

U.S. 09/524095 03/13/00

709 218	Class	Subclass	ISSUE CLASSIFICATION

PATENT NUMBER
6742021

U.S. UTILITY Patent Application

09/524095	CONT/PRIOR D	CLASS 709	SUBCLASS	ART UNIT 2621	PATENT DATE MAY 25 2004
APPLICANTS Christine Halverson Luc Julia Dimitris Voutsas Aden Cheyer				EXAMINER	

TITLE
Navigating network-based electronic information using spoken natural language input with multimodal error feedback

APPLICANT(S):

PTO-2040
12/99

ISSUING CLASSIFICATION							
ORIGINAL				CROSS REFERENCE(S)			
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
709	218	707	5	4	102		
INTERNATIONAL CLASSIFICATION							
G06F	15/16						

Continued on Issue Slip Inside File Jacket

<input type="checkbox"/> TERMINAL DISCLAIMER	DRAWINGS Sheets Drawn: 67 Figs. Drwg.: 67 Print Fig.: 4			CLAIMS ALLOWED Total Claims: 132 Print Claim for O.G.: 1	
	<input type="checkbox"/> The term of this patent subsequent to _____ (date) has been disclaimed.			NOTICE OF ALLOWANCE MAILED 12/16/02 12/17/02	
<input type="checkbox"/> The term of this patent shall not extend beyond the expiration date of U.S. Patent No. _____			ISSUE FEE Amount Due: 640.00 Date Paid: 3-24-03		
<input type="checkbox"/> The terminal _____ months of this patent have been disclaimed.			ISSUE BATCH NUMBER 1-403		

JAMES P. TRAMMELL
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 (Legal Instruments Examiner) 1-4-03 (Date)

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FORMAL DRAWINGS

PATENT APPLICATION



09524095

jc530 U.S. PTO

09/524095



03/13/00

INITIALS

4

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(Incl. C. of M.)
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Date Mailed

Date Received
(Incl. C. of M.)
or
Date Mailed

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PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
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FEE RECORD SHEET

03/29/2000 SDAVIS 00000028 500384 09524095

01 FC:101	690.00 CH
02 FC:103	630.00 CH



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Bib Data Sheet

SERIAL NUMBER 09/524,095	FILING DATE 03/13/2000 RULE -	CLASS 709	GROUP ART UNIT 2758	ATTORNEY DOCKET NO. SRI1P037
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APPLICANTS

Christine Halverson, San Jose, CA ;
 Luc Julia, Menlo Park, CA ;
 Dimitris Voutsas, Thessaloniki, GREECE;
 Aden J. Cheyer, Palo Alto, CA ;

**** CONTINUING DATA *******

THIS APPLICATION IS A CIP OF 09/225,198 01/05/1999
 WHICH CLAIMS BENEFIT OF 60/124,718 03/17/1999
 WHICH CLAIMS BENEFIT OF 60/124,719 03/17/1999
 WHICH CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 05/12/2000

**** SMALL ENTITY ****

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	STATE OR COUNTRY CA	SHEETS DRAWING 7	TOTAL CLAIMS 55	INDEPENDENT CLAIMS 3	
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance					
Verified and Acknowledged	Examiner's Signature	Initials			

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 PO Box 52037
 Palo Alto ,CA 94303-0746

TITLE

Navigating network-based electronic information using spoken *input with multimodal error* feedback *feedback* natural language input with multimodal error

FILING FEE RECEIVED 1529	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
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CONFIRMATION NO. 6294

SERIAL NUMBER 09/524,095	FILING DATE 03/13/2000 RULE	CLASS 709	GROUP ART UNIT 2155	ATTORNEY DOCKET NO. SRI1P037
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APPLICANTS
 Christine Halverson, San Jose, CA;
 Luc Julia, Menlo Park, CA;
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 AND CLAIMS BENEFIT OF 60/124,719 03/17/1999
 AND CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED SMALL ENTITY ****
 ** 05/12/2000

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35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance					
Verified and Acknowledged	Examiner's Signature	Initials			

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TITLE
 Navigating network-based electronic information using spoken natural language input with multimodal error feedback

FILING FEE RECEIVED 2141	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
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 AND CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
 ** 05/12/2000

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY CA	SHEETS DRAWING 7	TOTAL CLAIMS 55	INDEPENDENT CLAIMS 3
Verified and Acknowledged Examiner's Signature _____ Initials _____					

ADDRESS

THOMASON, MOSER & PATTERSON, LLP
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 SHREWSBURY, NJ 07702

TITLE

Navigating network-based electronic information using spoken natural language input with multimodal error feedback

FILING FEE RECEIVED 2141	FEEs: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
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SERIAL NUMBER 09/524,095	FILING DATE 03/13/2000 RULE	CLASS 709	GROUP ART UNIT 2158	ATTORNEY DOCKET NO. SRI1P037
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APPLICANTS

Christine Halverson, San Jose, CA;
 Luc Julia, Menlo Park, CA;
 Dimitris Voutsas, Thessaloniki, GREECE;
 Adam J. Cheyer, Palo Alto, CA;

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 WHICH CLAIMS BENEFIT OF 60/124,718 03/17/1999
 AND CLAIMS BENEFIT OF 60/124,719 03/17/1999
 AND CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED SMALL ENTITY ****
 ** 05/12/2000

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY CA	SHEETS DRAWING 7	TOTAL CLAIMS 55	INDEPENDENT CLAIMS 3
35 US: 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged Examiner's Signature: <i>[Signature]</i> Initials: <i>[Initials]</i>				

ADDRESS

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TITLE

Negating network-based electronic information using spoken natural language input with multimodal error feedback

