given language, but simply to a subset limited of these possible expressions. Typically, the list established during step 78 is limited to 5, 10 or 30 expressions at most.

Finally, the fact of comparing, during operation 96, speech models with each other also increases the efficiency of the voice interaction. Here, unlike voice recognition methods, we avoid transforming the acoustic signal acquired during operation 92 into a character string. However, during this operation of transformation into a character string, errors are likely to occur. We thus avoid a source of error and we increase the probability of correctly recognizing a dictated expression, which makes the corrector 8 more efficient.

The system 2 has been described here in the particular case where the module for acquiring the text to be corrected is word processing software. As a variant, other software capable of editing

text can be used in its place, such as for example electronic messaging or voice dictation software.

The system has also been described in the particular case where it is adapted to implement the methods of FIGS. 2 and 3. As a variant, the system 2 is suitable for implementing only one of the methods of FIGS. 2 and 3.

The system has been described in the particular case of a semantic, syntactic and lexical corrector. As a variant, the corrector is only suitable for correcting one or more types of errors chosen from the set composed of semantic, syntactic or lexical errors.

Electronic Acknowledgement Receipt

EFS ID:	38846384
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Mark Andrew Patrick/Susan Trader
Filer Authorized By:	Mark Andrew Patrick
Attorney Docket Number:	62KC-298931
Receipt Date:	12-MAR-2020
Filing Date:	20-MAY-2019
Time Stamp:	13:31:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	62KC-298931_Transmittal-Letter.pdf	498469 ea97790984901a6d3b58379db86b82bf11422258	no	1

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form.pdf	1053202 1f005a1523a91060cd62991960f3919cb4869668	no	4
Warnings:					
Information:					
3	Foreign Reference	62KC-298931-Foreign-001.pdf	1071833 45c885010dfc720aff6d45196812ece9340f1e59	no	28
Warnings:					
Information:					
		Total Files Size (in bytes):	2623504		

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	16/417,178
	Filing Date	05/20/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
Page 1 of 1	**Matter Number**	62KC-298931

GENERAL

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.

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.

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.

TIMING

In accordance with 37 CFR 1.97(c), this Information Disclosure Statement is being filed after the period specified in 37 CFR 1.97(b) and before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application.

CERTIFICATION STATEMENT

No item of information contained in this information disclosure statement was cited in any 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 this information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this information disclosure statement.

FEE

No fee is required. This Information Disclosure Statement is being filed in accordance with 37 CFR 1.97(c), and is accompanied by the certification statement of 37 CFR 1.97(e)(2).

ADDITIONAL COMMENTS

SIGNATURE

Signature	/ Mark A. Patrick /	**Date**	2020-03-12
Name	Mark A. Patrick	**Registration Number**	72,958

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/417,178	Filing Date 05/20/2019	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ 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).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	03/18/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 20	= 10		x $100 =	1000
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1		x $460 =	460
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	1460

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/ANTHONY TYSON/
*** 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 number found in the appropriate box in column 1.	

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

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

IN THE UNITED STATES PATENT & TRADEMARK OFFICE			
In Re Patent Application Of:	Larry BALDWIN *et al.*	**Attorney Docket No.:**	62KC-298931
Serial No.:	16/417,178	**Confirmation No.:**	8276
Filing Date:	May 20, 2019	**Examiner:**	Eric Yen
		Art Unit:	2658

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

RESPONSE TO NON-FINAL OFFICE ACTION MAILED DECEMBER 18, 2019

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

Submitted: **March 18, 2020**

Dear Sir:

In response to the Non-Final Office Action mailed **December 18, 2019**, please amend the above-identified application as follows:

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

Remarks begin on page **11** 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-298931**).

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. **(Currently Amended)** A computer-implemented method of ~~facilitating~~ generating natural language system responses adapted based on a user's manner of speaking in a natural language utterance, 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:

receiving, by the computer system, a user input comprising a natural language utterance;

recognizing, by the computer system, one or more words or phrases from the natural language utterance;

identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

identifying, by the computer system, a manner in which the [[first]] natural language utterance was spoken based on short-term knowledge and long-term knowledge about how a user utters a request; and

generating, by the computer system, a response to the natural language utterance based on the interpretation and adapting the response based on the identified manner in which the [[first]] natural language utterance was spoken.

2. **(Currently Amended)** The method of claim 1, wherein the manner in which the [[first]] natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

3. (**Currently Amended**) The method of claim 1, wherein the response comprises a voice response, and wherein ~~generating~~ adapting the voice response to the natural language utterance based on the identified manner comprises varying one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

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

obtaining, by the computer system, contextual signifiers and/or grammatical rules~~; and~~,

~~generating, by the computer system,~~ wherein adapting the response ~~to the natural language utterance~~ based ~~further~~ on the identified manner in which the natural language utterance was spoken comprises using the obtained contextual signifiers and/or grammatical rules to generate sentences for use as response sets to cooperate with the user.

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

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

wherein the manner in which the [[first]] natural language utterance was spoken is identified based on the short-term knowledge.

6. (**Currently Amended**) The method of claim 5, the method further comprising:

accumulating, by the computer system, long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period,

wherein the manner in which the [[first]] natural language utterance was spoken is identified based further on the long-term knowledge.

7. (**Currently Amended**) The method of claim 6, 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 natural language utterance is determined based further on the profile associated with the first user.

8. (**Currently Amended**) The method of claim 1, wherein generating the response to the natural language utterance further comprises:

~~generating, by the computer system,~~ adapting, by the computer system, the response based on a response format associated with the identified manner.

9. (**Original**) The method of claim 1, wherein recognizing the one or more words or phrases from the natural language utterance comprises:

providing, by the computer system, the natural language utterance as an input to a speech recognition engine; and

obtaining, by the computer system, the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

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

causing, by the computer system, the response to the natural language utterance to be provided to the user.

11. (**Currently Amended**) A system for ~~facilitating~~ generating natural language system responses adapted based on a user's manner of speaking in a natural language utterance, 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:

receive a user input comprising a natural language utterance;

recognize one or more words or phrases from the natural language utterance;

identify a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

identify a manner in which the [[first]] natural language utterance was spoken based on short-term knowledge and long-term knowledge about how a user utters a request; and

generate a response to the natural language utterance based on the interpretation and adapt the response based on the identified manner in which the [[first]] natural language utterance was spoken.

12. (**Currently Amended**) The system of claim 11, wherein the manner in which the [[first]] natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

13. (**Currently Amended**) The system of claim 11, wherein the response comprises a voice response, and wherein to ~~generate~~ adapt the voice response to the natural language utterance based on the identified manner, the one or more physical processors are further configured to:

vary one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

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

obtain contextual signifiers and/or grammatical rules~~; and~~,

~~generate~~ wherein to adapt the response ~~to the natural language utterance~~ based ~~further~~ on the identified manner in which the natural language utterance was spoken comprises using the obtained contextual signifiers and/or grammatical rules to generate sentences for use as response sets to cooperate with the user.

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

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

wherein the manner in which the [[first]] natural language utterance was spoken is identified based on the short-term knowledge.

16. **(Currently Amended)** The system of claim 15, wherein the one or more physical processors are further configured to:

accumulate long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period,

wherein the manner in which the [[first]] natural language utterance was spoken is identified based further on the long-term knowledge.

17. **(Currently Amended)** The system of claim 16, 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 natural language utterance is determined based further on the profile associated with the first user.

18. **(Currently Amended)** The system of claim 11, wherein to generate the response to the natural language utterance, the one or more physical processors are configured to:

~~generate~~ adapt the response based on a response format associated with the identified manner.

19. **(Original)** The system of claim 11, wherein to recognize the one or more words or phrases from the natural language utterance, the one or more physical processors are configured to:

provide the natural language utterance as an input to a speech recognition engine; and

obtain the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

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

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

21. **(New)** The method of claim 1, wherein the response comprises a voice response, and wherein adapting the voice response to the natural language utterance based on the identified manner comprises varying one or more of word use and/or jargon of the voice response.

22. **(New)** The method of claim 1, the method further comprising:

adapting the response, by the computer system, to model a conversation, wherein adapting the response to model a conversation comprises adapting the response to have a personality by varying word use.

23. **(New)** The method of claim 1, the method further comprising generating a response that is sensitive to context, what the user already knows about a topic, short-term knowledge and long-term knowledge of user preferences, and words uttered by the user in one or more prior natural language utterances.

24. **(New)** The system of claim 11, wherein the response comprises a voice response, and wherein to adapt the voice response to the natural language utterance based on the identified manner, the one or more physical processors are further configured to:

vary one or more of word use and/or jargon of the voice response.

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

adapt the response to model a conversation, wherein adapting the response to model a conversation comprises adapting the response to have a personality by varying word use.

26. (**New**) The system of claim 11, wherein the one or more physical processors are further configured to generate a response that is sensitive to context, what the user already knows about a topic, short-term knowledge and long-term knowledge of user preferences, and words uttered by the user in one or more prior natural language utterances.

27. (**New**) A computer-implemented method of facilitating natural language system responses adapted based on a user's manner of speaking, 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:

receiving, by the computer system, a user input comprising a natural language utterance;

recognizing, by the computer system, one or more words or phrases from the natural language utterance;

identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

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

accumulating, by the computer system, long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period;

identifying, by the computer system, a manner in which the natural language utterance was spoken based on the short-term knowledge and the long-term knowledge; and

generating, by the computer system, a response to the natural language utterance based on the interpretation and the identified manner in which the natural language utterance was spoken.

28. (**New**) The system of claim 27, 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 context for the natural language utterance is determined based further on the profile associated with the first user.

29. (**New**) A system for facilitating natural language system responses adapted based on a user's manner of speaking, 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:

receive a user input comprising a natural language utterance;

recognize one or more words or phrases from the natural language utterance;

identify a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

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

accumulate long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period;

identify a manner in which the natural language utterance was spoken based on the short-term knowledge and the long-term knowledge; and

generate a response to the natural language utterance based on the interpretation and the identified manner in which the natural language utterance was spoken.

30. (**New**) The system of claim 29, 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 context for the natural language utterance is determined based further on the profile associated with the first user.

REMARKS

In response to the Non-Final Office Action mailed **December 18, 2019** (hereinafter "Office Action"), claims 1-8 and 11-18 have been amended, and claims 21-30 have been newly added. Therefore, claims 1-30 are now pending. Support for the instant amendments and newly added claims is provided throughout the as-filed Specification. Thus, no new matter has been added. In view of the foregoing amendments and following remarks, allowance of all the claims pending in the application is respectfully requested.

EXAMINER INTERVIEW

Applicant thanks Examiner Yen for the courtesy of an examiner interview conducted via telephone on January 22, 2020 (hereinafter "Examiner Interview") and extended to Applicant's representative Mark Patrick (Reg. No. 72,958) to discuss the rejection under 35 U.S.C. § 103 set forth in the Office Action, as well as proposed amendments filed in this response. In compliance with 37 C.F.R. § 1.133 and MPEP § 713.04, a record of the substance of the interview is summarized herein or otherwise incorporated into the following remarks.

DOUBLE PATENTING

Claims 1-20 stand rejected on the ground of non-statutory type double patenting over claims 7-9 and 17-19 of U.S. Patent No. 9,015,049, claims 10 and 11 of U.S. Patent No. 10,297,249, claims 1 and 10 of U.S. Patent No. 8,515,765, and claims 1 and 25 of U.S. Patent No. 8,073,681. *Office Action* at 39. Applicant disagrees with the rejection. However, *solely* in an effort to expedite prosecution, Applicant will consider filing a Terminal Disclaimer once the remaining claim rejections have been withdrawn.

Applicant further notes that the filing of a Terminal Disclaimer to obviate a rejection based on non-statutory type double patenting does not constitute an admission of the propriety of the rejection. *See Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 874 (Fed. Cir. 1991) (indicating that "the filing of a terminal disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither presumption nor estoppel on the merits of the rejection").

CLAIM OBJECTIONS

Claims 1, 2, 5, 6, 11, 12, 15, and 16 are objected to because of the following informalities alleged by the Examiner:

> Claims 1 and 11, in the "identify[ing] a manner . . ." and "generate/generating a response . . ." limitation, recite "the first natural language utterance" which lack antecedent basis (the "a natural language utterance" in the "receiving/receive . . ." step was never characterized as "first").
>
> Claims 2, 5-6, 12, 15-16, similarly recite "the first natural language utterance" which lacks antecedent basis.
>
> Appropriate correction is required.

Office Action at 2. The instant amendments have rendered these objections moot. As such, withdrawal of the objection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 112

Claims 7 and 17 stand rejected under 35 U.S.C. § 112(b), or 35 U.S.C. § 112 (pre-AIA), second paragraph, as allegedly failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. *Office Action* at 2-3. Specifically, the Examiner alleges there is insufficient antecedent basis for "the first context for the natural language utterance." *Office Action* at 3. *Solely* in an effort to expedite prosecution of this application and expressly not acquiescing to the propriety of the alleged rejection, Applicant has amended dependent claims 7 and 17 rendering the rejection moot.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1-4, 8-14 and 18-20 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent Application Publication No. 2004/0044516 to Kennewick *et al.* (hereinafter "Kennewick") in view of U.S. Patent Application Publication No. 2003/0167167 to Gong (hereinafter "Gong"). *Office Action* at 4. Claims 5 and 15 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Kennewick in view of Gong, and further in view of U.S. Patent No. 7,072,888 to Perkins (hereinafter "Perkins"). *Office Action* at 29.

Assuming *arguendo* that it were deemed legally proper to combine the references relied upon in the manner alleged by the Examiner (which Applicant does not concede), the references, even if combined, fail to disclose, teach, or suggest each and every feature of the claims. Nonetheless, solely in an effort to expedite prosecution of this application and expressly not acquiescing in the propriety of the alleged rejection, the claims have been amended to clarify various aspects of the claimed invention.

For example, independent claim 1 now recites, *inter alia*, the features of:

> receiving, by the computer system, a user input comprising a natural language utterance;
>
> recognizing, by the computer system, one or more words or phrases from the natural language utterance;
>
> identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;
>
> determining, by the computer system, an interpretation of the natural language utterance based on the identified context;
>
> identifying, by the computer system, a manner in which the natural language utterance was spoken based on short-term knowledge and long-term knowledge about how a user utters a request; and
>
> generating, by the computer system, a response to the natural language utterance based on the interpretation and adapting the response based on the identified manner in which the natural language utterance was spoken.

Independent claim 11 includes similar recitations.

In the Office Action, the Examiner alleges that the combination of Kennewick and gong teaches or describes the features previously recited by independent claims 1 and 11. *Office Action* at 4. However, as amended, independent claims 1 and 11 now recite "identifying, by the computer system, a manner in which the natural language utterance was spoken based on short-term knowledge and long-term knowledge about how a user utters a request" and "generating, by the computer system, a response to the natural language utterance based on the interpretation and adapting the response based on the identified manner in which the natural language utterance was spoken." Neither Kennewick nor Gong appear to teach or describe identifying a manner in which a natural language utterance was spoken **based on short-term knowledge and long-term knowledge about how a user utters a request**. As such, independent claims 1 and 11 are

allowable over the references relied upon by the Examiner. For at least this reason alone, the rejection is improper and should be withdrawn.

Currently pending claims 2-10 and 12-26 depend from and add features to one of independent claims 1 and 11. As such, these dependent claims are allowable over the references relied upon by the Examiner for at least their dependency on an allowable claim and the further features they each recite.

ALLOWABLE SUBJECT MATTER

Applicant thanks the Examiner for the indication of allowability of claims 6 and 16. *Office Action* at 37. Specifically, the Examiner alleges, "The prior art of record does not teach or suggest the combination of all limitations in claims 1, 5, and 6 together, and in claims 11, 15, and 16 together." *Office Action* at 37. In light of the foregoing, Applicant has introduced newly added independent claims 27 and 29. Independent claim 27 includes the features of independent claim 1 and dependent claim 6, as well as the features of intervening dependent claim 5. Independent claim 29 includes the features of independent claim 11 and dependent claim 16, as well as the features of intervening dependent claim 15. Accordingly, newly added independent claims 27 and 29 (and their dependent claims) are believed to be in condition for allowance.

NEWLY ADDED CLAIMS

Applicant introduces newly added claims 21-30 to recite additional subject matter disclosed by Applicant's Specification. Applicant respectfully asserts that, in addition to reciting additional allowable subject matter, these claims are allowable over the references cited by the Examiner at least due to their dependency on an allowable claim and the further features they each recite.

CONCLUSION

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

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: **March 18, 2020**

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

Electronic Patent Application Fee Transmittal

Application Number:	16417178
Filing Date:	20-May-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
Attorney Docket Number:	62KC-298931

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:				
CLAIMS IN EXCESS OF 20	1202	10	100	1000
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	460	460
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1460**

Electronic Acknowledgement Receipt

EFS ID:	38907441
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Mark Andrew Patrick
Filer Authorized By:	
Attorney Docket Number:	62KC-298931
Receipt Date:	18-MAR-2020
Filing Date:	20-MAY-2019
Time Stamp:	21:37:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1460
RAM confirmation Number	E20203HL38406517
Deposit Account	504561
Authorized User	Mark Patrick
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		62KC-298931_Response_18MAR2020.pdf	173806 cf51477376eba7c99bf1af14055bd5739bcd9425	yes	15

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	10
	Applicant Arguments/Remarks Made in an Amendment	11	15

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	31974 ced3c6979c9739f3b5bdc7bf94581fb6e3757516	no	2

Warnings:

Information:

Total Files Size (in bytes):	205780

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

133759 7590 04/22/2020

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: 04/22/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

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	07/22/2020

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.

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 04/22/2020
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.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

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	07/22/2020

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. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

133759 7590 04/22/2020

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: 04/22/2020

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.

Notice of Allowability	Application No. 16/417,178	Applicant(s) BALDWIN et al.	
	Examiner ERIC YEN	Art Unit 2658	AIA (FITF) Status No

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

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to Amendment filed 3/18/2020.
   ☐ 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 1-4,7-14 and 17-26 . 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** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

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

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ 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

1. In response to the Office Action mailed 12/18/19, applicant has submitted an amendment filed 3/18/2020.

Claims 1-8, 11-18, have been amended. New Claims 21-30 have been added.

EXAMINER'S AMENDMENT

2. 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 4/16/2020.

The application has been amended as follows:

Amend the claims as follows:

1. (**Currently Amended**) A computer-implemented method of generating natural language system responses adapted based on a user's manner of speaking ~~in a natural language utterance~~, 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:

receiving, by the computer system, a user input comprising a natural language utterance;

recognizing, by the computer system, one or more words or phrases from the natural language utterance;

identifying, by the computer system, a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

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

accumulating, by the computer system, long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period;

identifying, by the computer system, a manner in which the natural language utterance was spoken based on the short-term knowledge and the long-term knowledge ~~about how a user utters a request~~; and

generating, by the computer system, a response to the natural language utterance based on the interpretation and ~~adapting the response based on~~ the identified manner in which the natural language utterance was spoken.

2. (**Previously Presented**) The method of claim 1, wherein the manner in which the natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

3. (**Currently Amended**) The method of claim 1, wherein the response comprises a voice response, and wherein ~~adapting~~ generating the voice response ~~to the natural language utterance~~ based on the identified manner comprises varying one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

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

obtaining, by the computer system, contextual signifiers and/or grammatical rules,

wherein ~~adapting~~ generating the response based on the identified manner in which the natural language utterance was spoken comprises using the obtained contextual signifiers and/or grammatical rules to generate sentences for use as response sets to cooperate with the user.

5. (**Canceled**).

6. (**Canceled**).

7. (**Currently Amended**) The method of claim [[6]] 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 context for the natural language utterance is determined based further on the profile associated with the first user.

8. (**Currently Amended**) The method of claim 1, wherein generating the response ~~to the natural language utterance further~~ based on the identified manner comprises:

adapting, by the computer system, the response based on a response format associated with the identified manner.

9. (**Original**) The method of claim 1, wherein recognizing the one or more words or phrases from the natural language utterance comprises:

providing, by the computer system, the natural language utterance as an input to a speech recognition engine; and

obtaining, by the computer system, the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

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

causing, by the computer system, the response to the natural language utterance to be provided to the user.

11. (**Currently Amended**) A system for generating natural language system responses adapted based on a user's manner of speaking ~~in a natural language utterance~~, 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:

receive a user input comprising a natural language utterance;

recognize one or more words or phrases from the natural language utterance;

identify a context for the natural language utterance based on the one or more words or phrases recognized from the natural language utterance;

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

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

accumulate long-term knowledge, wherein the long-term knowledge is accumulated based on one or more natural language utterances received prior to the predetermined time period;

identify a manner in which the natural language utterance was spoken based on the short-term knowledge and the long-term knowledge ~~about how a user utters a request~~; and

generate a response to the natural language utterance based on the interpretation and ~~adapt the response based on~~ the identified manner in which the natural language utterance was spoken.

12. (**Previously Presented**) The system of claim 11, wherein the manner in which the natural language utterance was spoken includes an indication of at least one of tone, pace, timing, inflection, word use, and/or jargon.

13. (**Currently Amended**) The system of claim 11, wherein the response comprises a voice response, and wherein to ~~adapt~~ generate the voice response ~~to the natural language utterance~~ based on the identified manner, the one or more physical processors are further configured to:

vary one or more of tone, pace, timing, inflection, word use, and/or jargon of the voice response.

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

obtain contextual signifiers and/or grammatical rules,

wherein to ~~adapt~~ generate the response based on the identified manner in which the natural language utterance was spoken, the one or more physical processors are further configured to use ~~comprises using~~ the obtained contextual signifiers and/or grammatical rules to generate sentences for use as response sets to cooperate with the user.

15. (**Canceled**).

16. (**Canceled**).

17. (**Currently Amended**) The system of claim [[16]] 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 context for the natural language utterance is determined based further on the profile associated with the first user.

18. (**Currently Amended**) The system of claim 11, wherein to generate the response ~~to the natural language utterance~~ based on the identified manner, the one or more physical processors are configured to:

adapt the response based on a response format associated with the identified manner.

19. (**Original**) The system of claim 11, wherein to recognize the one or more words or phrases from the natural language utterance, the one or more physical processors are configured to:

provide the natural language utterance as an input to a speech recognition engine; and

obtain the one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine.

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

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

21. (**Currently Amended**) The method of claim 1, wherein the response comprises a voice response, and wherein ~~adapting~~ generating the voice response to the natural language utterance based on the identified manner comprises varying one or more of word use and/or jargon of the voice response.

22. (**Previously Presented**) The method of claim 1, the method further comprising:

adapting the response, by the computer system, to model a conversation, wherein adapting the response to model a conversation comprises adapting the response to have a personality by varying word use.

23. (**Previously Presented**) The method of claim 1, the method further comprising generating a response that is sensitive to context, what the user already knows about a topic, short-term knowledge and long-term knowledge of user preferences, and words uttered by the user in one or more prior natural language utterances.

24. (**Currently Amended**) The system of claim 11, wherein the response comprises a voice response, and wherein to ~~adapt~~ generate the voice response to the natural language utterance based on the identified manner, the one or more physical processors are further configured to:

vary one or more of word use and/or jargon of the voice response.

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

adapt the response to model a conversation, wherein adapting the response to model a conversation comprises adapting the response to have a personality by varying word use.

26. (**Previously Presented**) The system of claim 11, wherein the one or more physical processors are further configured to generate a response that is sensitive to context, what the user already knows about a topic, short-term knowledge and long-term knowledge of user preferences, and words uttered by the user in one or more prior natural language utterances.

27-30. (**Canceled**).

Allowable Subject Matter

3. Claims 1-4, 7-14, 17-26, are allowed.

4. The following is an examiner's statement of reasons for allowance:

Applicant amended the allowable subject matter of claims 5-6 and 15-16 into claims 1 and 11, respectively.

As previously stated in the previous Office Action:

The prior art of record does not teach or suggest the combination of all limitations in claims 1, 5, and 6 together, and in claims 11, 15, and 16 together.

Perkins, as discussed above, teaches where "short-term" knowledge includes queries within the last n days, but describes where data older than n days is obsolete and is deleted (therefore not obvious to combine with an additional reference that teaches long-term data based on utterances received more than n days ago).

The following portions of the Non-Final Office Action mailed 6/11/19 for Application 16/417,173 are also relevant.

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"

Additionally, as per claims 1 and 11 as filed in the amendment filed 3/18/2020:

Gong (US 2003/0167167) (in addition to what was discussed in the previous Office Action) further teaches comparing received heart rate about a user (which could be interpreted as "short-term") with a typical heart rate from a user profile (where the profile can be interpreted as "long-term" information, similar to what Applicant describes in paragraph 55 of the Specification; "compares the received information about the user... with the basic profile of the user... received information that the heart rate of the user is 90 beats per minute... compares the received heart rate with the typical heart rate from the basic profile of the user... determine the difference between the typical and received heart rates... elevated... determines the heart rate... significantly elevated... corresponding emotional state is evident in the user", paragraph 35;) in

addition to determining the user's affective state by determining that speech characteristics are slower/faster "than normal"/"compared to the user's basic pattern" (paragraph 50).

Gong thus suggests where speech features of input speech (short-term) are compared to corresponding profile information (long-term) which indicates what values for those speech features are typical/normal for the user.

Gong further describes long-term information which pertains to how a user utters a request.

Paragraph 58 describes where a user profile indicates that a request can include the word "now" and where a user typically uses the term "now" as part of an instruction, and determining that a user context is "normal" even though the user uses the word "now"

Gong thus suggests using short-term information (user's instruction includes the word "now") and long-term information (user profile information indicating that the user typically uses the word "now" in instructions) to determined an identified manner in which the user spoke the request (in a typical way, not an urgent way)

Other portions of Gong of note include:

Paragraph 30 describes an example where the user can use the word "quickly" or "now" in a command, and where words in a command are spoken faster, with less articulation and with a faster heart rate than when the same words are spoken with a normal style for the user, and paragraph 34 describes where the profile of the user includes information about the verbal and non-verbal styles of the user, and where a user typically speaks with correct grammar and accurate wording, and paragraph 57

describes linguistic style about the user, and paragraph 60 describes where a social agent can be modified based on adjusted content and context information, including by adjusting linguistic style and speech style of an intelligent social agent to be similar to a user's linguistic and speech style. Paragraph 69 describes modifying the speech style from a baseline style of speech for an agent, paragraph 83 describes processing extracted information using an adaptation engine and generating one or more responses.

Additionally, the following prior art reference teaches where a generated prompt can be modified according to emotional status of an application.

6658388 "System initiative may be generated by emotions... loneliness... allows the system to take the initiative... frustration... employs personality and emotion to affect the presentation of information to the user. Personality specifies the grammar used for generating prompts and... permits the use of shorter [experienced users] or longer [coaching mode] prompts as needed... emotional status of an application can also be used to modify the prompts and even the behavior of the system", col. 10, lines 37-51;

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. 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 https://ppair-my.uspto.gov/pair/PrivatePair. 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 4/16/2020

/ERIC YEN/
Primary Examiner, Art Unit 2658

Notice of References Cited	Application/Control No. 16/417,178	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-20030167167-A1	09-2003	Gong, Li	G10L15/22	704/250
*	B	US-6658388-B1	12-2003	Kleindienst; Jan	G10L15/22	704/270
*	C	US-20050240412-A1	10-2005	Fujita, Masahiro	G10L15/16	704/270
*	D	US-20050043956-A1	02-2005	Aoyama, Kazumi	G10L15/22	704/276
*	E	US-20050080821-A1	04-2005	Breil, Peter D.	G06Q40/02	1/1
*	F	US-20010011336-A1	08-2001	SITKA, LARRY R.	H04N1/2179	711/161
*	G	US-20050015256-A1	01-2005	Kargman, James B.	G06Q30/06	704/272
*	H	US-5748841-A	05-1998	Morin; Philippe	G06F3/16	704/257
*	I	US-20040044516-A1	03-2004	Kennewick, Robert A.	G10L15/22	704/5
*	J	US-7072888-B1	07-2006	Perkins; Alan	G06F16/9535	707/733
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10L 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	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 14/691445	12/12/2019	EY
EAST Search (attached)	12/12/2019	EY
EAST Search (attached)	04/16/2020	EY

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G10L	15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	EY

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

CPC						
Symbol					**Type**	**Version**
G10L	/	15	/	18	F	2013-01-01
G10L	/	15	/	1815	I	2013-01-01
G10L	/	15	/	1822	I	2013-01-01
G10L	/	25	/	51	I	2013-01-01
G10L	/	15	/	22	I	2013-01-01
G06F	/	40	/	30	I	2020-01-01
G10L	/	25	/	63	I	2013-01-01
G06F	/	3	/	167	I	2013-01-01
G10L	/	17	/	22	I	2013-01-01
G10L	/	2015	/	228	A	2013-01-01
G10L	/	2015	/	225	A	2013-01-01
G10L	/	2021	/	02166	A	2013-01-01
G10L	/	15	/	183	A	2013-01-01
G10L	/	2015	/	0631	A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	16 April 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20200416

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G10L15/18	/	15	/	18
G10L25/51	/	25	/	51
G10L15/22	/	15	/	22
G06F40/30	/	40	/	30
G10L25/63	/	25	/	63
G06F3/16	/	3	/	16
G10L17/22	/	17	/	22
G10L21/0216	/	21	/	0216
G10L15/183	/	15	/	183
G10L15/06	/	15	/	06

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	16 April 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200416

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	13	12	11	23										
2	2	14	13	20	24										
3	3	15	14	21	25										
4	4	16	17	22	26										
5	7	17	18												
6	8	18	19												
7	9	19	20												
8	10	9	21												
12	11	10	22												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	16 April 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200416

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	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[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20040199387		2004-10-07	WANG AVERY LI-CHUN	
	2	20080010135		2008-01-10	SCHROCK JEFF	
	3	20100076778		2010-03-25	KONDRK ROBERT H	

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	1	2867583	FR		2005-09-16	VESSIERE GILLES RENE		

/ERIC YEN/ 04/16/2020

EFS Web 2.1.18

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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NON-PATENT LITERATURE DOCUMENTS [Remove]

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[5]
	1		

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EXAMINER SIGNATURE

Examiner Signature	/ERIC YEN/	Date Considered	04/16/2020

*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.

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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)	2020-03-12
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/ 04/16/2020

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/ERIC YEN/ 04/16/2020

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("9015049" "10297249" "8515765" "8073681").pn. and (time).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:28
L2	2	("9015049" "10297249" "8515765" "8073681").pn. and (manner).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:28
L3	34	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (long-term with time with (transfer$4 expir$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:42
L4	75	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (long-term with time with (transfer$4 expir$4 stor$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:43
L5	2	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (long-term with ((before preced$4) adj2 time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:55
L6	30	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((utterances ((speech voice) adj input$1)) with ((before preced$4) adj2 time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:56
L7	62	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((utterances ((speech voice) adj input$1)) with ((after) adj2 time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 17:58
L8	14	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((utterance$1 ((speech	US-PGPUB; USPAT;	OR	OFF	2020/04/16 18:02

		voice) adj input$1)) with ((after) adj2 time) with (stor$4 memor$4 histor$4))	USOCR; EPO; JPO			
L9	24	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((utterance$1 ((speech voice) adj input$1)) with ((after before preced$4 following) adj2 time) with (stor$4 memor$4 histor$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 18:02
L10	41	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((utterance$1 ((speech voice) adj input$1)) with ((after before preced$4 following) adj5 time) with (stor$4 memor$4 histor$4))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 18:03
S11	16	(G10L25/63).cpc. and (short-term with long-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 14:24
S12	23	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (short-term same long-term same (emotion$2))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 14:29
S13	1	"20030167167".pn. and user$1	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 14:59
S14	24	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (profile$1 with (style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with (request$4 command$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:18
S15	10	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with (utter$4 adj (request$4 command$1)))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:27
S16	2424	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 emotion$2 ((speaking talking speech) adj	US-PGPUB; USPAT;	OR	OFF	2020/04/14 15:29

		rate$1)) with user$1 with (request$4 command$1 utterance$1))	USOCR; EPO; JPO			
S17	4	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with (request$4 command$1 utterance$1) with (short-term long-term))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:30
S18	1853	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with (request$4 command$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:33
S19	36	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with (request$4 command$1) with (profile$1 voiceprint$1 template$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:36
S20	1	"20030167167".pn. and style$1	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:38
S21	742	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and ((style$1 manner$1 ((speaking talking speech) adj rate$1)) with user$1 with (requests commands))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:40
S22	18	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (((style$1 manner$1 ((speaking talking speech) adj rate$1)) with user$1 with (requests commands)) with (model$1 profile$1 voiceprint$1 voice-font$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:41
S23	36	((G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with user$1 with	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:43

		(requests commands)) with (model$1 profile$1 voiceprint$1 voice-font$1))) not S22				
S24	90	((G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (((style$1 manner$1 emotion$2 ((speaking talking speech) adj rate$1)) with (requests commands)) with (model$1 profile$1 voiceprint$1 voice-font$1)))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:46
S25	18	(G10L25/63 G10L15/$ G10L2015/$ G10L17/$ G10L2017/$).cpc. and (((word adj (use usage)) phrasing$1) with user$1 with (requests commands))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:52
S26	1	"20030167167".pn. and (word$1 phras$4)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 15:56
S27	6	("9015049" "10297249" "8515765" "8073681").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 16:24
S28	2	("9015049" "10297249" "8515765" "8073681").pn. and manner.clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 16:25
S29	3	("9015049" "10297249" "8515765" "8073681").pn. and (request$4).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 16:29
S30	1	("9015049" "10297249" "8515765" "8073681").pn. and time.clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/14 16:33
S31	1	"20030167167".pn. and (request$4 command$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 12:16

S32	1	"20030167167".pn. and (profile$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 12:22
S33	21	(G10L15/$ G10L2015/$).cpc. and (((adapt$4 adjust$4 modif$4) adj2 (response$1 prompt$1)) with (emotion$2 style$1) with user$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 12:54
S34	43	(G10L15/$ G10L2015/$).cpc. and (((adapt$4 adjust$4 modif$4) adj2 (response$1 prompt$1 repl$4)) with (emotion$2 style$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 13:00
S35	1	"20030167167".pn. and (response$1 candidate$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 13:02
S36	1	"20040044516".pn. and (response$1 sentence$1 candidate$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 13:24
S37	1	"6658388".pn. and (emotional adj status)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 13:53
S38	1	"6658388".pn. and (emotion$2)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 13:54
S39	1	"20030167167".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 14:02
S40	1	"20030167167".pn. and (time$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/04/16 14:42

Bibliographic Data

Application No: 16/417,178

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

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/20/2019	704	2658	62KC-298931
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

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Chris WEIDER Seattle, WA, UNITED STATES

CONTINUING DATA

This application is a DIV of 14691445 04/20/2015 PAT 10297249

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

13987645 is a DIV of 13251712 10/03/2011 PAT 8515765

13251712 is a CON of 11580926 10/16/2006 PAT 8073681

FOREIGN APPLICATIONS

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UNITED STATES

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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	1	103229206A	CN		2013-07-31	EZPAYY INC		☒
	2	0129742A2	WO		2001-04-26	TELLME NETWORKS INC		☐

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	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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[5]
	1	Office Action issued in Chinese Patent Application No. 201580060519.1 on March 13, 2020, with its English translation, 40 pages.	

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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

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	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

CERTIFICATION STATEMENT

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OR

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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	/Timothy P. Cremen/	Date (YYYY-MM-DD)	2020-06-15
Name/Print	Timothy P. Cremen	Registration Number	50,855

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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.

Bibliographic data: CN103229206 (A) — 2013-07-31

System and method for mobile electronic purchasing

Inventor(s): DOHERTY THOMAS CAMERON; DORNBUSH CARLIN; FARBER DAVID ± (DOHERTY THOMAS CAMERON, ; DORNBUSH CARLIN, ; FARBER DAVID)

Applicant(s): EZPAYY INC ± (EZPAYY INC)

Classification: - international:*G06Q30/06*
- cooperative: G06Q20/3221 (EP); G06Q30/0633 (EP); G06Q30/0641 (EP)

Application number: CN20118056453 20111014 Global Dossier

Priority number(s): WO2011US56386 20111014 ; US20100905755 20101015

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Abstract of CN103229206 (A)

A system and method for electronic purchasing via a mobile web-enabled communication device. A contact list containing shipping addresses, and a payment file containing encrypted credit card information for one or more credit cards is stored on the mobile device. In response to a request for credit card and shipping information from a merchant website for an item to be purchased, a specific one of the credit cards and a specific one of the shipping addresses is selected from the contacts list and the payment file, respectively. The credit card data for the selected credit card is decrypted, and the decrypted credit card data and the selected shipping address are sent to the merchant website for order processing.

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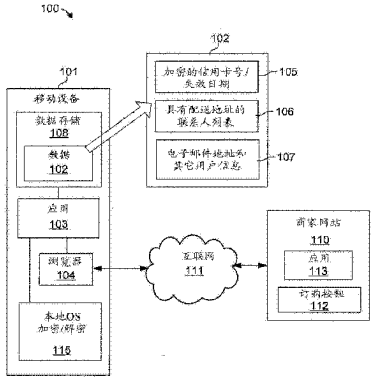
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用于移动电子购物的系统和方法

(57)摘要

用于经由支持网络的移动通信设备进行电子购物的系统和方法。包含配送地址的联系人列表以及包含用于一个或多个信用卡的加密信用卡信息的支付文件被储存在该移动设备上。作为对来自待购买物品的商家网站对信用卡和配送地址信息的请求的响应，分别从联系人列表和支付文件中选择信用卡中的指定信用卡和配送地址中的指定地址。所选信用卡的信用卡数据被解密。被解密的信用卡数据和所选配送地址被发送至商家网站以进行订单处理。



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1. 一种经由支持网络的移动通信设备进行电子购物的方法，所述移动通信设备包括互联网浏览器，所述方法包括：

创建联系人列表，所述联系人列表存储在所述移动通信设备上并包含至少一个配送地址；

创建支付文件，所述支付文件储存在所述移动通信设备上并包含加密的信用卡信息，所述信用卡信息包括用于至少一个信用卡的卡号和失效日期；

经由所述浏览器显示商家网站，所述商家网站包括显示订单按钮的网页；

将待购买物品放入所述网页上的订单列表；

选择所述订单按钮以使物品信息从所述商家网站被发送至所述移动通信设备，所述物品信息包括所选的待购买物品的名称和价格；

从所述商家网站请求所选物品的价格；

从所述商家网站接收所选物品的价格；

作为从所述商家网站接收所述物品信息的响应：分别从所述联系人列表和所述支付文件中选择所述信用卡中的指定信用卡和所述配送地址中的指定地址；

对所选信用卡的信用卡数据进行解密；以及

将解密的信用卡数据和所选的配送地址从所述移动通信设备发送至所述商家网站以进行订单处理。

2. 根据权利要求 1 所述的方法，其中，用于请求步骤和发送步骤的通信使用所述商家网站上的用于所述请求步骤和所述发送步骤中的每一个的相应 URL 来起作用。

3. 根据权利要求 2 所述的方法，其中，执行请求、接收、及选择的步骤的应用由所述浏览器启动。

4. 根据权利要求 1 所述的方法，其中，执行请求、接收以及选择的步骤的应用由另一应用启动。

5. 根据权利要求 1 所述的方法，其中，所述联系人列表是用于确定在从所述设备发送电子邮件消息时所使用的电子邮件地址的文件。

6. 一种经由支持网络的移动通信设备进行电子购物的方法，所述方法包括：

创建联系人列表，所述联系人列表存储在所述移动通信设备上并包含至少一个配送地址；

创建支付文件，所述支付文件储存在所述移动通信设备上并包含加密的信用卡信息，所述信用卡信息包括用于至少一个信用卡的卡号和失效日期；

作为来自待购买物品的商家网站的对信用卡和配送信息的请求的响应，分别从所述联系人列表和所述支付文件中选择所述信用卡中的指定信用卡和所述配送地址中的指定地址；

对所选信用卡的信用卡数据进行解密；以及

将解密的信用卡数据和所选的配送地址发送至所述商家网站以进行所述待购买物品的订单处理。

7. 根据权利要求 6 所述的方法，其中，发送的步骤使用所述商家网站上的用于所述设备与所述商家网站之间通信的 URL 来起作用。

8. 根据权利要求 7 所述的方法，其中，执行请求、接收以及选择的步骤的应用由所述浏览器启动。

9. 根据权利要求 6 所述的方法，其中执行请求、接收以及选择的步骤的应用由另一应用启动。

10. 一种用于移动电子购物的系统，包括：

支持网页的移动通信设备，包括互联网浏览器和数据存储区，数据存储区中储存有 (1) 包括配送地址的联系人列表以及 (2) 包括用于一个或多个信用卡的每一个的信用卡号和失效日期的加密信用卡数据；

其中：

所述设备上的所述浏览器显示商家网址上的网页，所述网页包括订单按钮，所述订单按钮在被选择时使包括待购买物品的名称和价格的物品信息从所述商家网站发送至所述设备；以及

作为从所述商家网站接收所述物品信息的响应：

分别从所述联系人列表和所述信用卡数据中选择所述信用卡中的指定信用卡和所述配送地址中的指定地址；以及

对所选信用卡的信用卡数据进行解密，以及将解密的信用卡数据和所选的配送地址发送至所述商家网站以进行订单处理。

11. 根据权利要求 10 所述的方法，其中，所述设备与所述商家网站之间的通信经由至少一个 URL 来起作用。

12. 根据权利要求 11 所述的方法，其中，执行请求、接收以及选择的步骤的应用由所述浏览器启动。

13. 根据权利要求 10 所述的方法，其中，执行请求、接收以及选择的步骤的交易处理应用由另一应用启动。

14. 根据权利要求 13 所述的方法，其中，所述商家网站使用专门适用于在所述网站与所述设备中的交易处理应用之间传输产品和购买信息的应用。

15. 一种用于移动电子购物的系统，包括：

支持网络的移动通信设备，包括数据存储区，所述数据存储区中储存有 (1) 包括至少一个配送地址的列表以及 (2) 包括用于一个或多个信用卡中的每一个的信用卡号和失效日期的加密信用卡数据；

其中，加密信用卡数据被解密，并且被解密的信用卡数据和配送地址从所述设备发送至商家网站以购买经由所述网站订购的物品。

16. 根据权利要求 15 所述的方法，其中，所述发送的步骤使用所述商家网站上的用于所述设备与所述商家网站之间通信的 URL 来起作用。

17. 根据权利要求 16 所述的方法，其中，执行请求、接收以及选择的步骤的应用由所述浏览器启动。

18. 根据权利要求 15 所述的方法，其中，执行请求、接收以及选择的步骤的应用由另一应用启动。

19. 根据权利要求 15 所述的方法，其中，所述列表是用于从所述设备发送电子邮件的联系人列表。

20. 根据权利要求 15 所述的方法，其中，所述商家网站使用专门适用于在所述网站与所述设备中的应用之间传输产品和购买信息的应用。

用于移动电子购物的系统和方法

背景技术

[0001] 通过移动电话进行互联网购物通常需要购买者手动输入数据，例如信用卡号和配送信息。对于购买者而言，这在使用多个电子商务系统和网站时变得厌烦。对于商家而言，在使用移动互联网时需要进行与接受信用卡支付相关的额外工作。因此，需要支持网络的移动设备（例如“智能电话”）的系统允许用户和商家在比现有购买者－商家接口付出更少时间和努力的情况下完成基于互联网的购物任务。