FEES RECEIVED 2141	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
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SERIAL NUMBER 09/524,095	FILING DATE 03/13/2000 RULE	CLASS 709	GROUP ART UNIT 2758	ATTORNEY DOCKET NO. SR11P037
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APPLICANTS

Christine Halverson, San Jose, CA;
 Luc Julia, Menlo Park, CA;
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 Aden J. Cheyer, Palo Alto, CA;

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 WHICH CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 05/12/2000

**** SMALL ENTITY ****

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	STATE OR COUNTRY CA	SHEETS DRAWING 7	TOTAL CLAIMS 55	INDEPENDENT CLAIMS 3
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged Examiner's Signature _____ Initials _____				

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TITLE

Navigating network-based electronic information using spoken natural language input with multimodal error feedback

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SERIAL NUMBER 09/524,095	FILING DATE 03/13/2000 RULE -	CLASS 709	GROUP ART UNIT 2758	ATTORNEY DOCKET NO. SRI1P037
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APPLICANTS

Christine Halverson, San Jose, CA ;
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 WHICH CLAIMS BENEFIT OF 60/124,720 03/17/1999

**** FOREIGN APPLICATIONS *******

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 05/12/2000

**** SMALL ENTITY ****

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY CA	SHEETS DRAWING 7	TOTAL CLAIMS 55	INDEPENDENT CLAIMS 3
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TITLE

Navigating network-based electronic information using spoken *Input with multimodal error feedback* natural language input with multimodal or feedback

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jc586 U.S. PTO



03/13/00

3-15-00

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CERTIFICATE OF EXPRESS MAILING

Attorney Docket No.: SRI1P037

This transmittal and the documents and/or fees itemized hereon and attached hereto have been deposited as "Express Mail Post Office to Addressee" in accordance with 37 CFR §1.10 with Mailing Label

First Named Inventor:

Number EL357581014US.

HALVERSON, Christine

jc530 U.S. PTO
09/524095
03/13/00

UTILITY PATENT APPLICATION TRANSMITTAL (37 CFR. § 1.53(b))
(Continuation, Divisional or Continuation-in-part application)

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

Duplicate for
fee processing

Sir: This is a request for filing a patent application under 37 CFR. § 1.53(b) in the name of inventors:
Christine Halverson

For **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK**

This application is a Continuation Divisional Continuation-in-part

of prior Application No.: **09/225,198**, from which priority under 35 U.S.C. §120 is claimed.

Application Elements:

- 33 Pages of Specification, Claims and Abstract
- 07 Sheets of Drawings
- Combined Declaration and Power of Attorney
- Newly executed (original or copy)
- Copy from a prior application (37 CFR 1.63(d) for a continuation or divisional). The entire disclosure of the prior application from which a copy of the declaration is herein supplied is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
- Deletion of inventors Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

Accompanying Application Parts:

- Assignment and Assignment Recordation Cover Sheet (recording fee of \$40.00 enclosed)
- Power of Attorney
- 37 CFR 3.73(b) Statement by Assignee
- Information Disclosure Statement with Form PTO-1449 Copies of IDS Citations

- Preliminary Amendment (New claims numbered after highest original claim in prior application.)
- Return Receipt Postcard
- Small Entity Statement(s) Statement filed in prior application. Status still proper and desired.
- Other:

Claim For Foreign Priority

- Priority of _____ Application No. _____ filed on _____ is claimed under 35 U.S.C. § 119.
- The certified copy has been filed in prior application U.S. Application No. _____
- The certified copy will follow.

Extension of Time for Prior Pending Application

- A Petition for Extension of Time is being concurrently filed in the prior pending application. A copy of the Petition for Extension of Time is attached.

Amendments

- Amend the specification by inserting before the first line the sentence: "This is a _____ application of copending prior _____ Application No. _____ filed on _____, _____ International Application _____ filed on _____ which designated the United States, the disclosure of which is incorporated herein by reference."
- Continuation Continuation-in-part Divisional
- Cancel in this application original claims _____ of the prior application before calculating the filing fee. (At least one original independent claim must be retained.)

Fee Calculation (37 CFR § 1.16)

	(Col. 1) <u>NO. FILED</u>	(Col. 2) <u>NO. EXTRA</u>	<u>SMALL ENTITY</u> <u>RATE</u> <u>FEE</u>	<u>OR</u>	<u>LARGE ENTITY</u> <u>RATE</u> <u>FEE</u>
BASIC FEE			\$345 \$345.	OR	\$690 \$
TOTAL CLAIMS	_____ -20 = _____		x09 = \$	OR	x18 = \$
INDEP CLAIMS	_____ -03 = _____		x39 = \$	OR	x78 = \$
[] Multiple Dependent Claim Presented			\$130 = \$	OR	\$260 = \$
* If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			Total \$	OR	Total \$

- Check No. _____ in the amount of \$ _____ is enclosed.
- The Commissioner is authorized to charge any fees beyond the amount enclosed which may be required, or to credit any overpayment, to Deposit Account No. 50-0384 (Order No. SRI1P037).

General Authorization for Petition for Extension of Time (37 CFR §1.136)

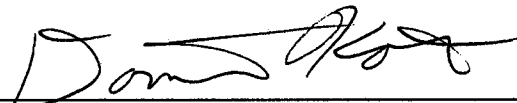
Applicants hereby make and generally authorize any Petitions for Extensions of Time as may be needed for any subsequent filings. The Commissioner is also authorized to charge any extension fees under 37 CFR §1.17 as may be needed to Deposit Account No. 50-0384 (Order No. SRI1P037).