发明内容

[0002] 本系统存储多个信用卡并使用之前输入的数据来简化在线信用卡交易的数据输入。个人／支付信息保持安全地储存在用户的移动电话中。此外，通过本系统，商家能够有效利用现有网络资产和商家账户，从而无需为每种类型的“智能电话”构建应用。当在商家网站上选择物品购买之后，客户结账的时间被减少为较少的点击。该系统允许每个用户的智能电话在不同商家网站上具有更加一致的体验。

[0003] 在一个实施方式中，包含配送地址的联系人列表以及包含用于一个或多个信用卡的加密信用卡信息的支付文件被存储在智能电话上。作为对来自待购买物品的商家网站对信用卡和配送地址信息的请求的响应，分别从联系人列表和支付文件中选择信用卡中的指定信用卡和配送地址中的指定地址。所选信用卡的信用卡数据被解密。被解密的信用卡数据和所选配送地址被发送至商家网站以进行订单处理。

附图说明

[0004] 图 1 是示出本系统的一个实施方式的示例性组件的示图；

[0005] 图 2 是示出由一个实施方式中的本系统执行的示例性步骤的流程图；以及

[0006] 图 3 是示出本系统的工作期间的示例性数据流的示图。

具体实施方式

[0007] 图 1 是示出本系统 100 的示例性高层组件的示图。如图 1 所示，在示例性实施方式中，用于移动电子购物的系统 100 包括经由互联网 111 互连的支持网络的移动通信设备（例如，“智能电话”）101 和商家网站 110。

[0008] 移动设备 101 包括网页浏览器 104、交易处理和通信应用 103、以及包含数据 102 的数据存储区 108，数据 102 包括加密数据 105。数据 102 包括支付文件 105，支付文件 105 含有一个或多个加密的用户信用卡号和失效日期、联系人列表 106、以及用户电子邮件地址和其它用户信息。在一个实施方式中，联系人列表 106 是由移动设备 101 上的应用（例如浏览器）所使用的用于确定从该设备发送电子邮件消息时所使用的电子邮件地址的相同文件。

[0009] 商家网站 110 包括订单按钮 112，订单按钮 112 与打开应用 113 的 URL 关联，应用 113 与购买者（下文称系统用户或简称为“用户”）通信。图 1 中所示内容的每一个的功能

将在下文详细说明。

[0010] 图 2 是示出在示例性实施方式中使用支持网络的诸如“智能电话”的移动通信设备（下文称“移动设备”）通过信用卡（借记卡）购买物品时由本系统实施的步骤。如图 2 所示，在使用本系统进行购买之前，在步骤 202 中，用户使用应用 103 输入一个或多个信用卡的信用卡信息（包括卡号和失效日期），并输入联系人列表 106 中的一个或多个人的姓名和地址。应用 103 使用本地操作系统服务 115（在移动设备是iPhone®或iPad®的情况下，例如为Apple®的 iOS Keychain 或 Core Data Service（核心数据服务））来加密（和解密）移动设备上的信息，并在步骤 203 中，加密和储存用于数据存储 102 的支付文件 105 中的一个或多个信用卡或借记卡的信息。

[0011] 为了进行购买，用户首先使用移动设备 101 上的网页浏览器 104 显示商家网站上的网页。在用户通过将物品放入订单列表（诸如“购物车”等）而选择待购买物品之后，在步骤 204 中选择（“点击”）网页上的订单按钮 112 以启动购买交易。商家网站 110 使用应用 113 来与移动设备 101 通信。在示例性实施方式中，应用 113 特别适用于向移动设备 101 中的应用 103 发送产品和购买信息 / 从移动设备 101 中的应用 103 接收产品和购买信息。

[0012] 在步骤 205 中，随后通过移动设备请求包括所选物品的物品价格、商家名称以及物品描述的物品信息，并且在步骤 206 中，将所请求的信息从商家网站 110 发送至移动设备应用 103。

[0013] 在步骤 207 中，用户响应于设备 101 上的屏幕提示来选择配送方式，配送方式包括配送地址以及支付方法（将用于交易的具体信用卡 / 借记卡）。可以从之前输入的配送地址数据（来自用户的联系人列表 106）来选择配送方式，并且从卡的列表中选择具体信用卡或借记卡，这些卡的数据可以被之前输入并以加密形式储存在文件 105 中。

[0014] 在步骤 208 中，通过本地操作系统服务 115 将之前储存在移动设备中的加密的信用卡信息和配送信息解密到移动设备上。在步骤 210 中，将信用卡号、配送地址、用户电子邮件地址发送至商家网站。在一个实施方式（下面详细描述）中，使用基于 URL 的机制在移动设备 101 与商家网站 110 之间进行通信。

[0015] 在步骤 215 中，在商家成功接收交易之后，成功或失败 URL 通信从商家发送至移动设备。

[0016] 基于 URL 的通信机制

[0017] 每个 URL 都由下列中的至少一些组成：方案名（通常称为协议），紧接着是冒号，随后是（根据方案）主机名（可选地，IP 地址）、端口号、待获取的资源的或待运行的程序的路径，然后是（对于诸如公共网关接口 (CGI) 脚本的程序）查询字符串。组合的语法是：

[0018] scheme://usemame:password@domain:port/path ? query_string#anchor

[0019] 在本系统的一个实施方式中，编码后的 URL 被用于在用户移动设备 101 与商家网站 110 之间进行通信。当移动设备 101 中的浏览器 104 显示商家网站 110 上的具有（包含由用户选择购买的物品的订单列表）“购物车”的网页时，网页上的购买按钮图像显示诸如“现在购买”的消息。用于启动交易处理应用 103 的执行的 HTML 链接可包围交易按钮图像，例如：

[0020] <a href ＝″ EPay://www.Merchant.com:1234/Merchant_main_

[0021] page/EPayOpen_Session1D ＝ xxx″ >

[0022] 其中“EPay”是设备 101 上的本地限定的协议，其指定安全连接的使用。“www.Merchant.com”是商家网站的 URL，“Merchant_main_page/EPayOpen”是打开应用 103 以接收用户 / 购买者信息的链接，并且“SessionID”是 URL 的查询字符串部分中的商家的会话信息。

[0023] 应用 103 将其在查询字符串中发现的任何结果在随后请求中传回商家，使得用户的会话可被识别。在示例性实施方式中，应用 103 对与商家网站的所有连接都使用 HTTPS 协议。“HTTPS”代表安全超文本传输协议安全，其是超文本传输协议 (HTTP) 与 SSL/TLS 协议的组合以提供加密的通信和网页服务器的安全识别。应用 103 的执行可由或驻留在移动设备 101 上或与移动设备远程通信的单独应用来启动。

[0024] 图 3 是示出本系统的工作期间的示例性数据流的示图。如图 3 中的箭头 205 指示，当用户点击购买按钮 (图 2，步骤 204) 时，“打开 URL”301 被激活，URL301 是与该按钮关联的目标 URL，“打开 URL”打开移动设备 101 上的应用 103。下面的示例示出“打开”URL :

[0025] EPay://www.Merchant.com:/1234/Merchant_main_page/EPayOpen_SessionID = xxx

[0026] 如箭头 306 所指示，应用 103 经由上述 URL 请求购物车价格、商家名、以及商家证书 (步骤 205)，这些信息随后由商家网站以两部分多用途因特网邮件扩展 (mime)/ 多文档形式 (步骤 206，图 3 中的箭头 307) 提供 (经由应用 113)，其中证书位于第二部分中。商家网站上的打开文档可采用如下形式 :

[0027] HTTP/1.1200OK

[0028] Cache-Control :private

[0029] Content-Length :1589

[0030] Content-Type :multipart/mixed ;boundary = " -- = = EPay_demo " ;charset = utf-8

[0031] Server :Microsott-I IS/7.0

[0032] X-EPay-Version :1.0

[0033] X-AspNet-Version :2.0.50727

[0034] X-Powered-By :ASP.NET

[0035] X-5o9-MobileMe-SRVID :5o9-iMobile 1.2.2.08.16.084.29.2010-19.11.57

[0036] Date :Thu,29 Apr 2010 19:11:57GMT

[0037] Price = 3500&MerchantName = Merchant

[0038] -- = = EPay_demo

[0039] Content-Type :text/plain

[0040] Content-ID :<Certificate>

[0041] -----BEGIN CERTIFICATE-----

[0042] MIID+zCCA2SgAwlBAglJAKflCZF0L/EWMA0GCS...

[0043] -----END CERTIFICATE-----

[0044] -- = = EPay_demo--

[0045] 然后用户从之前储存在移动设备 101 中的信息中选择包括配送地址和支付方法 (即，用于交易的具体信用卡或借记卡) 的配送方式 (步骤 207)，并输入 PIN(个人 ID 号)。

本地操作系统服务 115 接着对用于所选配送和支付方法的预先储存的配送和信用卡信息进行解密（步骤 208）。应用 103 随后经由至 URL302 的简单形式的发布 (post) 将该信息发送至商家网站（步骤 210，图 3 中的箭头 308），URL302 可采用如下形式：

[0046] EPay://www.Merchant.com:/1234/Merchant_main_page/EPayPost_SessionID = xxx

[0047] 被发送的格式字段包括：

[0048] Name

[0049] Phone

[0050] Email

[0051] ShippingName

[0052] Street

[0053] City

[0054] State

[0055] Zip

[0056] CreditCard

[0057] CreditCardNumber

[0058] CreditCardExpiration

[0059] 包括信用卡号和失效日期的上述信息储存在商家数据区 303 中，以由商家进行处理。此时，商家网站 110 处理交易并回复 HTTP200 状态（交易成功）或 HTTP402 状态和错误消息，其将被显示给用户的 (215)。

[0060] 当交易已经完成时，应用 103 在用户的网页浏览器中打开“返回”URL 并退出。该返回 URL 可采用如下形式：

[0061] EPay://www.Merchant.com:/1234/Merchant_main_page/EPayReturn_SessionID = xxx

[0062] 参照了本发明的具体实施方式详细地描述了本发明，在不背离由所附权利要求所限定的范围的情况下，修改和变形是显而易见的。更具体地，预期本系统不限于其具体公开的方面。

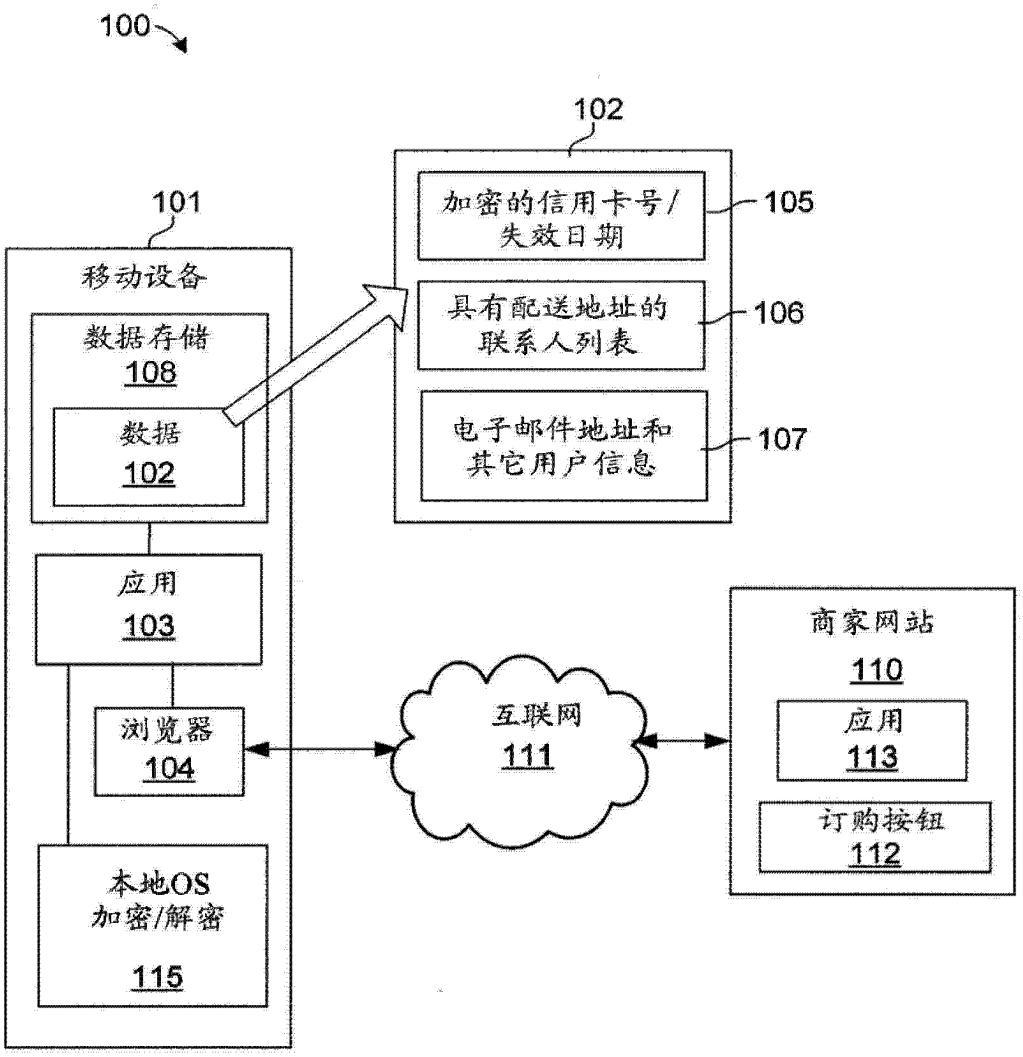

100
102
101
移动设备
加密的信用卡号/
失效日期
105
具有配送地址的
联系人列表
106
电子邮件地址和
其它用户信息
107
数据存储
108
数据
102
应用
103
浏览器
104
本地OS
加密/解密
115
互联网
111
商家网站
110
应用
113
订购按钮
112

图 1

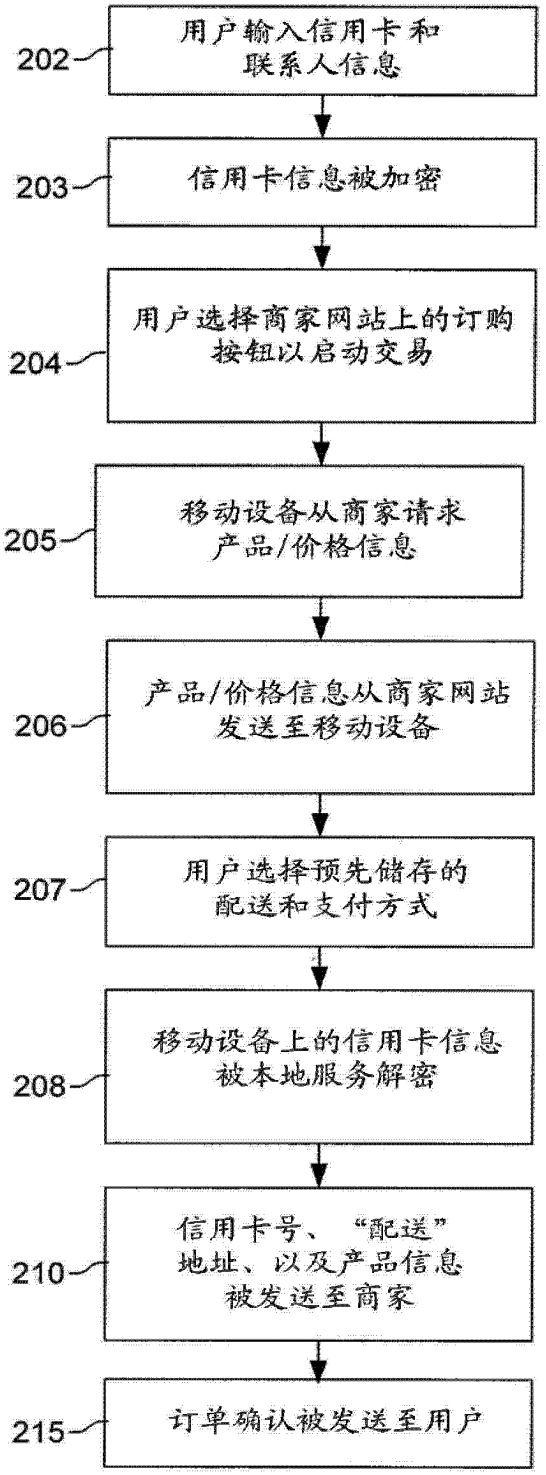

202
用户输入信用卡和联系人信息
203
信用卡信息被加密
204
用户选择商家网站上的订购按钮以启动交易
205
移动设备从商家请求产品/价格信息
206
产品/价格信息从商家网站发送至移动设备
207
用户选择预先储存的配送和支付方式
208
移动设备上的信用卡信息被本地服务解密
210
信用卡号、“配送”地址、以及产品信息被发送至商家
215
订单确认被发送至用户

图 2

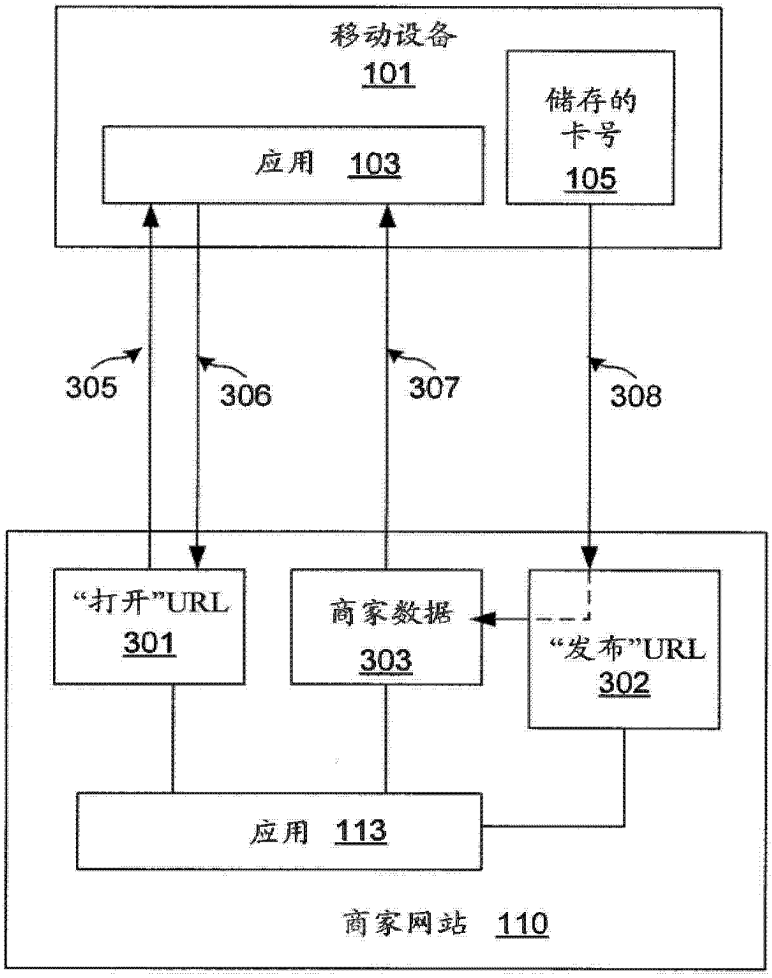

移动设备
101
储存的
卡号
105
应用 103
305
306
307
308
“打开”URL
301
商家数据
303
“发布”URL
302
应用 113
商家网站 110

图 3

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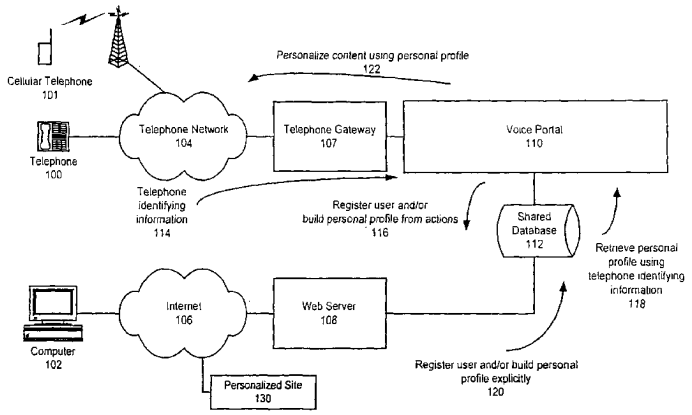
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR ELECTRONIC COMMERCE USING A TELEPHONE INTERFACE



(57) Abstract: A voice portal supporting telephone to web server commerce is described. The voice portal allows users to access web servers using a hypertext transfer protocol (HTTP), optionally including the use of a secure sockets layer (SSL) protocol, to complete commercial transactions. Additionally, embodiments of the invention can employ a one word commerce model that abstracts the particular model used by various electronic commerce vendors' web sites. The one word commerce model permits a user to identify a product and signal her/his purchase intentions with a single word, phrase, or touch-tone command. The voice portal can then complete the transaction supplying the electronic commerce vendor necessary information about the purchaser, e.g. her/his address, telephone number, electronic mail address, credit card information, etc. As needed, the voice portal can prompt the purchaser for information. Because the voice portal can maintain a record of this information independent from a particular vendor, the collected information can automatically be re-used when making purchases from other vendors. Further, embodiments of the invention can provide a record of commerce transactions in the form of voice receipts. The voice receipts can include vendor specific status information. Selective password protection of the commerce features are afforded by some embodiments of the invention to reduce the likelihood of unauthorized transactions. Additionally, embodiments of the invention may employ a range of personalization techniques to assist purchasers in selecting items as well as in the presentation of suggested items.

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METHOD AND APPARATUS FOR ELECTRONIC COMMERCE USING A TELEPHONE INTERFACE

BACKGROUND OF THE INVENTION

Field of the Invention

This disclosure relates to the field of electronic commerce. In particular, the invention relates to technologies for providing electronic commerce to users over a telephone interface. The disclosure also relates to identifying and registering users using telephone identifying information and personalizing the content, including the electronic commerce, presented to them using a profile selected using the telephone identifying information.

Description of the Related Art

The following describes various techniques used in telephone systems to provide enhanced user features. First, telephone identifying information will be discussed. Many telephone systems that support enhanced user features use telephone identifying information as a basic component. Then, a variety of example systems will be discussed that use telephone identifying information to provide enhanced user features will be discussed.

1. Telephone Identifying Information

The advent of automatic number identification (ANI) and calling number identification (CNID, CLID, or CID) within the North American Numbering Plan (NANP) has supported the creation of a number of services that use these pieces of telephone identifying information. Comparable systems may be used in other numbering plans and countries to support similar services.

For example, when consumers receive credit cards in the mail, they have to call from their home telephone numbers to activate the cards. This is a typical use of ANI. In this instance, the credit card company matches the ANI information provided when the consumer calls to a previously provided telephone number. If the ANI matches the credit card company's records, the credit card company activates the card.

2. Examples of Telephone System Personalization

a. Personalization Generally

With the advent of widely available real-time delivery of telephone identifying information such as ANI, a number of systems have been developed to use that information. One of the most common uses of ANI is for credit card activation. However, previous systems have been single purpose and typically require reference to other information provided separately. For example, credit card activation lines require separately provided information, e.g. your home phone number from the application.

b. Building Personalized Content on the Web

Some systems allow a user to build personalized content over the web. One example is the myYahoo!™ service provided by Yahoo! of Santa Clara, California at <http://my.yahoo.com/>. The personalized content pages developed on the web are delivered over the web to users accessing the pages with computers. These systems rely on

a username and password type system to identify the user rather than telephone identifying information and the delivery mechanisms is different.

c. Interactive Personalization

Still other systems allow users to personalize the content without entering special editing modes. For example, Amazon.com, of Seattle, Washington, keeps track of your purchases and preferences using cookies stored on a customer's web browser.

Some telephone systems provide limited customization capabilities. For example, voice mail systems from Octel, a division of Lucent Technologies, allow a user to set preferences for prompt length, but those settings must be made explicitly by each user. Further, customization is limited to a few options like prompt length and outgoing message selection. The user can not redefine the way the voice mail system works for her/him beyond those narrow customization options. Further, these customizations do not affect the kinds of content and further the presentation is not selected based on telephone identifying information.

d. Locale Selection

Services such as Amtrak's 1-800-USA-RAIL reservation line use telephone identifying information to select an initial region. For example, if you call Amtrak's reservation number in the Northeastern United States, the system presents options relating to the Boston-Washington line. However, if you call from California, the system presents information about travel between San Francisco and Los Angeles.

This can be accomplished by using the calling party's area code and/or exchange included with the telephone identifying information to select a region. The area codes and/or exchanges can then be paired to different scripts or default selections. For example, the area codes for New York City, e.g. "212", could be mapped to the Northeast Corridor

while San Francisco, "415", could be mapped to the San Francisco-Los Angeles line. However this does not change the kind of content presented and it is not user-selected.

e. Time Appropriate Information Presentation

Several services provide information through the telephone. That information may be adapted based on the time of day or date.

Some systems provide the information irrespective of the telephone identifying information. One example is Moviefone™, 777-FILM in most locales. Moviefone™ uses the current time at the called number to present appropriate information. The called number can be obtained using the dialed number identification service (DNIS). Thus, if you call Moviefone™ in the San Francisco Bay Area at 10 o'clock in the morning, only movies starting after 10 o'clock in the morning in the San Francisco Bay Area will be presented to you. However, if you call the Philadelphia Moviefone™, +1 (215) 222-FILM, from California, you will hear the Philadelphia movie times in Eastern Time. Thus, at 10 o'clock in the morning Pacific Time, a call to the Philadelphia Moviefone™ will produce information for Philadelphia show times after one o'clock in the afternoon Eastern Time at Philadelphia area theatres.

f. Targeted Advertising

Some free long distance services provide customized advertising to support their services. One example is FreeWay™ offered by Broadpoint, of Landover, Maryland. <http://www.broadpoint.com/>. These services require an explicit user registration process, typically using a computer to access a web site, to provide the service with a profile. Once the profile is provided, the advertising is targeted to the particular person's explicitly provided demographic information. In some instances, the advertising may be targeted both based on the caller's demographics and their location. Thus, callers from the

San Francisco Bay Area with a particular explicit demographic profile may be presented one ad, while callers from outside the San Francisco Bay Area may be presented with another ad. Another, similar, service is offered on by phone by UAccess, Inc., <http://www.uaccess.com/>, by calling +1 (800) UACCESS, and provides consumers targeted advertising based on profile information they enter.

g. Voice Character

Most telephone systems have a small number of voice actors. Continuing with the example of Moviefone™, one actor performs all of the menus and prompts. Other systems may use different voice actors for different subsystems.

These actors are typically selected on a system wide basis and as such, different voices, talents, speeds, characteristics, dialects, and other prosody aspects of the presentation are not user selectable.

h. Purchase Recommendations

Voice systems such as GALAXY from the Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, have been adapted to provide information about purchasing decisions for used cars. For example, GALAXY has been used to allow for interactive browsing of automobile classified ads. These voice systems are problem domain specific. Further, the systems are designed to locate vehicles matching a particular set of criterion, rather than making actual recommendations.

Other systems are web based. For example, Amazon.com will make book suggestions for users connected to the web via a computer. However, those suggestions are limited to a particular site, e.g. Amazon.com.

i. Voice Login

Most telephone systems require a user to explicitly identify herself/himself by using a combination of a login identifier, e.g. credit card number, account number, etc., and a personal identification number (PIN). Some systems abbreviate this process by allowing a user calling from a particular phone to shortcut this process slightly. For example, callers using a phone number associated with a particular credit card might only be asked to enter the last four digits of their credit card number together with their billing zip code instead of all sixteen digits of the card number. Other products such as Nuance Verifier™ from Nuance Communications, Menlo Park, California, support voice login capabilities, e.g. you just speak instead of entering a password.

j. Initial Profile Generation from Database Lookups

Most systems that provide information over the telephone require users to explicitly answer one or more questions in one form or another, e.g. over the phone, the web, and/or in written form. These questions form a demographic and/or psychographic profile for the user. All of these systems require the user to explicitly provide her/his profile information.

3. Telephone Commerce Systems

Prior techniques for telephone commerce have required users to explicitly identify themselves and provide credit card, or other billing information, for each transaction. For example, Moviefone™ allows consumers to purchase tickets for movies via a telephone interface. To purchase the tickets, the user must explicitly key her/his credit card information into the Moviefone™ system. For verification purposes, Moviefone™ requires the presence of the credit card when the tickets are picked up at the theatre.

Other automated systems operate similarly. Some systems record a user speaking her/his address either on tape, or in a computer memory, to allow for entry of the user's address information. These systems require offline processing by humans to key the voice entered data for order completion. Examples of these types of systems may include telephone operator base commerce, e.g. mail-order catalogs, and telephone based stock trading.

SUMMARY

A voice portal supporting telephone to web server commerce is described. The voice portal allows users to access web servers using a hypertext transfer protocol (HTTP), optionally including the use of a secure sockets layer (SSL) protocol, to complete commercial transactions. This allows the voice portal to complete transactions at non-voice enabled electronic commerce sites through a data connectivity engine supporting access to standard electronic commerce web sites.

Some embodiments of the invention employ a one word commerce model. This model abstracts the particular commerce model used by electronic commerce vendors, e.g. web site A uses a shopping cart model, web site B uses a one-click buy model, web site C uses a third purchase model. The one word commerce model permits a purchaser to identify a product and then signal her/his purchase intentions with a single word, phrase, or touch-tone command. Thus, the particular vendor's commerce – and fulfillment – model is irrelevant.

The voice portal can then complete the transaction by supplying the electronic commerce vendor all necessary information about the purchaser to complete the transaction. For example, the voice portal can provide the purchaser's address, telephone number, electronic mail address, credit card information, etc.

As needed, the voice portal can prompt the purchaser for information. For example, the first time a purchaser uses the voice portal, her/his shipping address may not be known to the voice portal. The voice portal can maintain a record of this information apart from a particular vendor. Thus, information need not be repeatedly collected and can be automatically re-used for future purchases at different vendors.

Further, embodiments of the invention can provide a record of commerce transactions in the form of voice receipts. The voice receipts can include a vendor specific tracking and status information. For example, the voice receipt may include tracking information such as the shipping status from the web site of an electronic commerce vendor as well as details of the purchase. Similarly, the voice receipt for a stock trade request could include the time of execution. the execution price, and/or other merchant specific information. The voice receipts can be reviewed over the telephone interface and/or from a web site coupled to the voice portal.

Selective password protection of the commerce features are afforded by some embodiments of the invention to reduce the likelihood of unauthorized transactions. For example, some embodiments require the user to provide a password, or other identification number, to the voice portal for the first commerce transaction of each telephone session.

Additionally, embodiments of the invention may employ a range of personalization techniques to assist purchasers in selecting items as well as in the presentation of suggested items. For example, the voice portal may supply customized commerce suggestions based on the time of day, the time of the year, special events in the user's locale, etc.

BRIEF DESCRIPTION OF THE FIGURES

Fig. 1 illustrates a system including embodiments of the invention used to provide personalized content to users of telephones according to telephone identifying information.

Fig. 2 illustrates the components of a voice portal supporting personalized content.

Fig. 3 is a process flow diagram supporting personalization and registration of and for users accessing a voice portal over a telephone interface.

Fig. 4 is a process flow diagram for personalizing a voice portal over a web based interface.

Fig. 5 is a process flow diagram for providing personalized content according to some embodiments of the invention.

Fig. 6 is a process flow diagram for conducting electronic commerce over a telephone interface according to some embodiments of the invention.

DETAILED DESCRIPTION

A. Introduction

A voice portal supporting electronic commerce over a telephone interface is described. The voice portal allows users of telephones, including cellular telephones, to access a voice portal by dialing a phone number to purchase goods and services. The information provided over the voice portal may come from the World Wide Web (WWW), databases, third parties, and/or other sources.

The term voice portal refers to the capability of various embodiments of the invention to provide commerce capabilities over a telephone interface to a caller. The voice portal can receive dual-tone multi-frequency (DTMF or touch-tone) commands as well as spoken commands to further control the content presented and direct commerce transactions as well as the manner of presentation. The term audio request, or input, is used to refer to either a voice or touch-tone input, or a combination of the two types of input.

Embodiments of the invention use telephone identifying information to personalize caller interactions with the voice portal. This allows the system to present highly customized information to each caller based on a personal profile the system associates with the telephone identifying information.

The invention will be described in greater detail as follows. First, a number of definitions useful to understanding the invention are presented. Then, the hardware and software architecture is presented in the System Overview. Then, a series of sections describe the various personalization features provided by different embodiments of the invention. Then, a section describes the electronic commerce capabilities of the system.

B. Definitions

1. Telephone Identifying Information

For the purposes of this application, the term telephone identifying information will be used to refer to ANI information, CID information, and/or some other technique for automatically identifying the source of a call and/or other call setup information. For example, telephone identifying information may include a dialed number identification service (DNIS). Similarly, CID information may include text data including the subscriber's name and/or address, e.g. "Jane Doe". Other examples of telephone identifying information might include the type of calling phone, e.g. cellular, pay phone, and/or hospital phone.

Additionally, the telephone identifying information may include wireless carrier specific identifying information, e.g. location of wireless phone now, etc. Also, signaling system seven (SS7) information may be included in the telephone identifying information.

2. User Profile

A user profile is a collection of information about a particular user. The user profile typically includes collections of different information as shown and described more fully in connection with Figure 6. Notably, the user profile contains a combination of explicitly made selections and implicitly made selections.

Explicitly made selections in the user profile stem from requests by the user to the system. For example, the user might add business news to the main topic list. Typically, explicit selections come in the form of a voice, or touch-tone command, to save a particular location, e.g. "Remember this", "Bookmark it", "shortcut this", pound (#) key touch-tone, etc., or through adjustments to the user profile made through the web interface using a computer.

In contrast, implicit selections come about through the conduct and behavior of the user. For example, if the user repeatedly asks for the weather in Palo Alto, California, the system may automatically provide the Palo Alto weather report without further prompting. In other embodiments, the user may be prompted to confirm the system's implicit choice, e.g. the system might prompt the user "Would you like me to include Palo Alto in the standard weather report from now on?"

Additionally, the system may allow the user to customize the system to meet her/his needs better. For example, the user may be allowed to control the verbosity of prompts, the dialect used, and/or other settings for the system. These customizations can be made either explicitly or implicitly. For example if the user is providing commands before most prompts are finished, the system could recognize that a less verbose set of prompts is needed and implicitly set the user's prompting preference to briefer prompts.

3. Topics and Content

A topic is any collection of similar content. Topics may be arranged hierarchically as well. For example, a topic might be business news, while subtopics might include stock quotes, market report, and analyst reports. Within a topic different types of content are available. For example, in the stock quotes subtopic, the content might include stock quotes. The distinction between topics and the content within the topics is primarily one of degree in that each topic, or subtopic, will usually contain several pieces of content.

4. Qualified

The term qualified as it is used in this application refers to whether or not a particular user being presented an advertisement, or other material, meets the demographic and/or psychographic profile requirements for that advertisement, or content. For example, a San Francisco-based bookstore might request that all listeners to its advertisement be

located in a particular part of the San Francisco Bay Area. Thus, a user of the system would be qualified if she lived in the designated part of the San Francisco Bay Area.

Different embodiments of the invention may qualify users of the system according to different requirements. For example, in some instances advertising, or content, is qualified solely based on telephone identifying information. In other embodiments the telephone identifying information is used in conjunction with other information such as an associated user profile, a reverse telephone number lookup for locale demographics, and/or other information.

5. Locale

As used in this application, the term locale refers to any geographic area. The geographic area may be a neighborhood, a city, a county, a metropolitan region, a state, a country, a continent, a group of countries, and/or some other collection of one or more geographic areas, e.g. all United State major metropolitan areas.

For this reason, a single user of the system may be considered to be in several locales. For example, a caller from Palo Alto, California, might be in the Palo Alto locale, a Silicon Valley locale, a San Francisco Bay Area locale, a Northern California locale, a California state locale, and a United States locale.

Thus, the telephone identifying information for a single telephone number can be mapped to a number of system-defined locales.

6. Voice Character

The term voice character as it is used in this application refers to all aspects of speech pronunciation including dialect, speed, volume, gender of speaker, pitch, language, voice talent used, actor, characteristics of speech, and/or other prosody values. Users can adjust the voice character of the system by changing their voice character settings.

For example, an elderly user could select voice character settings that provide louder volume and slower speech. Similarly, a caller from the South could adjust the voice character settings to support a Southern dialect.

7. Demographic and Psychographic Profiles

Both demographic profiles and psychographic profiles contain information relating to a user. Demographic profiles typically include factual information, e.g. age, gender, marital status, income, etc. Psychographic profiles typically include information about behaviors, e.g. fun loving, analytical, compassionate, fast reader, slow reader, etc. As used in this application, the term demographic profile will be used to refer to both demographic and psychographic profiles.

C. System Overview

First, the hardware and software architecture of a system including an embodiment of the invention will be described with reference to Figures 1-2. Figure 1 illustrates a system including embodiments of the invention used to provide personalized content to users of telephones according to telephone identifying information. The system of Figure 1 can be used to allow users of standard telephones and cellular telephones to access a voice portal with personalized content from their telephones.

The following lists the elements of Figure 1 and describes their interconnections. Figure 1 includes a telephone 100, a cellular telephone 101, a computer 102, a telephone network 104, an Internet 106, a telephone gateway 107, a web server 108, a voice portal 110, a shared database 112 and a personalized site 130. The cellular telephone 101 and the telephone 100 are coupled in communication with the telephone network 104. The telephone network 104 is coupled in communication with the telephone gateway 107. The telephone gateway 107 is coupled in communication with the voice portal 110. The

computer 102 is coupled in communication with the Internet 106. The Internet 106 is coupled in communication with the web server 108. The voice portal 110 and the web server 108 are coupled in communication with the shared database 112. The personalized site 130 is coupled in communication with the Internet 106.

The following describes each of the elements of Figure 1 in greater detail. The use of each of the elements will be described further in conjunction with the sections describing the personalization features.

The telephone 100 and the cellular telephone 101 are two different telephone interfaces to the voice portal 110. The telephone 100 and the cellular telephone 101 may be any sort of telephone and/or cellular telephone. For example the telephone 100 or the cellular telephone 101 may be a land line phone, a PBX telephone, a satellite phone, a wireless telephone, and/or any other type of communication device capable of providing voice communication and/or touch-tone signals over the telephone network 104. However, any audio signal carrying interface could be used.

The telephone network 104 may be the public switched telephone network (PSTN) and/or some other type of telephone network. For example, some embodiments of the invention may allow users with a voice over Internet Protocol (IP) phone to access the voice portal 110. The telephone network 104 is coupled to the telephone gateway 107 that allows the voice communications and/or touch-tone signals from the telephone network 104 to reach the voice portal 110 in usable form. Similarly, the telephone gateway 107 allows audio signals generated by the voice portal 110 to be sent over the telephone network 104 to respective telephones, e.g. the telephone 100. The telephone network 104 generally represents an audio signal carrying network.

The computer 102 is a computer such as a personal computer, a thin client computer, a server computer, a handheld computer, a set top box computer, and/or some

other type of visual web browsing device. The computer 102 is coupled in communication with the Internet 106, e.g. by a dial-up connection, a digital subscriber loop (DSL), a cable modem, and/or some other type of connection. This allows the computer 102 to communicate with the web server 108. The computer 102 typically provides a visual interface to the WWW and the web server 108 using web browsing software such as Internet Explorer™ from Microsoft Corporation, Redmond, Washington.

Both the web server 108 and the voice portal 110 are capable of communicating with the shared database 112 to register users, build personal profiles implicitly and/or explicitly as will be described more fully below. The database 112 stores profiles for each user based on an association between one or more pieces of telephone identifying information and a particular user. Thus, the database may have a profile for a user Sarah Smith that is keyed to her home telephone number, e.g. 650-493-####. Additionally, Sarah could associate other numbers, e.g. work, cellular, etc., with her profile either implicitly, e.g. by repeatedly calling the voice portal 110 from those numbers, or explicitly, e.g. by adding those numbers to the system directly.

In some embodiments, an existing profile for a web-based portal is adapted for use by the voice portal 110 by associating one or more telephone numbers with the existing profile as stored in the shared database 112. In these embodiments, the existing profile may be further modified for use with the voice portal 110 to allow for different preferences between the web and the voice interfaces.

The call flow arrows 114-122 shown on Figure 1 will be described in greater detail below.

Figure 2 illustrates the components of a voice portal supporting personalized content. This could be used to support the voice portal 110 and provide personal content as described above.

The following lists the elements of Figure 2 and describes their interconnections. The voice portal 110 is coupled in communication with the telephone gateway 107. The voice portal 110 includes a call manager 200, an execution engine 202, a data connectivity engine 220, an evaluation engine 222 and a streaming engine 224. Additionally Figure 2 includes elements that may be included in the voice portal 110, or which may be separate from, but coupled to, the voice portal 110. Thus Figure 2 also includes a recognition server 210, a text to speech server 214, an audio repository 212, the shared database 112, a database 226, the Internet 106, a database 228 and a web site 230. The call manager 200 within the voice portal 110 is coupled to the execution engine 202. The execution engine 202 is coupled to the recognition server 210, the text to speech server 214, the audio repository 212, data connectivity engine 220, the evaluation engine 222 and the streaming engine 224. The data connectivity engine 220 is coupled in communication with the shared database 112, the database 226 and the Internet 106. The Internet 106 is coupled in communication with database 228 and the web site 230.

The following describes each of the elements of Figure 2 in greater detail. The use of each of the elements will be described further in conjunction with the sections describing the personalization features.

Typically, the voice portal 110 is implemented using one or more computers. The computers may be server computers such as UNIX workstations, personal computers and/or some other type of computers. Each of the components of the voice portal 110 may be implemented on a single computer, multiple computers and/or in a distributed fashion. Thus, each of the components of the voice portal 110 is a functional unit that may be divided over multiple computers and/or multiple processors. The voice portal 110 represents an example of a telephone interface subsystem. Different components may be included in a telephone interface subsystem. For example, a telephone interface subsystem

may include one or more of the following components: the call manager 200, the execution engine, the data connectivity 220, the evaluation engine 222, the streaming subsystem 224, the audio repository 212, the text to speech 214 and/or the recognition engine 210.

The call manager 200 is responsible for scheduling call and process flow among the various components of the voice portal 110. The call manager 200 sequences access to the execution engine 202. Similarly, the execution engine 202 handles access to the recognition server 210, the text to speech server 214, the audio repository 212, the data connectivity engine 220, the evaluation engine 222 and the streaming engine 224.

The recognition server 210 supports voice, or speech, recognition. The recognition server 210 may use Nuance 6™ recognition software from Nuance Communications, Menlo Park, California, and/or some other speech recognition product. The execution engine 202 provides necessary grammars to the recognition server 210 to assist in the recognition process. The results from the recognition server 210 can then be used by the execution engine 202 to further direct the call session. Additionally, the recognition server 110 may support voice login using products such as Nuance Verifier™ and/or other voice login and verification products.