Please send correspondence to the following address:

HICKMAN STEPHENS COLEMAN & HUGHES, LLP
P. O. Box 52037
Palo Alto, California 94303-0746
(408) 558-9950

Customer No.::

Date: March 13, 2000


Dominic M. Kotab
Registration No. 42,762

**NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK**

BACKGROUND OF THE INVENTION

5 This is a Continuation In Part of co-pending U.S. Patent Application No.
09/225,198, filed January 5, 1999, Provisional U.S. Patent Application No.
60/124,718, filed March 17, 1999, Provisional U.S. Patent Application No.
60/124,720, filed March 17, 1999, and Provisional U.S. Patent Application No.
60/124,719, filed March 17, 1999, from which applications priority is claimed and
10 these application are incorporated herein by reference.

The present invention relates generally to the navigation of electronic data by means of spoken natural language requests, and to feedback mechanisms and methods for resolving the errors and ambiguities that may be associated with such requests.

As global electronic connectivity continues to grow, and the universe of
15 electronic data potentially available to users continues to expand, there is a growing need for information navigation technology that allows relatively naïve users to navigate and access desired data by means of natural language input. In many of the most important markets -- including the home entertainment arena, as well as mobile computing -- spoken natural language input is highly desirable, if not ideal. As just
20 one example, the proliferation of high-bandwidth communications infrastructure for the home entertainment market (cable, satellite, broadband) enables delivery of movies-on-demand and other interactive multimedia content to the consumer's home television set. For users to take full advantage of this content stream ultimately requires interactive navigation of content databases in a manner that is too complex
25 for user-friendly selection by means of a traditional remote-control clicker. Allowing spoken natural language requests as the input modality for rapidly searching and accessing desired content is an important objective for a successful consumer entertainment product in a context offering a dizzying range of database content choices. As further examples, this same need to drive navigation of (and transaction
30 with) relatively complex data warehouses using spoken natural language requests applies equally to surfing the Internet/Web or other networks for general information, multimedia content, or e-commerce transactions.

In general, the existing navigational systems for browsing electronic databases and data warehouses (search engines, menus, etc.), have been designed without navigation via spoken natural language as a specific goal. So today's world is full of existing electronic data navigation systems that do not assume browsing via natural spoken commands, but rather assume text and mouse-click inputs (or in the case of TV remote controls, even less). Simply recognizing voice commands within an extremely limited vocabulary and grammar -- the spoken equivalent of button/click input (e.g., speaking "channel 5" selects TV channel 5) -- is really not sufficient by itself to satisfy the objectives described above. In order to deliver a true "win" for users, the voice-driven front-end must accept spoken natural language input in a manner that is intuitive to users. For example, the front-end should not require learning a highly specialized command language or format. More fundamentally, the front-end must allow users to speak directly in terms of what the user ultimately wants -- e.g., "I'd like to see a Western film directed by Clint Eastwood" -- as opposed to speaking in terms of arbitrary navigation structures (e.g., hierarchical layers of menus, commands, etc.) that are essentially artifacts reflecting constraints of the pre-existing text/click navigation system. At the same time, the front-end must recognize and accommodate the reality that a stream of naïve spoken natural language input will, over time, typically present a variety of errors and/or ambiguities: e.g., garbled/unrecognized words (did the user say "Eastwood" or "Easter"?) and under-constrained requests ("Show me the Clint Eastwood movie"). An approach is needed for handling and resolving such errors and ambiguities in a rapid, user-friendly, non-frustrating manner.

What is needed is a methodology and apparatus for rapidly constructing a voice-driven front-end atop an existing, non-voice data navigation system, whereby users can interact by means of intuitive natural language input not strictly conforming to the step-by-step browsing architecture of the existing navigation system, and wherein any errors or ambiguities in user input are rapidly and conveniently resolved. The solution to this need should be compatible with the constraints of a multi-user, distributed environment such as the Internet/Web or a proprietary high-bandwidth content delivery network; a solution contemplating one-at-a-time user interactions at a single location is insufficient, for example.

SUMMARY OF THE INVENTION

Sub
A2

5 The present invention addresses the above needs by providing a system, method, and article of manufacture for navigating network-based electronic data sources in response to spoken NL input requests. When a spoken natural language input request is received from a user, it is interpreted, such as by using a speech recognition engine to extract speech data from acoustic voice signals, and using a natural language parser to linguistically parse the speech data. The interpretation of the spoken natural language request can be performed on a computing device locally
10 with the user or remotely from the user. The resulting interpretation of the request is thereupon used to automatically construct an operational navigation query to retrieve the desired information from one or more electronic network data sources, which is then transmitted to a client device of the user. If the network data source is a database, the navigation query is constructed in the format of a database query
15 language.

Typically, errors or ambiguities emerge in the interpretation of the spoken NL request, such that the system cannot instantiate a complete, valid navigational template. This is to be expected occasionally, and one preferred aspect of the invention is the ability to handle such errors and ambiguities in relatively graceful and user-friendly manner. Instead of simply rejecting such input and defaulting to
20 traditional input modes or simply asking the user to try again, a preferred embodiment of the present invention seeks to converge rapidly toward instantiation of a valid navigational template by soliciting additional clarification from the user as necessary, either before or after a navigation of the data source, via multimodal input, i.e., by
25 means of menu selection or other input modalities including and in addition to spoken natural language. This clarifying, multi-modal dialogue takes advantage of whatever partial navigational information has been gleaned from the initial interpretation of the user's spoken NL request. This clarification process continues until the system converges toward an adequately instantiated navigational template, which is in turn
30 used to navigate the network-based data and retrieve the user's desired information. The retrieved information is transmitted across the network and presented to the user on a suitable client display device.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention, together with further advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings in which:

5 Figure 1a illustrates a system providing a spoken natural language interface for network-based information navigation, in accordance with an embodiment of the present invention with server-side processing of requests;

10 Figure 1b illustrates another system providing a spoken natural language interface for network-based information navigation, in accordance with an embodiment of the present invention with client-side processing of requests;

 Figure 2 illustrates a system providing a spoken natural language interface for network-based information navigation, in accordance with an embodiment of the present invention for a mobile computing scenario;

15 Figure 3 illustrates the functional logic components of a request processing module in accordance with an embodiment of the present invention;

 Figure 4 illustrates a process utilizing spoken natural language for navigating an electronic database in accordance with one embodiment of the present invention;

 Figure 5 illustrates a process for constructing a navigational query for accessing an online data source via an interactive, scripted (e.g., CGI) form; and

20 Figure 6 illustrates an embodiment of the present invention utilizing a community of distributed, collaborating electronic agents.