The text to speech server 214 supports the conversion of text to synthesized speech for transmission over the telephone gateway 107. For example, the execution engine 202 could request that the phrase, "The temperature in Palo Alto, California, is currently 58 degrees and rising" be spoken to a caller. That phrase would be translated to speech by the text to speech server 214 for playback over the telephone network on the telephone (e.g. the telephone 100). Additionally the text to speech server 214 may respond using a selected dialect and/or other voice character settings appropriate for the caller.

The audio repository 212 may include recorded sounds and/or voices. In some embodiments the audio repository 212 is coupled to one of the databases (e.g. the database 226, the database 228 and/or the shared database 112) for storage of audio files. Typically, the audio repository server 212 responds to requests from the execution engine 202 to play a specific sound or recording.

For example, the audio repository 212 may contain a standard voice greeting for callers to the voice portal 110, in which case the execution engine 202 could request play-back of that particular sound file. The selected sound file would then be delivered by the audio repository 212 through the call manager 200 and across the telephone gateway 107 to the caller on the telephone, e.g. the telephone 100. Additionally, the telephone gateway 107 may include digital signal processors (DSPs) that support the generation of sounds and/or audio mixing.

The execution engine 202 supports the execution of multiple threads with each thread operating one or more applications for a particular call to the voice portal 110. Thus, for example, if the user has called in to the voice portal 110, a thread may be started to provide her/him a voice interface to the system and for accessing other options.

In some embodiments of the invention an extensible markup language (XML)-style language is used to program applications. Each application is then written in the XML-style language and executed in a thread on the execution engine 202. In some embodiments, an XML-style language such as VoiceXML from the VoiceXML Forum. <http://www.voicexml.org/>, is extended for use by the execution engine 202 in the voice portal 110.

Additionally, the execution engine 202 may access the data connectivity engine 220 for access to databases and web sites (e.g. the shared database 112, the web site 230), the evaluation engine 222 for computing tasks and the streaming engine 224 for

presentation of streaming media and audio. The streaming engine 224 may allow users of the voice portal 110 to access streaming audio content, or the audio portion of streaming video content, over the telephone interface. For example, a streaming media broadcast from ZDNet™ could be accessed by the streaming engine 224 for playback through the voice portal.

The data connectivity engine 220 supports access to a variety of databases including databases accessed across the Internet 106, e.g. the database 228, and also access to web sites over the Internet such as the web site 230. In some embodiments the data connectivity engine can access standard query language (SQL) databases, open database connectivity databases (ODBC), and/or other types of databases. The shared database 112 is represented separately from the other databases in Figure 2; however, the shared database 112 may in fact be part of one of the other databases, e.g. the database 226. Thus, the shared database 112 is distinguished from other databases accessed by the voice portal 110 in that it contains user profile information.

Having described the hardware and software architecture supporting various embodiments of the invention, the various personalization features provided by different embodiments of the invention will now be described.

D. Telephone Driven Profile Building

Turning to Figure 3, the process of creating a profile using a telephone interface will be described. This process will be described with reference to the call flow arrows shown on Figure 1 as well.

The voice portal 110 is able to flexibly handle multiple callers from a single telephone, e.g. Tom and Dick are roommates and both call from 650-493-####. Similarly, the voice portal 110 is able to handle a single caller that uses multiple telephones, e.g.

Tom has a cell phone 650-245-####, his home phone 650-493-####, and a work phone 408-301-####. The manner in which the voice portal 110 can handle some of the above situations will be discussed throughout. In the example used while describing Figure 3, the process will be described using a caller Jane Smith as an exemplary caller who has never registered with the voice portal 110 from any telephone and an exemplary caller John Doe who has previously called the voice portal 110 from his telephone 100.

First, at step 300, telephone identifying information is received. This is shown in Figure 1 by call flow arrow 114 representing the transfer of telephone identifying information through the telephone gateway 107 to the voice portal 110. This step occurs after a user has placed a call to the voice portal 110 with a telephone, e.g. the telephone 100.

Next, at step 302, a determination is made as to whether the telephone identifying information corresponds to a known profile, e.g. is the user registered? Some examples may be illustrative. If Jane Smith uses the cellular telephone 101 to call the voice portal 110 for the first time, her telephone identifying information will not be associated with any existing unique profile in the shared database 112. Therefore, at step 302, the determination would be made that she is not registered and the process would continue at step 304. In contrast, John Doe has previously called the voice portal from the telephone 100 and so his telephone identifying information will be associated with a profile in the shared database 112 and the process would continue at step 306.

If, the telephone identifying information is not associated with an existing profile in the shared database 112, a new profile is created at step 304. The new profile may be initialized using a variety of information derived from the telephone identifying information and/or predetermined values for the voice portal 110. Thus, for example, when Jane Smith calls for the first time from the cellular telephone 101, an initial profile

can be created using the calling number, e.g. 650-493-####, included in the telephone identifying information to select initial profile settings. The call flow arrow 116 shows this process on Figure 1. The use of the telephone identifying information to create an initial profile is discussed below in the section "Automatic Profile Initialization".

In some embodiments, the profile is not initialized using the telephone identifying information. In other embodiments, the user may be explicitly queried by the voice portal 110 to create one or more components of the initial profile, e.g. "Please speak your first name", to allow for more personalized prompting by the voice portal 110. Once a profile is created, the process continues at step 306.

At step 306, the profile is retrieved from the shared database 112 as shown by the call flow arrow 118. The profile can be updated throughout the call based on the user's behavior and actions -- implicit preferences -- as well as explicit requests from the user to customize the voice portal 110. Once a profile is selected at step 306, the personalized content can be presented to the user as shown by the call flow arrow 122 in Figure 1.

For example, John Doe, who is calling from the telephone 100, already has a profile in the shared database 112. That profile may indicate that John prefers a southern dialect and likes to hear a quick stock market report immediately on call in. Thus, for John, his telephone identifying information serves to log him directly into the system and trigger the personalized behavior unique to him: a quick stock market report in a southern dialect. In contrast, a different caller, Sarah Brown, from a different telephone will be provided different personalized content based on that telephone identifying information.

The voice portal may support multiple callers from a single telephone. For example, Sarah Brown and John Doe may both use the telephone 100 to call the voice portal 110. In the case where two or more profiles are identified with the same telephone

identifying information, the voice portal may prompt for a password or other unique identifier, either as voice or touch-tone, to select among the profiles.

However, as a general matter, the voice portal is configured to minimize the need for a caller to provide a password. Thus, during a single call session, the caller is typically only asked to provide her/his password a single time. However, some embodiments of the invention may require that a password always be used to complete commercial transactions and/or after the passage of a predetermined period, e.g. ten minutes since last password prompt. In some embodiments, the user may adjust her/his profile to allow login without a password for playback features.

Also, a single profile can be associated with multiple calling numbers. For example, the user Jane Doe could specify that both the telephone 100 and the cellular telephone 101 should be associated with her profile. Similarly, if Jane calls from a new telephone, e.g. pay phone, she can provide her existing telephone number and her password to access her profile. In some embodiments, whenever the user calls from a new telephone number, she/he is prompted as to whether to remember the number for future use. In some embodiments, additional telephone identifying information, e.g. this is a pay phone, is used so that the caller is not prompted to associated telephone numbers that are likely to be single time uses with her/his profile. Similarly, voice verification may be used to recognize a caller's voice instead of, or in addition to, using a password or other identification number.

Typical events that would require a password, or that the user be authenticated previously with a password, might include adding and removing items from the user profile through explicit commands as well as requests for specific personal information. e.g. that user's stock portfolio, bank account balances, etc.

It is not necessary for callers to the voice portal 110 to explicitly specify their preferences using this embodiment of the invention. The callers' behaviors and actions are used by the voice portal 110 to adopt implicit preferences, sometimes after receiving confirmation. For example, behaviors and actions reflecting repeated access to a content in a particular topic, or a particular topic, may cause the voice portal 110 to automatically include the repeatedly requested content in the default message.

For example, if a caller from New York City repeatedly asks for the weather in San Francisco, the system can add the San Francisco weather to the standard weather report. Alternatively, the system may request confirmation before adding the weather report, e.g. "Would you like me to include San Francisco in the standard weather report?" Similarly, at the level of topics, users who repeatedly ask for information about business related issues may find that the system will adjust the main menu to include business. Similarly, if that same user never asks for sports scores, that option may drop off the main menu. In some embodiments, the system may ask for confirmation before modifying the menu choices, or the system may notify the user of a modification and/or allow a user to review/change past modifications. As a result, the structure and content of the call may change, e.g. San Francisco weather will be announced at the beginning of future calls and sports information may be omitted.

Through the use of this process, the need for a specialized editing mode of the type seen on customizable web portals is reduced. The user's actions and behaviors shape the options presented to her/him. Thus, reducing the need to explicitly pick topics and/or content in an editing mode. However, some embodiments of the invention may allow for explicit profile creation in an editing mode over the web, see below, and/or over the telephone. Also, users are typically permitted to add and remove topics and/or items at

will with explicit commands, e.g. "Remember this", "Remove", "Add to my stock list", etc.

E. Web Driven Profile Building

Turning to Figure 4, the process of modifying a profile for use over a telephone interface over the web will be described. This process will be described with reference to the call flow arrows shown on Figure 1 as well.

The process shown in Figure 4 assumes that a profile has already been created, e.g. by calling for the first time as described above. However, in some embodiments of the invention, users may create profiles using the web interface by providing the telephone identifying information for their primary calling phone number and a password. As is the case with the telephone registration process described in step 304, the telephone identifying information provided, here the primary calling phone number, can be used to create the initial profile.

Starting at step 400, the profile is accessed using a computer (e.g. the computer 102) via a web interface. The web interface is provided by a web server (e.g. the web server 108) and allows for access to the shared database 112 as shown by the call flow arrow 120.

Once the user has signed in to access her/his profile on the computer, she/he can manually identify content and topics to build her/his profile at step 404. This can be supported by allowing the user to specify topics from a list of topics and then specifying per topic content from a list of content. For example, the topics might include business, sports, news, entertainment, and weather, to name a few. The user could include weather, news, and business in her/his main menu and then further customize the specific content to be presented within those topics. For example, within weather, the user might select the

specific cities she/he wants listed in her/his weather menu and/or the cities for which the weather is automatically played.

Alternatively, at step 402, the user can identify a web location with personalized content to use in building her/his profile, e.g. a uniform resource indicator (URI). For example, Figure 1 includes the personalized site 130. The personalized site 130 could be a customized portal web page, e.g. myYahoo!, My Netscape, etc., a home page the user herself/himself has designed, and/or any other web page that includes content of interest to the user. The user can identify the personalized site with a uniform resource indicator (URI), including a login identifier and password if necessary, e.g. for myYahoo! The personalized site 130 can then be accessed and the pertinent user preferences. e.g. news, stocks, selected. Taking the example of a customized portal site, the main topics selected, e.g. horoscopes, and the content within, Sagittarius, could be adopted. However, the voice portal 110 may present its own content for that particular item, e.g. the version of the Sagittarius horoscope on the voice portal 110 not the version from the personalized site 130.

The processes of step 402 and step 404 can be used together allowing a user to quickly transfer preferences from a web portal to her/his voice portal while still supporting explicit personalization.

Alternatively, in some embodiments of the invention, an existing web portal profile is voice enabled for use by a voice portal through the association of telephone identifying information with the existing web portal. In this embodiment, at step 402, the telephone identifying information, e.g. the primary calling number, is associated with an existing web profile, e.g. myYahoo! profile, stored in the shared database 112 and that existing web profile is then usable from the voice portal 110 either using voice or touch-tone commands.

Additionally, web sites like the personalized site 130 may be accessed using the voice portal 110 in some embodiments of the invention through the use of the data connectivity engine 220 as shown in Figure 2.

F. Profile Building Via Other Web Sites

Some embodiments of the invention may allow users of the voice portal 110 to add to their profile from other web sites. For example, if a user of the computer 102 is accessing a web site (e.g. the personalized site 130), the web site might include a link like "Add this to your voice portal." Thus, for example, from a service such as MapQuest™ or Ameritrade™, the user could click on a link to add a particular piece of content or a particular topic to their portal for the voice portal 110.

For example, a user could add her/his "QQQ" stock symbol to her/his profile on the voice portal 110 even though the voice portal 110 may be operated independently of the particular web site.

This type of web based profile building allows for widespread profile building for the voice portal 110 from a variety of Internet sites. Also, in some embodiments, the web browser software on the user's computer (e.g. the computer 102) can support an option to add a bookmark to the user's profile stored in the shared database 112 for the voice portal 110. For example, a menu option in the browser on the computer 102 might include "Add Page to Voice Portal Shortcuts" and upon selecting that menu option, the current web page would be added to the user's profile on the voice portal 110.

This would typically be accomplished by accessing a URI on the web server 108 that included the information to be added. At that point, the web server 108 might ask for a primary calling phone number and/or a password. In some embodiments, a cookie stored by the browser on the computer 102 may be used to obviate one or both of these steps.

After the user provides the information, or it is accepted automatically, a confirmation page may be shown including a return link to the originating web page. Several example URI's for adding content are shown below:

```
<http://www.voiceportal.com/add.cgi?topic=stock%20quote&content=QQQ>
<http://www.voiceportal.com/add.cgi?shortcut=MapQuest&ref=www.mapquest.com/voice.vxml>
<http://www.voiceportal.com/add.cgi?shortcut=myYahoo&ref=my.yahoo.com/voice.vxml&login=jdoe>
```

These examples are illustrative of the various types of URI's that can be placed as links on web sites to allow users of the voice portal 110 to further customize their profile.

G. Locale Based Personalization

Turning to Figure 5, the basic personalization framework used by several embodiments of the invention is presented. At step 500, a request is made for content, or a topic. Then one or more of steps 502-510 take place, in parallel or sequence, and then the content is presented at step 512. Which of steps 502-510 occur for a given request may be determined based on the topic or content requested. For example, step 504 can be omitted when non-time dependent information is presented.

Turning to step 502, the customization of content based on the calling locale. The telephone identifying information includes information about the caller's locale independent of any user provided registration information. This information can be derived from telephone routing tables that provide a descriptive name for each area code/exchange combination within the North American Numbering Plan (NANP). Thus, the phone number 650-493-#### would be associated with "Palo Alto, California". Similarly, 650-592-#### would be associated with "San Carlos, California".

This information may be directly present in the telephone identifying information provided to the voice portal 110, or may be ascertained from a local exchange routing guide (LERG). For international callers outside the NANP, similar types of telephone

identifying information can be mapped to locales within countries to the extent permitted by the particular numbering plan.

The city-state combination may correspond to multiple locales for the purposes of the voice portal 110. For example, a county-wide or multi-city locale can be defined that encompasses multiple area code/exchange combinations. Thus, a single caller may be in multiple locales.

Locale information can be further refined through the use of additional databases, e.g. city/state to zip code databases, street address to five digit zip code databases, reverse lookup databases that map phone numbers to street addresses, longitude-latitude conversion databases, and/or other databases that provide locale related information from telephone identifying information. Thus, for example, V and H coordinates might be determined using the telephone identifying information. Those can be further converted to a longitude and latitude to determine the locale. Alternatively, a reverse phone number database could be used to find a specific street address for the telephone identifying information.

Examples of the uses for the locale information include: providing locale-appropriate lottery results, providing driving directions to a requested destination, providing locale-appropriate weather reports, providing locale-appropriate show times for movies other events, e.g. cultural, governmental, etc., traffic reports, yellow page listings, and/or providing other locale-related information.

H. Time/Date Based Personalization

Turning to step 504, the customization of content based on the time and/or date will now be described. The telephone identifying information includes information about the caller's locale independent of any user provided registration information. This

information can be derived from telephone routing tables that provide a descriptive name for each area code/exchange combination within the NANP. Thus, the phone number 650-493-#### would be associated with "Palo Alto, California" and thus the correct time zone, Pacific, could be selected as well.

This time zone may be directly present in the telephone identifying information provided to the voice portal 110, or may be ascertained from the LERG. For international callers outside the NANP, similar types of telephone identifying information can be mapped to locales within countries to the extent permitted by the particular numbering plan. Thus, callers from United Kingdom numbers would be mapped to British Standard Time.

The time zone information allows the voice portal 110 to customize the presentation of information based on the time in the caller's locale. Callers can use a single nationwide, or international, number to reach the voice portal 110, e.g. 800-###-####. The voice portal 110 will use the time zone information to adjust the content presented to each user.

Thus, during the lunch hour, the voice portal 110 might report a stock quote to the user while on a Friday evening, the voice portal 110 might suggest a movie. For example, "It is Friday night, would you be interested in seeing a movie?" A "yes" response by the caller will lead to the presentation of a list that is both time and date adapted and locale appropriate. For example, a caller from Palo Alto at six o'clock p.m. on a Friday would hear about show times after six o'clock p.m. in his local area.

If necessary, the voice portal 110 may connect the user to an appropriate transaction system to complete a user requested transaction such a the purchase of an airline ticket, a movie ticket, an audio CD, etc. However, in many instances, the voice portal 110 may be able to directly complete the transaction using the data connectivity

engine 220 and access to the Internet 106 and/or one more databases (e.g. the database 226). This process can occur even if the caller has not explicitly provided the voice portal 110 her/his home location or the current time. For example, this personalized content might be presented immediately at after step 304 of Figure 3 in step 306.

Similarly, other time sensitive information can be presented such as airline schedules, cultural and other events, etc. Thus, for example a caller asking for flight times to New York from a 650-493-#### telephone number might be prompted to select one of the three local airports: San Francisco International, San Jose International, and Oakland International, and then the flight times to New York after the current time in the Pacific time zone would be presented.

Some additional examples include customizing the presentation of business reports based on whether or not the market is open; modifying the greeting prompt based on the time of day; and providing traffic information automatically during commute hours, but not at other times.

I. Targeted Advertising

Embodiments of the invention support the presentation of targeted advertising, or other content, to callers of the voice portal 110 as shown at step 508. The two primary types of targeted advertising supported by embodiments of the invention will be described. The different types of targeted advertising can be combined as well.

1. Based Solely on Telephone Identifying Information

Telephone identifying information can be used to reference demographic information about callers from a particular area. For example, if the telephone identifying information includes the calling number 650-493-####, corresponding to Palo Alto, California, general demographic information about callers from that particular region can

be used to target the advertising, or other content. Further, if a reverse lookup database is used, the phone number can, in some instances, locate specific demographic information for a given household, or caller.

This personalization allows the targeting of advertising to qualified callers by the voice portal 112. For example, an advertiser of expensive luxury vehicles might request that its callers be qualified based on their income, or a particular psychographic attribute, e.g. fun-loving. In that case, the demographic profile corresponding to the telephone identifying information can be used to qualify the caller. Thus, callers from the relatively affluent city of Palo Alto, California might receive the advertising. Similarly, if a particular household meets the requirements based on a reverse lookup, those households can receive the advertising as well.

2. Based on Profile

Another source of information about the caller is the profile used by the shared database 112. This profile may indicate interests based on the explicit and implicit preferences, e.g. likes sports, and can be used in combination with the telephone identifying information to more closely tailor ads to the caller.

For example, if the caller has added movie and entertainment information to her/his profile, either explicitly or implicitly, advertising related to movies and entertainment could be favored over other qualified advertising based on the caller's profile. Other examples include providing brokerage, and other financial services, advertisements to callers who frequently check stock quotes and/or have a customized stock list.

J. Adaptive Voice Character

Turning to step 508, the customization of content through adaptive voice character will now be described. The telephone identifying information includes information about the caller's locale independent of any user provided registration information. The locales may be associated with one or more standard voice character settings, e.g. for dialect, and also idiomatic speech. Thus, callers from California may receive different prompts and a different dialect from the voice portal then callers from Florida.

Similarly, the telephone identifying information may include information about the type of phone, e.g. pay phone, hospital phone, etc., that can be used to adjust the voice character, e.g. louder and slower speech.

Additionally, the caller's speaking voice may be used to refine the voice character of the system. Thus, callers with speech patterns from a particular region of the country may find that after several verbal interactions with the voice portal, the content being presented at step 512 is being spoken using a voice character more suited to their own speech patterns. Similarly, in response to callers who request that information be repeated several times, the voice character for those callers may be slowed and played back louder. Additional examples include allowing users to select different voice actors, different background music and/or sound effects, control the verbosity of prompts, etc.

K. Purchase Recommendations

Turning to step 510, the customization of content through purchase suggestions. Based on the caller's profile -- as retrieved through the telephone identifying information -- and/or demographic information from other sources, e.g. locale based and/or reverse lookup, the system can make purchasing suggestions.

The suggestions could be based on the caller's locale and what others in that locale have purchased. In other embodiments, the suggestions may be based on the profile of the user relative to other user's purchases. In some embodiments, approaches such as collaborative filtering are used to generate recommendations.

Examples of recommendations may include particular goods and services, e.g. flowers for Mom a few days before Mother's Day. Further, the exact suggestion may vary based on the caller's past habits, e.g. in the past you bought chocolates so this year chocolates might be suggested again. Alternatively, if many people from your locale are buying a particular book that might be suggested as well. The particular purchase recommendation may relate to goods and services offered independently, by, and/or in affiliation with the operator of the voice portal 110.

L. Voice Login

As discussed above, the system may support the use of one or more passwords, either spoken or touch-tone for login and authentication purposes. The passwords provide for protection against modifications to a user's profile without authentication. Additionally, certain specific actions, e.g. making a purchase, listening to certain types of personalized content, etc., may require authentication.

Typically, the authentication system will support either a voice or a touch-tone password for users of the voice portal 110. This flexibility addresses situations where the voice password is not working due to line conditions and/or conditions of the calling telephone. Products such as Nuance Verifier™ and/or other voice login and verification products may be used to provide the voice login feature. In some embodiments, both types of authentication may be required.

Once logged in, or authenticated, embodiments of the invention may minimize the need for the user to re-authenticate herself/himself, as described above. Additionally, the password, either voice and/or touch-tone, used for authentication for telephone sessions may be the same or different as any passwords used for authentication for web access to the profile customization options described in conjunction with Figure 4.

M. Automatic Profile Initialization

As discussed in conjunction with Figure 3, it may be desirable to initialize the profile using the telephone identifying information. The telephone identifying information can be used to select an appropriate demographic profile and list of topics based on the calling locale. In other embodiments, a reverse lookup of the calling number provided with the telephone identifying information is used to obtain a specific demographic profile for a caller and/or her/his household.

Then the demographic information derived from the locale and/or the reverse lookup are used to set initial profile values. For example, the user's income might be estimated based on the average income for the calling locale, e.g. Palo Alto, California, or from demographic information from the reverse lookup. Similarly, the caller's initial topics might be selected based on commonly selected topics for her/his locale and/or the preferences available based on the demographic information retrieved by the reverse lookup.

These initial values may be revised based on a caller's later actions. For example, if the initial estimate of a caller's age is too high, later actions may cause that information to be revised. Similarly, callers may be permitted to explicitly provide certain types of demographic information as needed. For example, the user might provide her/his birth

date to a horoscope feature provided by the voice portal 110, in that instance, the birth date might be incorporated into the profile.

N. Electronic Commerce Features

The preceding discussion has focused on personalization of content for users accessing the voice portal 110. This section describes special commerce features within various embodiments of the invention. A transcript from a possible interaction between a user ("C") and the voice portal 110 ("S") will be provided. The transcript will be discussed segment by segment. In some instances, phrases will be included between angle brackets, e.g. "<>", in those cases an appropriate substitution with the indicated value(s) should be made. After the dialogue from the transcript is discussed the process will be described in greater detail with respect to Figure 6.

1. Sample Dialogue Transcript

1	S	<Introduction>
2	S	<Optional Sponsorship>
3	S	You can interrupt the system at any time.
4	S	If you need assistance, say "help".
5	S	Main Menu. Options: stocks, news, personal or travel.
6	C	Travel.
7	S	Welcome to the flight reservations system.
8	S	What city would you like to depart from? San Francisco, Oakland, or San Jose?
9	C	San Francisco.
10	S	San Francisco. What city are you flying to?
11	C	Las Vegas.
12	S	Las Vegas. On what date would you like to depart?
13	C	June first.
14	S	June first. Around what time would you like to depart?
15	C	7 p m
16	S	Seven p m. How many travelers?
17	C	one
18	S	One traveler. Will this be round trip or one way?
19	C	Round trip
20	S	Round trip. On what day would you like to return?
21	C	June seventh
22	S	June seventh. Around what time would you like to return?
23	C	Nine a m
24	S	Nine a m. One moment while I locate flights.

Transcript Segment 1

Turning to the first segment of the transcript. The voice portal 110 introduces itself to the user at lines 1-5. Notice that sponsorship information can be inserted into the conversation, e.g. line 2. For example, the voice portal might offer a personalized advertisement, see above, at line 2. The sponsorship might also be personalized topically based on the subject matter of the purchase, e.g. travel.

In this example, the user is attempting to purchase an airline ticket. The user lives in Palo Alto, California, and so the personalization features of the system described above allow the system at line 8 to prompt the user with the most likely departure airports. Thus, the personalization features are easily combinable with the commerce features of embodiments of the invention. In appropriate circumstances, the list provided might be adjusted based on the user's present location as opposed to the user's home. For example, if the user were to call from a pay phone in Washington, D.C., the airports in the D.C. area might be listed in addition to, or instead of, the San Francisco area airports.

At lines 9-24 of the transcript, the user provides information to clarify her/his purchase requests. Airline tickets require a more elaborate dialogue than say music CDs because there is more information to specify.

In contrast, if at line 6 the user said, "Music", and that was a valid option, the system might ask for the artist or album name. Then, the user might be prompted to select from a short list of found items. For example, the user might say "98 Degrees" and the system might offer "There are three albums from 98 Degrees, please select 98 Degrees, 98 Degrees and Rising, or 98 Degrees Christmas." Upon selecting one or more of those albums, the conversation could then continue.

Continuing with the transcript for the airline ticket purchase:

25 S	<Airline> is offering a special fare of $248 for flights to Las Vegas in June. To hear more about this offer, say "<Airline>". To hear a list of other flights, say "more flights".
26 C	<Airline>
27 S	<Airline> flight 2315, departs San Francisco on June 1st, at 7:14 p.m. and arrives in Las Vegas at 9:50 p.m. The return flight is <Airline> flight 7006, departing Las Vegas on June 7th, at 8:40 a.m., and arriving in San Francisco at 10:10 p.m.
28 S	To reserve this <Airline> flight, say "reserve it". To hear a list of other flights, say "more flights".
29 C	Reserve it.
30 S	Your <Airline> flight has been reserved. Your <Airline> confirmation number is <Confirmation Number>.
31 S	Remember, that you can view details of this transaction, as well as others, at voiceportal.com.
32 S	To purchase this ticket, please say "purchase", say "hold" to hold the reservation for twenty-four hours.
33 C	Purchase

Transcript Segment 2

Lines 25 through 33 of the transcript show the recommendation and reservation process. At line 25, the system is generating a recommendation. This recommendation may be based on a match between the user's requested schedule and the best fare for that schedule. Additionally, other preferences could be taken into account.

For example, between lines 24 and 25 of the dialogue, the system could access the user profile to determine that the user prefers to fly Southwest Airlines. That preference may be derived from either an implicit, or explicit, personalization, see above. As a result, the recommendation generated at line 25 may be based on that preference and as a result Southwest Airlines flights might be suggested first.

Also, between lines 29 and 30 of the dialogue the voice portal 110 can access the user profile corresponding to the telephone identifying information to assist in completing the transaction. More specifically, the user's full name, address, shipping information, credit card number, and/or other personal information can be retrieved from the user's profile. Also, embodiments of the invention can support other types of payments than credit cards, most generally any form of payment identifier can be used, e.g. automated check clearinghouse (ACH) information, electronic currency, credit card numbers, smart

card payment certificate, and/or other suitable forms of payment and identification of that payment can be used.

This information can then be provided to the merchant to complete the transaction. If the information is not available in the user's profile, it can be obtained from the user. Users need not be re-prompted for information already in their profile, even for new merchants. Thus, if the user's full name and address are in the profile, no questions would have to be asked at this point of the example dialogue because only a name and address are needed to reserve an airline ticket.

In contrast, if that information was not known, the voice portal 110 could interactively obtain the necessary information prior to continuing at line 30 of the dialogue and reserving the ticket. If necessary, or appropriate, a human operator may be brought on the line to receive the information and update the user's profile. Typically, voice and/or touch tone responses may be used in conjunction with information about the user's calling locale as derived from telephone identifying information to update the information without the assistance of a human operator.

Once the user's profile contains adequate information to complete the required function, e.g. reserve an airline ticket, the voice portal 110 can complete the task. This might be done by accessing a database (e.g. the database 228) belonging to the airline over the Internet 106, or some other network or communication channel. For example, the reservation database for Southwest Airlines might be accessed directly using electronic data interchange (EDI) format, extensible markup language (XML), and/or some other protocol. Those same protocols may have been used to obtain the flight information from the database at line 25 of the dialogue.

In other instances, the execution engine 202 and the data connectivity engine 220 may access a web site 230, or a web server, and perform the necessary transactions.

Specifically, the voice portal could respond to the purchase command by executing a request to a server using the HTTP protocol or the secure hypertext transfer protocol (HTTPS). The secure socket layers (SSL) protocol can be used to ensure the privacy and security of the transaction. For example, if Southwest Airlines has a web site (e.g. the web site 230) that supports electronic commerce using SSL, HTTPS and/or HTTP, the data connectivity engine 220 could supply the requisite information to the web site 230 to place a reservation and/or purchase tickets.

In these situations, the data connectivity engine 220 and the voice portal 110 acts in a similar fashion to a user's web browser. The voice portal 110 accesses the web site 230 for the user and provides information in appropriate fields from the user's profile. This interaction with a web site may occur while the user waits or in the background, with confirmation provided to the user at a later point.

In some instances, one or more web site descriptions may be developed to allow access by the data connectivity engine 220 to web sites for commerce purposes. The web site description may describe how to search for products and services. For example, a uniform resource indicator (URI) for the search engine and the format for search queries for a particular web site (e.g. the web site 230) might be included. The web site description may also specify how to parse search results. The web site descriptions may specify how to initiate a purchase transaction and as well as a mapping between user profile information and fields on the web site's forms. The web site description may specify how to parse confirmation and transaction results. The web site descriptions allow the data connectivity engine 220 to act as an automated agent for the user. Further, they also allow for the generation of a cross-merchant record of all purchases made with the voice portal 110, e.g. a voice receipt. Notification of the creation of a voice receipt is shown in line 31 of the sample transcript. These voice receipts may be accessible over the web as suggested

by line 31 of the dialogue. Voice receipts may also be reviewed directly within the voice portal 110 in some embodiments of the invention.

The voice receipt may contain information about a purchase, e.g. product/service, description, time of purchase, merchant/vendor/provider name, price paid, credit card used, order number, confirmation number, status -- e.g. on backorder, shipped, 24 hours to purchase, awaiting trade execution, etc. -- and/or other information relating to the transaction.

Notably, the status information may be obtained through dynamic access to one or more merchant data sources. For example, if the voice receipt was for a trading request, the status information might be obtained from the brokerage company's computer systems by the data connectivity engine 220. The voice receipts offer a powerful management tool to users for tracking purchases made using the voice portal at multiple merchants. As in the case of this airline example, the voice receipt may include helpful information, e.g. the confirmation number, in a secure easily accessible location, obviating the need to manually record it with pen and paper at the time of the transaction.

In this example with airline tickets, a distinction is made between reserving the tickets and purchasing them. This distinction is specific to this type of product because airlines allow customers to reserve tickets for twenty-four hours before purchasing them. At lines 31-33 of the dialogue, the user requests the purchase of the airline ticket.

34 S	In order to complete this transaction using one your credit cards on file, we need to confirm your identity. Please speak or touch-tone your password. If you prefer to use a different credit card, please speak or touch-tone that credit card number now.
35 C	<Password>
36 S	We have confirmed your identity. Which credit card would you like to use? <Card1> <Card2>, or <Card3>
37 C	<Card2>
38 S	Thank you, now processing your transaction.
39 S	<Musical Interlude>
40 S	Your ticket has now been purchased using your <Card2> credit card. You can review details of this transaction as well as others at voiceportal.com or by requesting "Receipts" from the main menu.

Transcript Segment 3

In this example, this is the first transaction for this telephone session, as such the voice portal 110 requests password confirmation from the user before allowing the purchase to be completed. In some embodiments of the invention, the user is prompted for a password for all purchases. In other embodiments, a password is only requested for the first purchase in each telephone session. In other embodiments, the password is requested a single time in each session for all purposes. In some embodiments of the invention, users of wireless telephones may, as a default setting, not be required to provide a password since it is assumed that the wireless telephone is not shared by multiple users.

The ability to quickly reference credit card information already on file improves transaction speed by eliminating the need for the user to re-provide information. This same approach can be used to select shipping addresses. For example, the system might prompt, "Do you want this order sent to your billing address, home address or work address?" to allow the user to select a shipping address for delivery of products.

The commerce model employed by the voice portal 110 is designed to allow purchases using a single command, "Purchase", or similar phrases. In other words, the neither a password, a credit card selection, need be required from the user. Thus, the user input must specify a product selection and the user must issue the "Purchase" command.

Accordingly, the voice portal need not maintain a shopping cart, or similar construct for a user, store, or session. Further, the commerce model of the voice portal 110 is independent of the commerce model used by any merchant. Thus, the voice portal 110 may enable its users to buy items from web sites that use a shopping cart model using the one word purchase commerce model of the voice portal 110. Thus, the purchase of multiple CDs at a music store by a user of the voice portal 110 can each be treated as separate purchases. Further, for each CD, all order information may be provided to the merchant by the voice portal 110 as outlined above.

The order fulfillment process used by a given merchant may group related purchases from a user over a predetermined time period, e.g. session, day, week, month, etc. For example, the voice portal 110 might combine all CD purchases made in a single session into a single order in the merchant's computer systems. Alternatively, the merchant may combine the separate orders for fulfillment purposes.

Similarly, if desirable, the voice portal 110 may group distinct purchases from a single merchant within a predetermined time period, e.g. session, day, week, month, etc., into a single voice receipt with, if appropriate, status information for the individual items and/or the group of items as a whole.

Additionally, the voice portal 110 may support a number of additional electronic commerce features. For example, accessory services may be provided relative to a purchase, e.g. status change notifications for a product. For example, the voice portal 110 might prompt, "For twenty-five cents, we can notify you if your flight is delayed or changed, say 'notify me', to request this service." Similarly, the voice portal 110 might prompt, "For ten cents, we can send you an alpha-numeric page when your trade is executed, say 'page me', to request this service."

In some instances, there may be no charge for the accessory service. The accessory service may be available irrespective of whether a particular merchant/vendor supports a feature. For example, a brokerage firm might provide e-mail trade confirmations. However, the voice portal 110 may use its interface to the brokerage systems to independently provide other features, e.g. pager notification.

Similarly, the voice portal 110 may recommend related products, e.g. cross-sell. So in the example above of purchasing hotel tickets to Las Vegas, the system dialogue might prompt the user: "Our records indicate that <Convention> is being held in Las Vegas during your stay and hotel availability is low, would you like to book a hotel room now?"

If the user says yes, the dialogue can unfold much as it did for the purchase of the airline ticket.

2. Process Detail

Figure 6 is a process flow diagram for conducting electronic commerce over a telephone interface according to some embodiments of the invention. The process of Figure 6 could be used by the voice portal 110 to provide electronic commerce over a telephone interface. Throughout the discussion of Figure 6, it will be assumed that the user has been identified by the voice portal 110, as in Figure 1, e.g. using the telephone identifying information 114. Alternatively, some embodiments of the invention may use alternative means to identify the caller to the voice portal, e.g. an explicit login process.

First, at step 600, an audio request is received to initiate a transaction. This request may take the form of the user requesting a specific topic within the voice portal 110, e.g. travel, stock trading, music store, etc., or a more specific request, e.g. the user might say "I want to buy the new CD from 98 Degrees." Other audio input formats, including touch-tone are possible.

Next, at step 602, the voice portal 110 conducts an audio dialogue with the user to more specifically identify the product or service they wish to purchase. For the purposes of this discussion, a product will be considered either a product or a service. For example, if the user has entered the travel category, a dialogue like the example above for airline tickets might unfold. In contrast, in music, or some other type of, store, the user might be prompted to provide search terms, or other product identifiers. Once, the voice portal 110 has identified a product with sufficient specificity, any of steps 604-608 may occur. Steps 604-608 may occur in parallel, in sequence, based on user requests, and/or asynchronously in the background.

For example, the user might automatically be presented a recommendation at step 606, e.g. a specific product like the CD "98 Degrees and Rising" or the specially priced airline ticket. Meanwhile, price comparisons for that product at different merchants could occur in the background at step 604. Also, a list of

The dialogue process of step 602 and the processes of steps 604-608 may occur iteratively until the user has identified a product she/he wishes to purchase. Thus in the airline ticket purchase example above, if the user was not satisfied with the recommendation, the user could request a list of flights at step 608. If she/he was still not satisfied, she/he could return to step 602 and adjust her/his request.

At step 610, a purchase confirmation is received from the user for the identified product. The confirmation from the user typically takes the form of a single word or command phrase such as "Purchase" or "Buy It", or a similar phrase. Because the user's identifying information is already available based on the associated profile for the telephone identifying information, it is not necessary to input names, addresses, and credit card numbers typically. If telephone identifying information is unavailable, then the user may be required to login and identify herself/himself. However, the provision of address information and credit card information, etc., would still be automated.

Periodically, for security purposes a password, or other identifier, may be requested from the user in conjunction with step 610. For example, the first purchase of each telephone session might require a password identifier.

At step 612, the order is then placed with the merchant. The order may be placed through a number of electronic means. Notably, the order may be placed directly through a general purpose electronic commerce web site (e.g. the web site 230) using SSL and/or HTTPS with the voice portal 110 acting as a browser on behalf of the user. The voice portal 110 can fill out forms on the web site using information from the user profile. In

other embodiments, XML, EDI, and/or other proprietary or non-proprietary formats are used to place the order with the merchant. These same techniques can be used at steps 604-608 to access information about products and services available for sale. Thus, it is not necessary for merchants to specially design their electronic commerce sites to support the voice portal 110 or the purchase model used by the voice portal 110. However, for efficiency reasons a particular web site may provide a custom mechanism for the voice portal 110 to conduct commerce via HTTP, HTTPS and/or SSL as well as a custom data exchange format for obtaining information and placing orders.

Additionally, a voice receipt can be generated for the transaction at step 612. The voice receipt includes information about the transaction as described above. When appropriate, status information can be included as part of the voice receipt. The status information can be dynamically obtained from the appropriate merchant for inclusion in the voice receipt when it is reviewed. For example, an order for CDs might have shipping status information extracted directly from the merchant at the time the voice receipt is reviewed. The voice receipts may be reviewed on a web site for the voice portal 110 and/or on the voice portal 110 itself, e.g. over the telephone

The process of Figure 6 omits data collection steps that may, in some instances, be necessary to complete certain types of orders. For example, basic information such as name, address, shipping address, and credit card number are needed for many transactions. That information can be collected as needed for various purposes throughout the entire voice portal 110. Thus, an earlier request for driving directions may have provided the user's address to the voice portal 110. As part of step 610, additional data can be collected either using audio input and output to a computer or to a human operator. The user of the voice portal 110 may not even be aware that a human operator is receiving her/his input for entry into her/his profile. In addition, reverse lookup information can be used to derive

the user's name and address or assist in verification of the user's input. The voice portal 110 minimizes the need for re-entry of data by maximizing usage of user profile information across different merchants/vendors.

Still other embodiments of the invention allow a user to signal on a web site to have the vendor contact them to complete the transaction by telephone. This may allow for better support of customers who are uncomfortable making purchases over the Internet and/or make it easier for customers to make purchases from new vendors. For example, if Jane Doe already has a profile established with the voice portal 110, then she can circumvent the purchase process at a particular merchant by clicking on a link to have the voice portal 110 call her. In some instances, the user may be asked to provide her/his phone number on the web site.

Still other information that is needed may be product/service specific, e.g. type of seating, pant size, etc. That information may be obtained as part of the dialogue at step 602 and/or stored as user preferences by the voice portal 110.

In some embodiments of the invention, a list of items may be presented to a user, e.g. a top *n* list of books, music, etc. The voice portal 110 may pause briefly between items in the list to receive a purchase request, e.g. "Buy It" or a touch-tone signal. Thus, the purchase model is extended to handle purchases from a list of items. This may also be helpful when the user has requested a search and wants to purchase one of the items provided in the result list.

O. Conclusion

Thus, the voice portal 110 can serve as a telephone to HTTP, HTTPS, and/or SSL gateway for commerce purposes. Further, the voice portal 110 supports a one word purchase commerce model that greatly reduces the overhead of completing transactions

with multiple vendors using the telephone interface. Further, the model abstracts the particular purchase/transaction/vending model used by the vendor in favor of a uniform interface provided by the voice portal 110. Typical embodiments of the invention may support one or more words, phrases, or DTMF signals for use as the purchase command in the one word purchase model.

A number of different personalization features provided by embodiments of the invention have been described, those features can be combined in a number of ways to provide personalized commerce services.

In some embodiments, voice portal 110 can be hardware based, software based, or a combination of the two. In some embodiments, voice portal 110 is comprised of one or more computer programs that are included in one or more computer usable media such as CD-ROMs, floppy disks, or other media. In some embodiments, call manager programs, execution engine programs, data connectivity engine programs, evaluation engine programs, streaming subsystem programs, recognition server programs, and/or text to speech programs are included in one or more computer usable media.

Some embodiments of the invention are included in an electromagnetic wave form. The electromagnetic waveform comprises information such as call manager programs, execution engine programs, data connectivity engine programs, evaluation engine programs, streaming subsystem programs, recognition server programs, and/or text to speech programs. The electromagnetic waveform may include the programs accessed over a network.

The foregoing description of various embodiments of the invention has been presented for purposes of illustration and description. It is not intended to limit the invention to the precise forms disclosed. Many modifications and equivalent arrangements will be apparent.