DETAILED DESCRIPTION OF THE INVENTION

1. System Architecture

a. Server-End Processing of Spoken Input

Figure 1a is an illustration of a data navigation system driven by spoken natural language input, in accordance with one embodiment of the present invention. As shown, a user's voice input data is captured by a voice input device 102, such as a microphone. Preferably voice input device 102 includes a button or the like that can be pressed or held-down to activate a listening mode, so that the system need not continually pay attention to, or be confused by, irrelevant background noise. In one preferred embodiment well-suited for the home entertainment setting, voice input device 102 is a portable remote control device with an integrated microphone, and the voice data is transmitted from device 102 preferably via infrared (or other wireless) link to communications box 104 (e.g., a set-top box or a similar communications device that is capable of retransmitting the raw voice data and/or processing the voice data) local to the user's environment and coupled to communications network 106. The voice data is then transmitted across network 106 to a remote server or servers 108. The voice data may preferably be transmitted in compressed digitized form, or alternatively --particularly where bandwidth constraints are significant-- in analog format (e.g., via frequency modulated transmission), in the latter case being digitized upon arrival at remote server 108.

At remote server 108, the voice data is processed by request processing logic 300 in order to understand the user's request and construct an appropriate query or request for navigation of remote data source 110, in accordance with the interpretation process exemplified in Figure 4 and Figure 5 and discussed in greater detail below. For purposes of executing this process, request processing logic 300 comprises functional modules including speech recognition engine 310, natural language (NL) parser 320, query construction logic 330, and query refinement logic 340, as shown in Figure 3. Data source 110 may comprise database(s), Internet/web site(s), or other electronic information repositories, and preferably resides on a central server or servers -- which may or may not be the same as server 108, depending on the storage

and bandwidth needs of the application and the resources available to the practitioner. Data source 110 may include multimedia content, such as movies or other digital video and audio content, other various forms of entertainment data, or other electronic information. The contents of data source 110 are navigated -- i.e., the contents are
5 accessed and searched, for retrieval of the particular information desired by the user -- using the processes of Figures 4 and 5 as described in greater detail below.

Once the desired information has been retrieved from data source 110, it is electronically transmitted via network 106 to the user for viewing on client display device 112. In a preferred embodiment well-suited for the home entertainment setting,
10 display device 112 is a television monitor or similar audiovisual entertainment device, typically in stationary position for comfortable viewing by users. In addition, in such preferred embodiment, display device 112 is coupled to or integrated with a communications box (which is preferably the same as communications box 104, but may also be a separate unit) for receiving and decoding/formatting the desired
15 electronic information that is received across communications network 106.

Network 106 is a two-way electronic communications network and may be embodied in electronic communication infrastructure including coaxial (cable television) lines, DSL, fiber-optic cable, traditional copper wire (twisted pair), or any other type of hardwired connection. Network 106 may also include a wireless
20 connection such as a satellite-based connection, cellular connection, or other type of wireless connection. Network 106 may be part of the Internet and may support TCP/IP communications, or may be embodied in a proprietary network, or in any other electronic communications network infrastructure, whether packet-switched or connection-oriented. A design consideration is that network 106 preferably provide
25 suitable bandwidth depending upon the nature of the content anticipated for the desired application.

b. Client-End Processing of Spoken Input

Figure 1b is an illustration of a data navigation system driven by spoken natural language input, in accordance with a second embodiment of the present
30 invention. Again, a user's voice input data is captured by a voice input device 102, such as a microphone. In the embodiment shown in Figure 1b, the voice data is

transmitted from device 202 to requests processing logic 300, hosted on a local speech processor, for processing and interpretation. In the preferred embodiment illustrated in Figure 1b, the local speech processor is conveniently integrated as part of communications box 104, although implementation in a physically separate (but communicatively coupled) unit is also possible as will be readily apparent to those of skill in the art. The voice data is processed by the components of request processing logic 300 in order to understand the user's request and construct an appropriate query or request for navigation of remote data source 110, in accordance with the interpretation process exemplified in Figures 4 and 5 as discussed in greater detail below.

The resulting navigational query is then transmitted electronically across network 106 to data source 110, which preferably resides on a central server or servers 108. As in Figure 1a, data source 110 may comprise database(s), Internet/web site(s), or other electronic information repositories, and preferably may include multimedia content, such as movies or other digital video and audio content, other various forms of entertainment data, or other electronic information. The contents of data source 110 are then navigated -- i.e., the contents are accessed and searched, for retrieval of the particular information desired by the user -- preferably using the process of Figures 4 and 5 as described in greater detail below. Once the desired information has been retrieved from data source 110, it is electronically transmitted via network 106 to the user for viewing on client display device 112.

In one embodiment in accordance with Figure 1b and well-suited for the home entertainment setting, voice input device 102 is a portable remote control device with an integrated microphone, and the voice data is transmitted from device 102 preferably via infrared (or other wireless) link to the local speech processor. The local speech processor is coupled to communications network 106, and also preferably to client display device 112 (especially for purposes of query refinement transmissions, as discussed below in connection with Figure 4, step 412), and preferably may be integrated within or coupled to communications box 104. In addition, especially for purposes of a home entertainment application, display device 112 is preferably a television monitor or similar audiovisual entertainment device, typically in stationary position for comfortable viewing by users. In addition, in such

preferred embodiment, display device 112 is coupled to a communications box (which is preferably the same as communications box 104, but may also be a physically separate unit) for receiving and decoding/formatting the desired electronic information that is received across communications network 106.