Fig 1

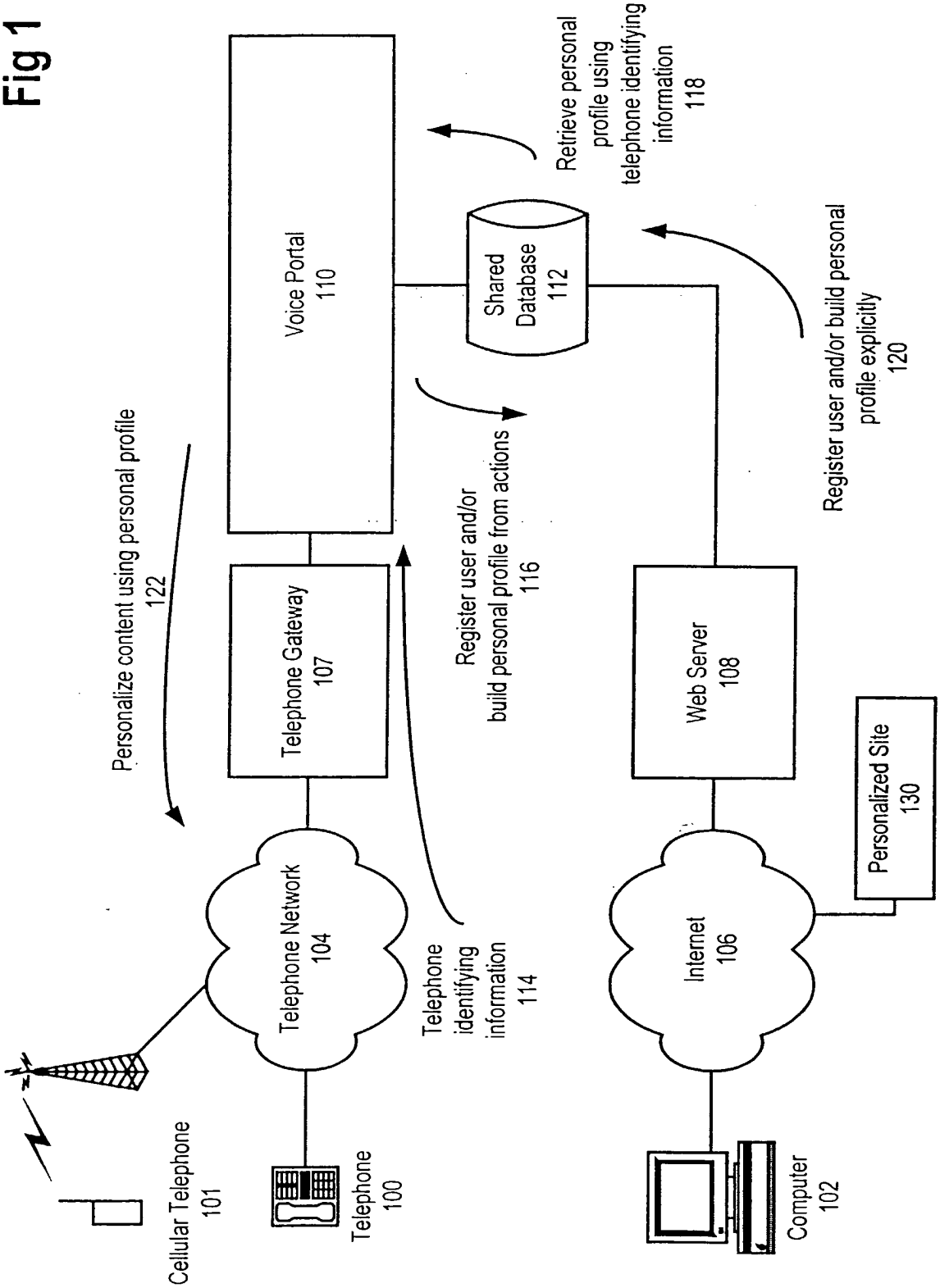

Voice Portal
110
Shared Database
112
Retrieve personal profile using telephone identifying information
118
Register user and/or build personal profile explicitly
120
Personalize content using personal profile
122
Telephone Gateway
107
Register user and/or build personal profile from actions
116
Web Server
108
Telephone Network
104
Telephone identifying information
114
Internet
106
Personalized Site
130
Cellular Telephone
101
Telephone
100
Computer
102

Fig 2

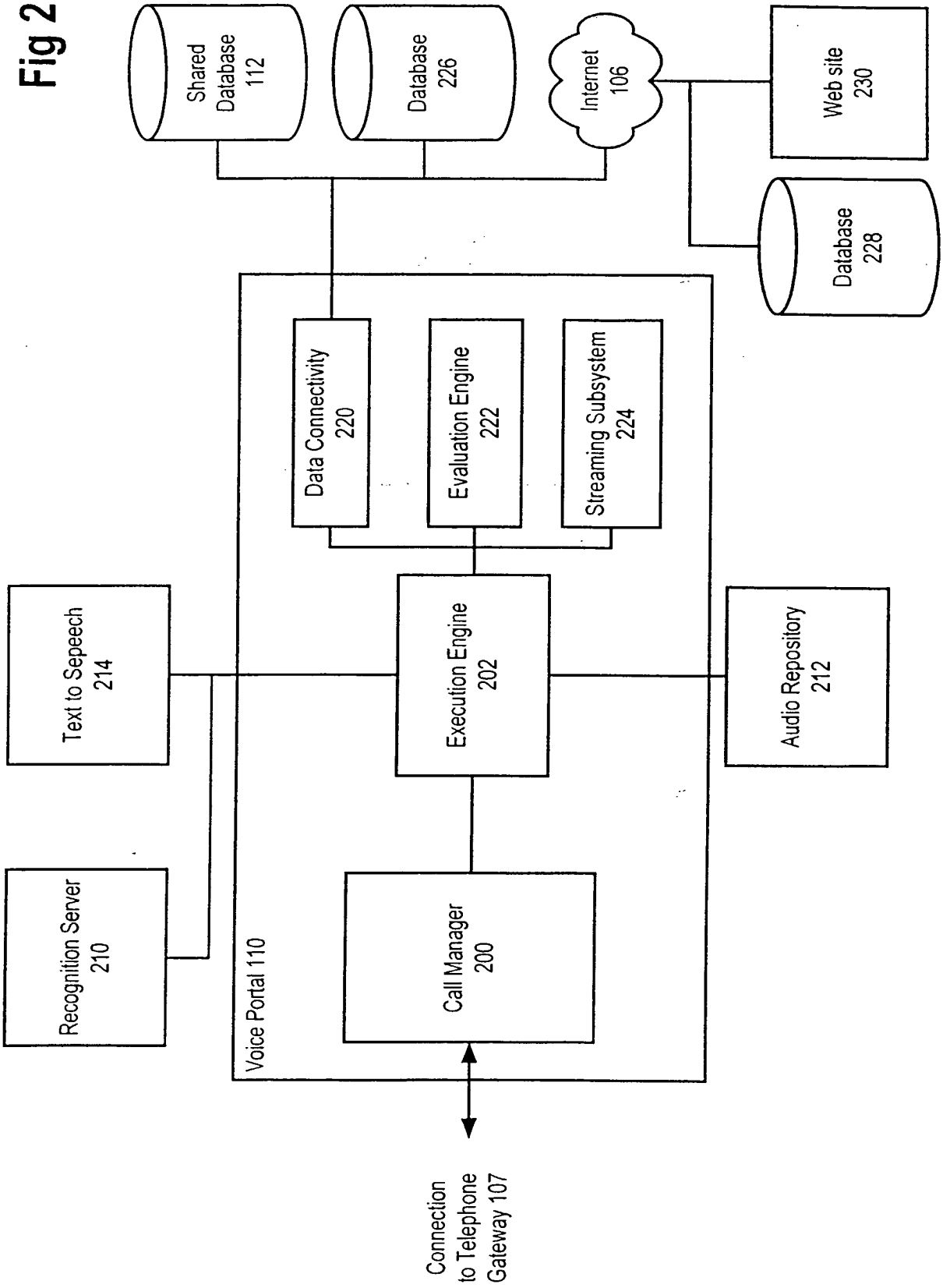

Shared Database 112
Database 226
Internet 106
Web site 230
Database 228
Data Connectivity 220
Evaluation Engine 222
Streaming Subsystem 224
Text to Sepeech 214
Execution Engine 202
Audio Repository 212
Recognition Server 210
Call Manager 200
Voice Portal 110
Connection to Telephone Gateway 107

Fig 4

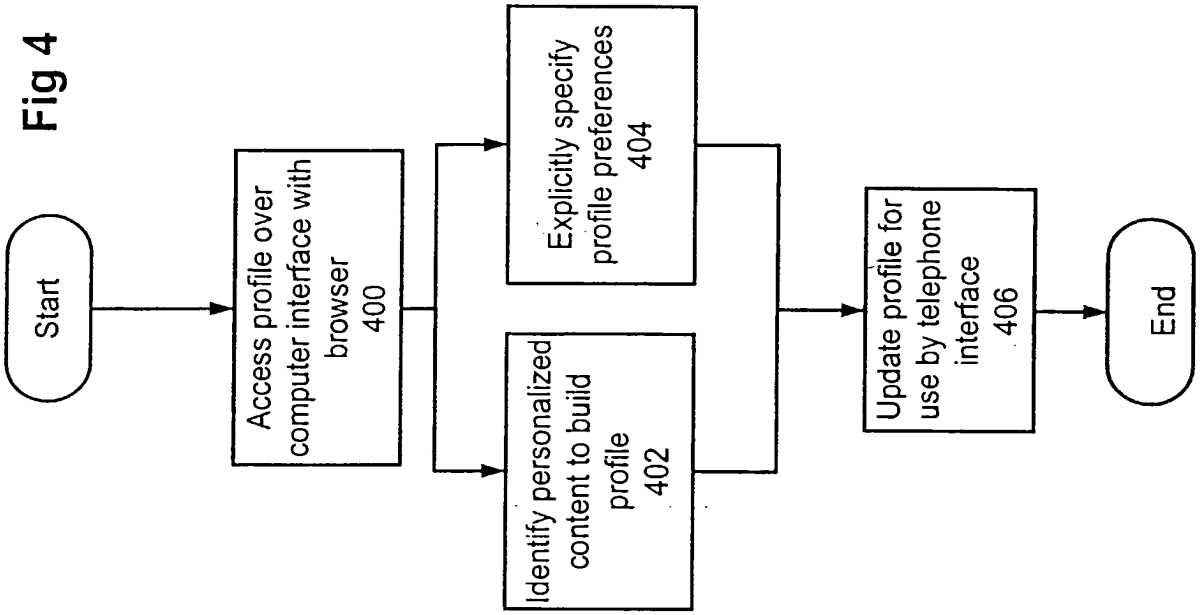

Start
Access profile over computer interface with browser 400
Explicitly specify profile preferences 404
Identify personalized content to build profile 402
Update profile for use by telephone interface 406
End

Fig 3

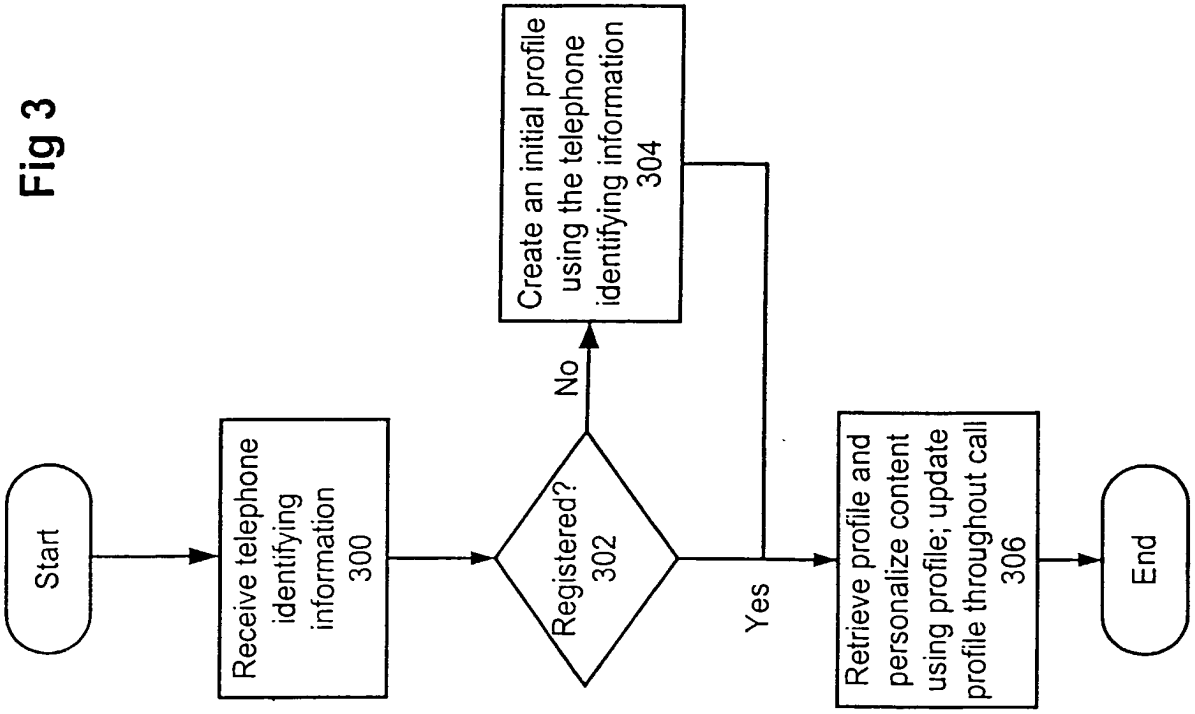
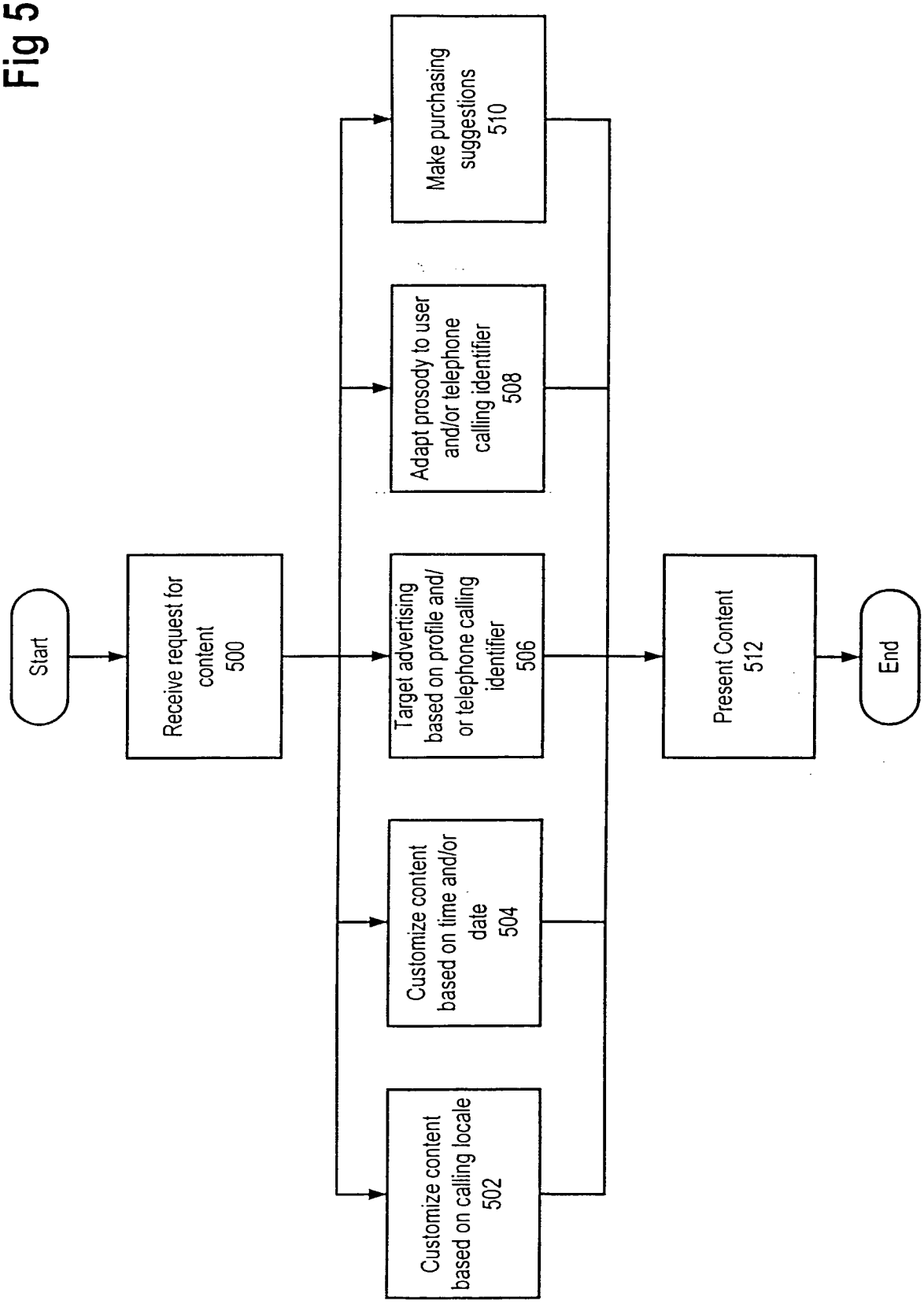

Start
Receive telephone identifying information 300
Registered? 302
No
Create an initial profile using the telephone identifying information 304
Yes
Retrieve profile and personalize content using profile; update profile throughout call 306
End

Fig 5


Start
Receive request for content 500
Customize content based on calling locale 502
Customize content based on time and/or date 504
Target advertising based on profile and/ or telephone calling identifier 506
Adapt prosody to user and/or telephone calling identifier 508
Make purchasing suggestions 510
Present Content 512
End

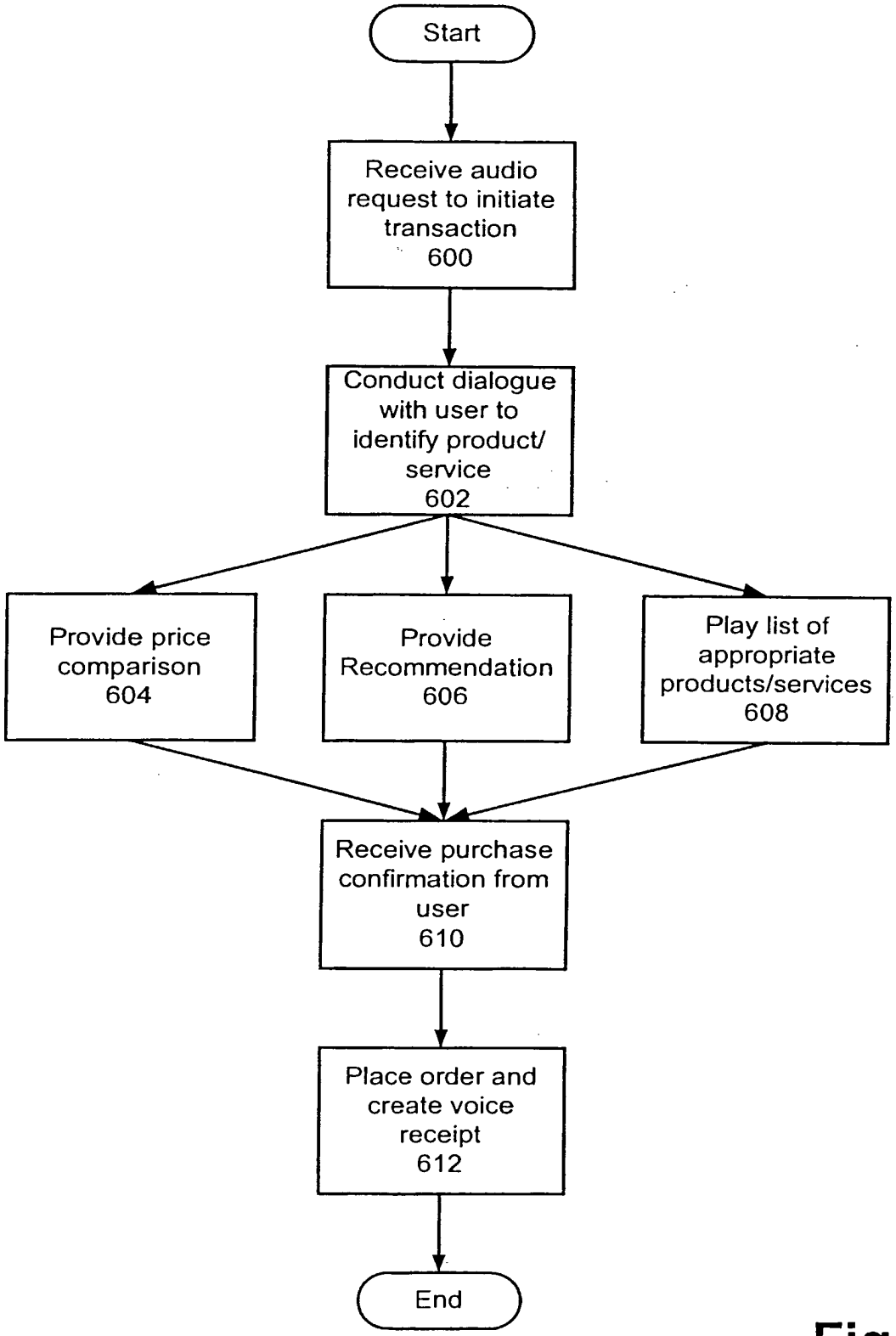

Start
Receive audio request to initiate transaction 600
Conduct dialogue with user to identify product/ service 602
Provide price comparison 604
Provide Recommendation 606
Play list of appropriate products/services 608
Receive purchase confirmation from user 610
Place order and create voice receipt 612
End

Fig 6

CLAIMS

What is claimed is:

1. A method of providing an electronic commerce transaction from the Internet to a telephone using a computer system, the computer system including a telephone interface system coupled in communications with an Internet access system, the telephone interface system being coupled in communications with the telephone, the method comprising:

receiving an audio request over the telephone interface system, the audio request corresponding to a product for sale from a merchant, the merchant providing electronic commerce on the Internet using a second computer system;

responsive to the audio purchase request, performing the following

sending a first request to the second computer system over the Internet access system, the first request corresponding to a request for information about the product,

receiving a first response from the second computer system over the Internet access system, the first response corresponding to an information about the product,

providing an audio response over the telephone interface system, the audio response corresponding to the information, and

receiving an audio confirmation over the telephone interface system; and

responsive to the audio confirmation, performing the following

sending a second request to the second computer system over the Internet access system, the second request corresponding to a request to purchase or order the product from the merchant;

receiving a second response from the second computer system over the Internet access system, the first response corresponding to a confirmation of the first request; and

providing a second audio response over the telephone interface system, the second audio response indicating completion of the electronic commerce transaction.