5 Design considerations favoring server-side processing and interpretation of spoken input requests, as exemplified in Figure 1a, include minimizing the need to distribute costly computational hardware and software to all client users in order to perform speech and language processing. Design considerations favoring client-side processing, as exemplified in Figure 1b, include minimizing the quantity of data sent
10 upstream across the network from each client, as the speech recognition is performed before transmission across the network and only the query data and/or request needs to be sent, thus reducing the upstream bandwidth requirements.

c. Mobile Client Embodiment

15 A mobile computing embodiment of the present invention may be implemented by practitioners as a variation on the embodiments of either Figure 1a or Figure 1b. For example, as depicted in Figure 2, a mobile variation in accordance with the server-side processing architecture illustrated in Figure 1a may be implemented by replacing voice input device 102, communications box 104, and client display device 112, with an integrated, mobile, information appliance 202 such
20 as a cellular telephone or wireless personal digital assistant (wireless PDA). Mobile information appliance 202 essentially performs the functions of the replaced components. Thus, mobile information appliance 202 receives spoken natural language input requests from the user in the form of voice data, and transmits that data (preferably via wireless data receiving station 204) across communications
25 network 206 for server-side interpretation of the request, in similar fashion as described above in connection with Figure 1. Navigation of data source 210 and retrieval of desired information likewise proceeds in an analogous manner as described above. Display information transmitted electronically back to the user across network 206 is displayed for the user on the display of information appliance
30 202, and audio information is output through the appliance's speakers.

Practitioners will further appreciate, in light of the above teachings, that if mobile information appliance 202 is equipped with sufficient computational processing power, then a mobile variation of the client-side architecture exemplified in Figure 2 may similarly be implemented. In that case, the modules corresponding to request processing logic 300 would be embodied locally in the computational resources of mobile information appliance 202, and the logical flow of data would otherwise follow in a manner analogous to that previously described in connection with Figure 1b.

As illustrated in Figure 2, multiple users, each having their own client input device, may issue requests, simultaneously or otherwise, for navigation of data source 210. This is equally true (though not explicitly drawn) for the embodiments depicted in Figures 1a and 1b. Data source 210 (or 100), being a network accessible information resource, has typically already been constructed to support access requests from simultaneous multiple network users, as known by practitioners of ordinary skill in the art. In the case of server-side speech processing, as exemplified in Figures 1a and 2, the interpretation logic and error correction logic modules are also preferably designed and implemented to support queuing and multi-tasking of requests from multiple simultaneous network users, as will be appreciated by those of skill in the art.

It will be apparent to those skilled in the art that additional implementations, permutations and combinations of the embodiments set forth in Figures 1a, 1b, and 2 may be created without straying from the scope and spirit of the present invention. For example, practitioners will understand, in light of the above teachings and design considerations, that it is possible to divide and allocate the functional components of request processing logic 300 between client and server. For example, speech recognition -- in entirety, or perhaps just early stages such as feature extraction -- might be performed locally on the client end, perhaps to reduce bandwidth requirements, while natural language parsing and other necessary processing might be performed upstream on the server end, so that more extensive computational power need not be distributed locally to each client. In that case, corresponding portions of request processing logic 300, such as speech recognition engine 310 or portions

thereof, would reside locally at the client as in Figure 1b, while other component modules would be hosted at the server end as in Figures 1a and 2.

Further, practitioners may choose to implement the each of the various embodiments described above on any number of different hardware and software computing platforms and environments and various combinations thereof, including, by way of just a few examples: a general-purpose hardware microprocessor such as the Intel Pentium series; operating system software such as Microsoft Windows/CE, Palm OS, or Apple Mac OS (particularly for client devices and client-side processing), or Unix, Linux, or Windows/NT (the latter three particularly for network data servers and server-side processing), and/or proprietary information access platforms such as Microsoft's WebTV or the Diva Systems video-on-demand system.

2. Processing Methodology

The present invention provides a spoken natural language interface for interrogation of remote electronic databases and retrieval of desired information. A preferred embodiment of the present invention utilizes the basic methodology outlined in the flow diagram of Figure 4 in order to provide this interface. This methodology will now be discussed.

a. Interpreting Spoken Natural Language Requests

At step 402, the user's spoken request for information is initially received in the form of raw (acoustic) voice data by a suitable input device, as previously discussed in connection with Figures 1-2. At step 404 the voice data received from the user is interpreted in order to understand the user's request for information. Preferably this step includes performing speech recognition in order to extract words from the voice data, and further includes natural language parsing of those words in order to generate a structured linguistic representation of the user's request.

Speech recognition in step 404 is performed using speech recognition engine 310. A variety of commercial quality, speech recognition engines are readily available on the market, as practitioners will know. For example, Nuance Communications offers a suite of speech recognition engines, including Nuance 6, its current flagship product, and Nuance Express, a lower cost package for entry-level

applications. As one other example, IBM offers the ViaVoice speech recognition engine, including a low-cost shrink-wrapped version available through popular consumer distribution channels. Basically, a speech recognition engine processes acoustic voice data and attempts to generate a text stream of recognized words.