2. The method of claim 1, wherein the telephone interface system receives a telephone identifying information, the method further comprising:

accessing a user profile corresponding to the telephone identifying information, the user profile corresponding to information about a user; and

including information from the user profile in at least one of the first request and the second request.

3. The method of claim 2, further comprising:

providing a third audio request over the telephone interface system, the third audio request corresponding to a request for at least one of a name, an address, a credit card number, a credit card expiration date, an electronic mail address, and a telephone number;

receiving an audio information response over the telephone interface system, the audio information response corresponding to at least one of a name, an address, a credit card number, a credit card expiration date, an electronic mail address, and a telephone number; and

including the corresponding at least one of a name, an address, a credit card number, a credit card expiration date, an electronic mail address, and a telephone number in the user profile.

4. The method of claim 1, further comprising responsive to the second response, generating a voice receipt, the voice receipt corresponding to information about the electronic commerce transaction.

5. The method of claim 4, wherein the voice receipt includes at least one of a name of the product, a description of the product, a name of the merchant, a contact information for the merchant, a price paid for the product, an order number, a confirmation number, and a status.

6. The method of claim 4, further comprising:

receiving an audio request, the audio request corresponding to a request to review the voice receipt; and

responsive to the audio request, providing a second audio response over the telephone interface, the second audio response corresponding to information from the voice receipt.

7. The method of claim 1, wherein the receiving the audio purchase request comprises receiving a verbal request for a product, performing voice recognition on the verbal request to determine the product.

8. The method of claim 1, wherein the receiving the audio purchase request comprises receiving a series of one or more touch tone signals and decoding the series of one or more touch tone signals to determine the product.

9. The method of claim 1, wherein the receiving the audio purchase request comprises receiving a verbal request for a merchant, performing voice recognition on the verbal request to determine the merchant.

10. The method of claim 1, wherein the receiving the audio purchase request comprises receiving a series of one or more touch tone signals and decoding the series of one or more touch tone signals to determine the merchant.

11. The method of any one of the preceding claims wherein the audio request is a purchase request.

12. A computer system to provide an electronic commerce transaction from the Internet to a telephone, the computer system comprising:

an Internet interface including at least one program to access a second computer system using one or more of a SSL protocol, a HTTP, and a HTTPS;

a telephone interface to send and receive audio signals to and from the telephone and to receive a telephone identifying information corresponding to the telephone; and

a control subsystem to control the Internet interface and the telephone interface, the control subsystem including at least one program for

processing an audio request to purchase a product from a merchant, the merchant providing electronic commerce on the Internet using the second computer system, and

completing the electronic commerce transaction for the product with the merchant over the Internet interface responsive to an audio confirmation.

13. The computer system of claim 12, wherein the at least one program in the control subsystem further for accessing a user profile corresponding to the telephone identifying information, the user profile corresponding to information about a user and wherein the completing further comprises providing at least a portion of the user profile to the merchant over the Internet interface.

14. The computer system of claim 12, wherein the at least one program in the control subsystem further for generating a voice receipt responsive to the completing, the voice receipt corresponding to information about the electronic commerce transaction.

15. A computer system performing an electronic commerce transaction over a telephone, the computer system receiving a telephone identifying information associated with the telephone, the electronic commerce transaction performed over the Internet, the computer system comprising:

means for receiving an audio request to initiate the electronic commerce transaction;

means for selecting a product from a merchant using an audio dialogue, the merchant providing electronic commerce on the Internet using a second computer system;

means for receiving audio confirmation of the electronic commerce transaction of the product; and

means for completing the electronic commerce transaction over the Internet with the second computer system.

16. The computer system of claim 15, wherein the means for completing further comprises:

means for accessing a user profile corresponding to the telephone identifying information, the user profile corresponding to information about a user;

means for providing at least a portion of the user profile to the second computer system over the Internet to complete the electronic commerce transaction.

17. The computer system of claim 15, further comprising means for providing a voice receipt of the electronic commerce transaction, the voice receipt corresponding to a record of the electronic commerce transaction.

18. The computer system of claim 15, wherein the means for selecting comprises:

means for comparing prices for the product at a plurality of merchants;

means for providing a list of a predetermined number of merchants from the plurality of merchants over the telephone, the predetermined number of merchants offering the product at a lower price than other merchants in the plurality of merchants; and

means for receiving an audio selection of one of the merchants in the list, the selection corresponding to the merchant.

19. A method of ordering an item over a telephone, the telephone coupled to a computer system by a telephone interface, the computer system supporting access to an Internet for completing commerce transactions, the method comprising:

presenting information about the item in audio format over the telephone interface using the computer system; and

responsive to a single audio response received by the computer system over the telephone interface:

retrieving telephone identifying information associated with the telephone to identify a profile associated with the purchaser; and

sending a request to order the item, the request including information from the profile about the purchaser to a second computer system on the Internet, the second computer system operated by a merchant selling the item.

20. The method of claim 19, wherein the request is sent to the second computer system over the Internet using a secure hypertext transfer protocol (HTTPS) and the request includes a payment identifier from the user profile.

21. The method of claim 2 or 19, wherein the profile includes at least one of a name, an address, a credit card number, a credit card expiration date, an electronic mail address, and a telephone number.

22. The method of claim 2 or 19, wherein the profile includes information obtained from a reverse directory lookup on the telephone identifying information.

23. The method of claim 2 or 19, wherein the second computer system includes a web server providing an HTML order form, and wherein the request to order the item comprises HTML form data corresponding to information from the profile.

24. The method of claim 2 or 19, wherein the second computer system includes a web server supporting an HTTP protocol, and wherein the request to order the item comprises data corresponding to information from the profile sent using the HTTP protocol.

25. The method of claim 1 or 19, wherein computer system communicates with the second computer system over the Internet using one or more of a secure sockets layer

(SSL) protocol, a hypertext transfer protocol (HTTP), and a secure hypertext transfer protocol (HTTPS).

26. The method of claim 25, wherein the request to order the item includes at least one of hypertext markup language (HTML) data and extensible markup language (XML) data sent to the second computer system using HTTPS.

27. The method of claim 25, wherein the second computer system includes a web server providing an HTML order form, and wherein the request to order the item comprises HTML form data corresponding to an order for the product.

28. The method of claim 19, further comprising after the request to order the item, generating a voice receipt, the voice receipt corresponding to information about the order of the item.

29. The method of claim 28, wherein the voice receipt includes at least one of a name of the item, a description of the item, a name of the merchant, a contact information for the merchant, a price paid for the item, an order number, a confirmation number, and a status.

30. The method of claim 4 or 28, wherein the voice receipt includes a status, the status corresponding to information retrieved from the second computer system about the order of the item.

31. A method of completing a purchase of an item over a telephone, the telephone coupled to a first computer system by a telephone interface, the first computer system supporting access to an Internet, the method comprising:

receiving a signal from a second computer system over the Internet, the signal corresponding to a request to place a telephone call to a user at a telephone number to complete the purchase of the item;

calling the user over the telephone at the telephone number using the telephone interface using the first computer system;

conducting an audio dialogue over the telephone interface with the user using the first computer system to obtain at least one of a name, an address, a credit card number, a credit card expiration date, an electronic mail address, a telephone number, a confirmation of the purchase, and a password; and

completing the purchase of the item by sending a message to the second computer over the Internet, the message including at least a portion of personal identifying information obtained in the audio dialogue.

32. The method of claim 31, wherein the conducting the audio dialogue comprises:

identifying a user profile associated with the telephone number;

making an audio request, the audio request corresponding to a request for a password from the user;

receiving an audio response, the audio response corresponding to a password from the user; and

wherein the completing occurs responsive to verification of the password provided by the user against the password in the user profile.

33. A method of completing a purchase from a list over a telephone, the telephone coupled to a first computer system by a telephone interface, the telephone supplying telephone identifying information to the first computer system over the telephone

interface, the first computer system supporting access to an Internet, the list including a plurality of items, the method comprising:

identifying a user profile associated with the telephone identifying information;

using the computer to present each of the plurality of items in the list over the telephone interface; and

responsive to an audio response, completing a purchase of a most recently presented item on a second computer system coupled in communication with the first computer system over the Internet using the user profile.

34. The method of claim 33, wherein a pause of a predetermined amount of time is inserted between the presentation of each item.

35. A method of storing information received over a telephone interface in a data storage coupled to a computer, the telephone coupled to the computer by a telephone interface, the method comprising:

using the computer to prompt a user for information over the telephone interface;

receiving an audio signal over the telephone interface;

sending the audio signal from the computer to an audio interface, the audio interface for presenting the audio signal to a human;

receiving a data signal on the computer, the data signal corresponding to a speech recognition result for the audio signal by a human; and

responsive to receiving the data signal, updating the data storage to include the speech recognition result.

36. The method of claim 35, wherein the speech recognition result indicates that the human could not process the audio signal, the method further comprising repeating the

3 method until the speech recognition result no longer indicates that the human could not
4 process the audio signal.
1

Electronic Patent Application Fee Transmittal

Application Number:	16417178
Filing Date:	20-May-2019
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Filer:	Timothy P. Cremen/Susan Trader
Attorney Docket Number:	62KC-298931

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	240	240
		Total in USD ($)		**240**

Electronic Acknowledgement Receipt

EFS ID:	39719588
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Timothy P. Cremen/Susan Trader
Filer Authorized By:	Timothy P. Cremen
Attorney Docket Number:	62KC-298931
Receipt Date:	15-JUN-2020
Filing Date:	20-MAY-2019
Time Stamp:	14:53:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$240
RAM confirmation Number	E20206EF00484219
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	62KC-298931_Transmittal-Letter.pdf	502175 bdc3942aaf857c08503567ca1778c18ea3a16855	no	1
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	62KC-298931_PTO_IDS-Form.pdf	1053223 16410bc4918a3fef3842327c4028f3cc9fd67c9b	no	4
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.					
3	Foreign Reference	62KC-Foreign-001.pdf	1182656 c03ee5063d0435c9b769b83ce73aac73b66b1695	no	11
Warnings:					
Information:					
4	Foreign Reference	62KC-Foreign-002.pdf	2401990 f2e4a95037eae892be9fcec617da060fafd51cb7	no	66
Warnings:					
Information:					
5	Non Patent Literature	62KC-NPL-001.pdf	3610276 dc79a2458b8d97146e75c311e20cfe19186920b2	no	40
Warnings:					
Information:					

6	Fee Worksheet (SB06)	fee-info.pdf	30523 ae25295edc2da3ea5e3e265c87b69b9d074b4409	no	2

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	16/417,178
	Filing Date	05/20/2019
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
Page 1 of 1	**Matter Number**	62KC-298931

GENERAL

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.

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.

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.

TIMING

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.

CERTIFICATION STATEMENT

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.

FEE

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).

ADDITIONAL COMMENTS

These documents were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided.

SIGNATURE

Signature	/ Timothy P. Cremen /	**Date**	2020-06-15
Name	Timothy P. Cremen	**Registration Number**	50,855

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

133759 7590 06/23/2020

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

EXAMINER	
YEN, ERIC L	

ART UNIT	PAPER NUMBER
2658	

NOTIFICATION DATE	DELIVERY MODE
06/23/2020	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

PTOL-90A (Rev. 04/07)

Supplemental ***Notice of Allowability***	**Application No.** 16/417,178	**Applicant(s)** BALDWIN et al.	
	Examiner ERIC YEN	**Art Unit** 2658	**AIA (FITF) Status** 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 6/15/2020.
   ☐ 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 1-4,7-14 and 17-26 . 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** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

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

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/ERIC YEN/
Primary Examiner, Art Unit 2658

Notice of References Cited	Application/Control No. 16/417,178	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-20010014857-A1	08-2001	WANG, ZIFEI PETER	G10L25/78	704/231
*	B	US-6081779-A	06-2000	Besling; Stefan	G10L15/065	704/240
*	C	US-20060247919-A1	11-2006	Specht; Jeffrey	H04K3/825	704/201
*	D	US-20030154082-A1	08-2003	Toguri, Yasuhiro	G10L17/00	704/268
*	E	US-20040128514-A1	07-2004	Rhoads, Geoffrey B.	B42D25/29	713/176
*	F	US-20050169441-A1	08-2005	Yacoub, Sherif	H04M3/4936	379/88.16
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	Art Unit
	ERIC YEN	2658

CPC - Searched*		
Symbol	Date	Examiner
G10L 15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	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 14/691445	12/12/2019	EY
EAST Search (attached)	12/12/2019	EY
EAST Search (attached)	04/16/2020	EY
Review IDS references	06/17/2020	EY
EAST Search (attached)	06/17/2020	EY

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G10L	15/1815, 15/1822, 15/183, 15/22, 2015/225, 2015/228, 2021/02166, 25/51	12/12/2019	EY

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	Art Unit
	ERIC YEN	2658

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

CPC						
Symbol					**Type**	**Version**
G10L	/	15	/	18	F	2013-01-01
G10L	/	15	/	1815	I	2013-01-01
G10L	/	15	/	1822	I	2013-01-01
G10L	/	25	/	51	I	2013-01-01
G10L	/	15	/	22	I	2013-01-01
G06F	/	40	/	30	I	2020-01-01
G10L	/	25	/	63	I	2013-01-01
G06F	/	3	/	167	I	2013-01-01
G10L	/	17	/	22	I	2013-01-01
G10L	/	2015	/	228	A	2013-01-01
G10L	/	2015	/	225	A	2013-01-01
G10L	/	2021	/	02166	A	2013-01-01
G10L	/	15	/	183	A	2013-01-01
G10L	/	2015	/	0631	A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	17 June 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200617

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G10L15/18	/	15	/	18
G10L25/51	/	25	/	51
G10L15/22	/	15	/	22
G06F40/30	/	40	/	30
G10L25/63	/	25	/	63
G06F3/16	/	3	/	16
G10L17/22	/	17	/	22
G10L21/0216	/	21	/	0216
G10L15/183	/	15	/	183
G10L15/06	/	15	/	06

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	17 June 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200617

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/417,178	BALDWIN et al.
	Examiner	**Art Unit**
	ERIC YEN	2658

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	13	12	11	23										
2	2	14	13	20	24										
3	3	15	14	21	25										
4	4	16	17	22	26										
5	7	17	18												
6	8	18	19												
7	9	19	20												
8	10	9	21												
12	11	10	22												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ERIC YEN/ Primary Examiner, Art Unit 2658	17 June 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office Part of Paper No.: 20200617

Bibliographic Data

Application No: 16/417,178

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

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/20/2019	704	2658	62KC-298931
RULE			

APPLICANTS

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Blane EBERSOLD Seattle, WA, UNITED STATES

Chris WEIDER Seattle, WA, UNITED STATES

CONTINUING DATA

This application is a DIV of 14691445 04/20/2015 PAT 10297249

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

13987645 is a DIV of 13251712 10/03/2011 PAT 8515765

13251712 is a CON of 11580926 10/16/2006 PAT 8073681

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

05/28/2019

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
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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)

Application Number	16417178
Filing Date	2019-05-20
First Named Inventor	Larry BALDWIN
Art Unit	2658
Examiner Name	Eric L. Yen
Attorney Docket Number	62KC-298931

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	103229206A	CN		2013-07-31	EZPAYY INC		X
	2	0129742A2	WO		2001-04-26	TELLME NETWORKS INC		☐

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/ERIC YEN/ 06/17/2020

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

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[5]
	1	Office Action issued in Chinese Patent Application No. 201580060519.1 on March 13, 2020, with its English translation, 40 pages.	

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EXAMINER SIGNATURE

Examiner Signature	/ERIC YEN/	Date Considered	06/17/2020

*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.

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Application Number	16417178
	Filing Date	2019-05-20
	First Named Inventor	Larry BALDWIN
	Art Unit	2658
	Examiner Name	Eric L. Yen
	Attorney Docket Number	62KC-298931

CERTIFICATION STATEMENT

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

X 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.

X 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	/Timothy P. Cremen/	Date (YYYY-MM-DD)	2020-06-15
Name/Print	Timothy P. Cremen	Registration Number	50,855

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/ 06/17/2020

EFS Web 2.1.18

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

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 the Freedom of Information Act requires disclosure of these record s.

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.

/ERIC YEN/ 06/17/2020

EFS Web 2.1.18

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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	32	(G10L$/$).cpc. and (short-term with expir$4)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 10:53
L2	0	(G10L$/$).cpc. and (buffer$4 with expir$4 with long-term)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 10:59
L3	38	(G10L$/$).cpc. and (buffer$4 with expir$4)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:00
L5	1	"20010014857".pn. and call$4	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:04
L6	44	(G10L$/$).cpc. and (emotion$2 same (VAD "voice activity"))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:12
L7	113	(G10L$/$).cpc. and (((manner$1 style$1) near3 (speak$4 speech voice talk$4)) same (VAD "voice activity"))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:19
L8	44	(G10L$/$).cpc. and (((manner$1 style$1) near3 (speak$4 speech voice talk$4)) same (long-term))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:28
L9	1	"6081779".pn. and style$1	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:29
L10	1	"6081779".pn. and long-term	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:30
L11	185	(G10L$/$).cpc. and (conversation$1 with (predetermined adj time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 11:36
L12	1	"20030154082".pn. and frequenc$4	US-PGPUB; USPAT;	OR	OFF	2020/06/17 11:46

			USOCR; EPO; JPO			
L13	119	(G10L$/$).cpc. and (expir$4 with (predetermined adj time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:02
L14	1	"20040128514".pn. and expir$4	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:06
L15	1	"20040128514".pn. and (player adj signal$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:06
L16	1	"20040128514".pn. and (player)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:07
L17	1	"20040128514".pn. and (title adj signal$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:07
L18	1	"20040128514".pn. and (compar$4)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:07
L19	1	"20040128514".pn. and (action$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:08
L20	65	(G10L$/$).cpc. and ((((speech voice) adj segments) utterances) with (predetermined adj time))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2020/06/17 12:44

6/17/2020 12:47:38 PM
C:\Users\eyen\Documents\EAST\Workspaces\16417178F.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTORS :	Larry BALDWIN *et al.*	CONFIRMATION NO.:	8276
SERIAL NUMBER :	16/417,178	EXAMINER:	Eric L. Yen
FILING DATE :	May 20, 2019	ART UNIT:	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: July 20, 2020

Dear Sir:

In response to the Reasons for Allowance provided in the Notice of Allowance mailed April 22, 2020, and prior to payment of the Issue Fee, 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-298931**).

REMARKS

In response to the Examiner's Statement of Reasons for Allowance in the Notice of Allowability mailed on April 22, 2020, Applicant respectfully submits that the allowed claims are patentable for their respective recitations of elements as a whole, without any particular criticality or distinguishing feature being attributable to any one or more of such elements, and without any narrowing interpretation being imposed on any of such elements. 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.

Regarding the Examiner's statements on the teachings of the cited references, Applicant does not necessarily agree as to any specific position the Examiner sets forth in the Statement, and explicitly disagrees with the Examiner's positions for at least the reasons set forth in Applicant's March 18, 2020 Amendment and January 22, 2020 Interview.

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,

SHEPPARD MULLIN RICHTER & HAMPTON LLP

By /Timothy P. Cremen/
Timothy P. Cremen
Registration No.: 50,855

Customer No.
133759

2099 Pennsylvania Avenue, NW
Suite 100
Washington, D.C. 20006-6801
Telephone: (202) 747-1854

Dated: July 20, 2020

Electronic Patent Application Fee Transmittal

Application Number:	16417178
Filing Date:	20-May-2019
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Filer:	Timothy P. Cremen/Susan Trader
Attorney Docket Number:	62KC-298931

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($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1000**

Electronic Acknowledgement Receipt

EFS ID:	40044195
Application Number:	16417178
International Application Number:	
Confirmation Number:	8276
Title of Invention:	SYSTEM AND METHOD FOR A COOPERATIVE CONVERSATIONAL VOICE USER INTERFACE
First Named Inventor/Applicant Name:	Larry BALDWIN
Customer Number:	133759
Filer:	Timothy P. Cremen/Susan Trader
Filer Authorized By:	Timothy P. Cremen
Attorney Docket Number:	62KC-298931
Receipt Date:	20-JUL-2020
Filing Date:	20-MAY-2019
Time Stamp:	11:24:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1000
RAM confirmation Number	E20207JB25237688
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 1.21 (Miscellaneous fees and charges) 37 CFR 1.20 (Post Issuance fees)	

37 CFR 1.19 (Document supply fees)

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-298931_Issue_Fee.pdf	152537 7cb5d43c5128bd5aa9a8f9049b025c092b44d379	no	1
Warnings:					
Information:					
2	Miscellaneous Incoming Letter	62KC-298931_Comments_on_Statement_of_Reasons_for_Allowance.pdf	180130 d3381a858352f9cfcc4ac831a04eb569350c335f	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30464 c2f75934b61b5cabdb5bc00f5c32ebf24802260f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	363131		

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.

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 04/22/2020
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.
16/417,178	05/20/2019	Larry BALDWIN	62KC-298931	8276

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	07/22/2020

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 Sheppard Mullin Richter & Hampton LLP
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 /Timothy P. Cremen/ Date July 20, 2020

Typed or printed name Timothy P. Cremen Registration No. 50,855

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/417,178	08/25/2020	10755699	62KC-298931	8276

133759 7590 08/05/2020

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):

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

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IR103 (Rev. 10/09)

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	REQUEST ID
16/417,178	10755699	2658	120605

PAIR Correspondence Address/Fee Address Change

The following fields have been changed to Customer Number 00197 on 09/10/2020 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

Signature:	/James G. Gatto/
Name:	James G. Gatto
Registration Number:	32694