5 Typically, the speech recognition engine is provided with a vocabulary lexicon of likely words or phrases that the recognition engine can match against its analysis of acoustical signals, for purposes of a given application. Preferably, the lexicon is dynamically adjusted to reflect the current user context, as established by the preceding user inputs. For example, if a user is engaged in a dialogue with the system
10 about movie selection, the recognition engine's vocabulary may preferably be adjusted to favor relevant words and phrases, such as a stored list of proper names for popular movie actors and directors, etc. Whereas if the current dialogue involves selection and viewing of a sports event, the engine's vocabulary might preferably be adjusted to favor a stored list of proper names for professional sports teams, etc. In addition, a
15 speech recognition engine is provided with language models that help the engine predict the most likely interpretation of a given segment of acoustical voice data, in the current context of phonemes or words in which the segment appears. In addition, speech recognition engines often echo to the user, in more or less real-time, a transcription of the engine's best guess at what the user has said, giving the user an
20 opportunity to confirm or reject.

In a further aspect of step 404, natural language interpreter (or parser) 320 linguistically parses and interprets the textual output of the speech recognition engine. In a preferred embodiment of the present invention, the natural-language interpreter attempts to determine both the meaning of spoken words (semantic processing) as
25 well as the grammar of the statement (syntactic processing), such as the Gemini Natural Language Understanding System developed by SRI International. The Gemini system is described in detail in publications entitled "Gemini: A Natural Language System for Spoken-Language Understanding" and "Interleaving Syntax and Semantics in an Efficient Bottom-Up Parser," both of which are currently available
30 online at <http://www.ai.sri.com/natural-language/projects/arpa-sls/nat-lang.html>. (Copies of those publications are also included in an information disclosure statement submitted herewith, and are incorporated herein by this reference). Briefly, Gemini

applies a set of syntactic and semantic grammar rules to a word string using a bottom-up parser to generate a logical form, which is a structured representation of the context-independent meaning of the string. Gemini can be used with a variety of grammars, including general English grammar as well as application-specific grammars. The Gemini parser is based on "unification grammar," meaning that grammatical categories incorporate features that can be assigned values; so that when grammatical category expressions are matched in the course of parsing or semantic interpretation, the information contained in the features is combined, and if the feature values are incompatible the match fails.

It is possible for some applications to achieve a significant reduction in speech recognition error by using the natural-language processing system to re-score recognition hypotheses. For example, the grammars defined for a language parser like Gemini may be compiled into context-free grammar that, in turn, can be used directly as language models for speech recognition engines like the Nuance recognizer. Further details on this methodology are provided in the publication "Combining Linguistic and Statistical Knowledge Sources in Natural-Language Processing for ATIS" which is currently available online through <http://www.ai.sri.com/natural-language/projects/arpa-sls/spnl-int.html>. A copy of this publication is included in an information disclosure submitted herewith, and is incorporated herein by this reference.

In an embodiment of the present invention that may be preferable for some applications, the natural language interpreter "learns" from the past usage patterns of a particular user or of groups of users. In such an embodiment, the successfully interpreted requests of users are stored, and can then be used to enhance accuracy by comparing a current request to the stored requests, thereby allowing selection of a most probable result.

b. Constructing Navigation Queries

In step 405 request processing logic 300 identifies and selects an appropriate online data source where the desired information (in this case, current weather reports for a given city) can be found. Such selection may involve look-up in a locally stored table, or possibly dynamic searching through an online search engine, or other online

search techniques. For some applications, an embodiment of the present invention may be implemented in which only access to a particular data source (such as a particular vendor's proprietary content database) is supported; in that case, step 405 may be trivial or may be eliminated entirely.

5 Step 406 attempts to construct a navigation query, reflecting the interpretation of step 404. This operation is preferably performed by query construction logic 330.

A "navigation query" means an electronic query, form, series of menu selections, or the like; being structured appropriately so as to navigate a particular data source of interest in search of desired information. In other words, a navigation
10 query is constructed such that it includes whatever content and structure is required in order to access desired information electronically from a particular database or data source of interest.

For example, for many existing electronic databases, a navigation query can be embodied using a formal database query language such as Standard Query
15 Language (SQL). For many databases, a navigation query can be constructed through a more user-friendly interactive front-end, such as a series of menus and/or interactive forms to be selected or filled in. SQL is a standard interactive and programming language for getting information from and updating a database. SQL is both an ANSI and an ISO standard. As is well known to practitioners, a Relational Database
20 Management System (RDBMS), such as Microsoft's Access, Oracle's Oracle7, and Computer Associates' CA-OpenIngres, allow programmers to create, update, and administer a relational database. Practitioners of ordinary skill in the art will be thoroughly familiar with the notion of database navigation through structured query, and will be readily able to appreciate and utilize the existing data structures and
25 navigational mechanisms for a given database, or to create such structures and mechanisms where desired.

In accordance with the present invention, the query constructed in step 406 must reflect the user's request as interpreted by the speech recognition engine and the NL parser in step 404. In embodiments of the present invention wherein data source
30 110 (or 210 in the corresponding embodiment of Figure 2) is a structured relational database or the like, step 406 of the present invention may entail constructing an

appropriate Structured Query Language (SQL) query or the like, or automatically filling out a front-end query form, series of menus or the like, as described above.

In many existing Internet (and Intranet) applications, an online electronic data source is accessible to users only through the medium of interaction with a so-called
5 Common Gateway Interface (CGI) script. Typically the user who visits a web site of this nature must fill in the fields of an online interactive form. The online form is in turn linked to a CGI script, which transparently handles actual navigation of the associated data source and produces output for viewing by the user's web browser. In other words, direct user access to the data source is not supported, only mediated
10 access through the form and CGI script is offered.

For applications of this nature, an advantageous embodiment of the present invention "scrapes" the scripted online site where information desired by a user may be found in order to facilitate construction of an effective navigation query. For example, suppose that a user's spoken natural language request is: "What's the weather
15 in Miami?" After this request is received at step 402 and interpreted at step 404, assume that step 405 determines that the desired weather information is available online through the medium of a CGI-scripted interactive form. Step 406 is then preferably carried out using the expanded process diagrammed in Figure 5. In particular, at sub-step 520, query construction logic 330 electronically "scrapes" the
20 online interactive form, meaning that query construction logic 330 automatically extracts the format and structure of input fields accepted by the online form. At sub-step 522, a navigation query is then constructed by instantiating (filling in) the extracted input format -- essentially an electronic template -- in a manner reflecting the user's request for information as interpreted in step 404. The flow of control then
25 returns to step 407 of Figure 4. Ultimately, when the query thus constructed by scraping is used to navigate the online data source in step 408, the query effectively initiates the same scripted response as if a human user had visited the online site and had typed appropriate entries into the input fields of the online form.

In the embodiment just described, scraping step 520 is preferably carried out
30 with the assistance of an online extraction utility such as WebL. WebL is a scripting language for automating tasks on the World Wide Web. It is an imperative,

interpreted language that has built-in support for common web protocols like HTTP and FTP, and popular data types like HTML and XML. WebL's implementation language is Java, and the complete source code is available from Compaq. In addition, step 520 is preferably performed dynamically when necessary -- in other words, on-the-fly in response to a particular user query -- but in some applications it may be possible to scrape relatively stable (unchanging) web sites of likely interest in advance and to cache the resulting template information.

It will be apparent, in light of the above teachings, that preferred embodiments of the present invention can provide a spoken natural language interface atop an existing, non-voice data navigation system, whereby users can interact by means of intuitive natural language input not strictly conforming to the linear browsing architecture or other artifacts of an existing menu/text/click navigation system. For example, users of an appropriate embodiment of the present invention for a video-on-demand application can directly speak the natural request: "Show me the movie 'Unforgiven'" -- instead of walking step-by-step through a typically linear sequence of genre/title/actor/director menus, scrolling and selecting from potentially long lists on each menu, or instead of being forced to use an alphanumeric keyboard that cannot be as comfortable to hold or use as a lightweight remote control. Similarly, users of an appropriate embodiment of the present invention for a web-surfing application in accordance with the process shown in Figure 5 can directly speak the natural request: "Show me a one-month price chart for Microsoft stock" -- instead of potentially having to navigate to an appropriate web site, search for the right ticker symbol, enter/select the symbol, and specify display of the desired one-month price chart, each of those steps potentially involving manual navigation and data entry to one or more different interaction screens. (Note that these examples are offered to illustrate some of the potential benefits offered by appropriate embodiments of the present invention, and not to limit the scope of the invention in any respect.)

c. Error Correction

Several problems can arise when attempting to perform searches based on spoken natural language input. As indicated at decision step 407 in the process of Figure 4, certain deficiencies may be identified during the process of query

construction, before search of the data source is even attempted. For example, the user's request may fail to specify enough information in order to construct a navigation query that is specific enough to obtain a satisfactory search result. For example, a user might orally request "what's the weather?" whereas the national
5 online data source identified in step 405 and scraped in step 520 might require specifying a particular city.

Additionally, certain deficiencies and problems may arise following the navigational search of the data source at step 408, as indicated at decision step 409 in Figure 4. For example, with reference to a video-on-demand application, a user may
10 wish to see the movie "Unforgiven", but perhaps the user can't recall name of the film, but knows it was directed by and starred actor Clint Eastwood. A typical video-on-demand database might indeed be expected to allow queries specifying the name of a leading actor and/or director, but in the case of this query -- as in many cases -- that will not be enough to narrow the search to a single film, and additional user input in
15 some form is required.

In the event that one or more deficiencies in the user's spoken request, as processed, result in the problems described, either at step 407 or 409, some form of error handling is in order. A straightforward, crude technique might be for the system to respond simply "*input not understood / insufficient; please try again.*" However,
20 that approach will likely result in frustrated users, and is not optimal or even acceptable for most applications. Instead, a preferred technique in accordance with the present invention handles such errors and deficiencies in user input at step 412, whether detected at step 407 or step 409, by soliciting additional input from the user in a manner taking advantage of the partial construction already performed and via
25 user interface modalities in addition to spoken natural language ("multi-modality"). This supplemental interaction is preferably conducted through client display device 112 (202, in the embodiment of Figure 2), and may include textual, graphical, audio and/or video media. Further details and examples are provided below. Query refinement logic 340 preferably carries out step 412. The additional input received
30 from the user is fed into and augments interpreting step 404, and query construction step 406 is likewise repeated with the benefit of the augmented interpretation. These operations, and subsequent navigation step 408, are preferably repeated until no

remaining problems or deficiencies are identified at decision points 407 or 409. Further details and examples for this query refinement process are provided immediately below.

5 Consider again the example in which the user of a video-on-demand application wishes to see "Unforgiven" but can only recall that it was directed by and starred Clint Eastwood. First, it bears noting that using a prior art navigational interface, such as a conventional menu interface, will likely be relatively tedious in this case. The user can proceed through a sequence of menus, such as Genre (select "western"), Title (skip), Actor ("Clint Eastwood"), and Director ("Clint Eastwood").
10 In each case --especially for the last two items -- the user would typically scroll and select from fairly long lists in order to enter his or her desired name, or perhaps use a relatively couch-unfriendly keypad to manually type the actor's name twice.

Using a preferred embodiment of the present invention, the user instead speaks aloud, holding remote control microphone 102, "I want to see that movie starring and
15 directed by Clint Eastwood. Can't remember the title." At step 402 the voice data is received. At step 404 the voice data is interpreted. At step 405 an appropriate online data source is selected (or perhaps the system is directly connected to a proprietary video-on-demand provider). At step 406 a query is automatically constructed by the query construction logic 330 specifying "Clint Eastwood" in both the actor and
20 director fields. Step 407 detects no obvious problems, and so the query is electronically submitted and the data source is navigated at step 408, yielding a list of several records satisfying the query (e.g., "Unforgiven", "True Crime", "Absolute Power", etc.). Step 409 detects that additional user input is needed to further refine the query in order to select a particular film for viewing.

25 At that point, in step 412 query refinement logic 340 might preferably generate a display for client display device 112 showing the (relatively short) list of film titles that satisfy the user's stated constraints. The user can then preferably use a relatively convenient input modality, such as buttons on the remote control, to select the desired title from the menu. In a further preferred embodiment, the first title on
30 the list is highlighted by default, so that the user can simply press an "OK" button to choose that selection. In a further preferred feature, the user can mix input modalities

by speaking a response like "I want number one on the list." Alternatively, the user can preferably say, "Let's see Unforgiven," having now been reminded of the title by the menu display.

Utilizing the user's supplemental input, request processing logic 300 iterates
5 again through steps 404 and 406, this time constructing a fully-specified query that specifically requests the Eastwood film "Unforgiven." Step 408 navigates the data source using that query and retrieves the desired film, which is then electronically transmitted in step 410 from network server 108 to client display device 112 via communications network 106.

10 Now consider again the example in which the user of a web surfing application wants to know his or her local weather, and simply asks, "what's the weather?" At step 402 the voice data is received. At step 404 the voice data is interpreted. At step 405 an online web site providing current weather information for major cities around the world is selected. At step 406 and sub-step 520, the online
15 site is scraped using a WebL-style tool to extract an input template for interacting with the site. At sub-step 522, query construction logic 330 attempts to construct a navigation query by instantiating the input template, but determines (quite rightly) that a required field -- name of city -- cannot be determined from the user's spoken request as interpreted in step 404. Step 407 detects this deficiency, and in step 412
20 query refinement logic 340 preferably generates output for client display device 112 soliciting the necessary supplemental input. In a preferred embodiment, the output might display the name of the city where the user is located highlighted by default. The user can then simply press an "OK" button -- or perhaps mix modalities by saying "yes, exactly" -- to choose that selection. A preferred embodiment would further
25 display an alphabetical scrollable menu listing other major cities, and/or invite the user to speak or select the name of the desired city.

Here again, utilizing the user's supplemental input, request processing logic 300 iterates through steps 404 and 406. This time, in performing sub-step 520, a cached version of the input template already scraped in the previous iteration might
30 preferably be retrieved. In sub-step 522, query construction logic 330 succeeds this time in instantiating the input template and constructing an effective query, since the

desired city has now been clarified. Step 408 navigates the data source using that query and retrieves the desired weather information, which is then electronically transmitted in step 410 from network server 108 to client display device 112 via communications network 106.

5 It is worth noting that in some instances, there may be details that are not explicitly provided by the user, but that query construction logic 330 or query refinement logic 340 may preferably deduce on their own through reasonable assumptions, rather than requiring the use to provide explicit clarification. For example, in the example previously described regarding a request for a weather
10 report, in some applications it might be preferable for the system to simply assume that the user means a weather report for his or her home area and to retrieve that information, if the cost of doing so is not significantly greater than the cost of asking the user to clarify the query. Making such an assumption might be even more strongly justified in a preferred embodiment, as described earlier, where user histories
15 are tracked, and where such history indicates that a particular user or group of users typically expect local information when asking for a weather forecast. At any rate, in the event such an assumption is made, if the user actually intended to request the weather for a different city, the user would then need to ask his or her question again. It will be apparent to practitioners, in light of the above teachings, that the choice of
20 whether to program query construction logic 330 and query refinement logic 340 to make make particular assumptions will typically involve trade-offs involving user convenience that can be assessed in the context of specific applications.

SECRET - SECURITY

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3. Open Agent Architecture (OAA®)

Open Agent Architecture™ (OAA®) is a software platform, developed by the assignee of the present invention, that enables effective, dynamic collaboration among communities of distributed electronic agents. OAA is described in greater detail in co-pending U.S. Patent Application No. 09/225,198, which has been incorporated herein by reference. Very briefly, the functionality of each client agent is made available to the agent community through registration of the client agent's capabilities with a facilitator. A software "wrapper" essentially surrounds the underlying application program performing the services offered by each client. The common infrastructure for constructing agents is preferably supplied by an *agent library*. The agent library is preferably accessible in the runtime environment of several different programming languages. The agent library preferably minimizes the effort required to construct a new system and maximizes the ease with which legacy systems can be "wrapped" and made compatible with the agent-based architecture of the present invention. When invoked, a client agent makes a connection to a facilitator, which is known as its *parent facilitator*. Upon connection, an agent registers with its parent facilitator a specification of the capabilities and services it can provide, using a high-level, declarative Interagent Communication Language ("*ICL*") to express those capabilities. Tasks are presented to the facilitator in the form of ICL goal expressions. When a facilitator determines that the registered capabilities of one of its client agents will help satisfy a current goal or sub-goal thereof, the facilitator delegates that sub-goal to the client agent in the form of an ICL request. The client agent processes the request and returns answers or information to the facilitator. In processing a request, the client agent can use *ICL* to request services of other agents, or utilize other infrastructure services for collaborative work. The facilitator coordinates and integrates the results received from different client agents on various sub-goals, in order to satisfy the overall goal.

OAA provides a useful software platform for building systems that integrate spoken natural language as well as other user input modalities. For example, see the above-referenced co-pending patent application, especially Figure 13 and the corresponding discussion of a "multi-modal maps" application, and Figure 12 and the

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corresponding discussion of a "unified messaging" application. Another example is the InfoWiz interactive information kiosk developed by the assignee and described in the document entitled "InfoWiz: An Animated Voice Interactive Information System" available online at <http://www.ai.sri.com/~oaa/applications.html>. A copy of the
5 InfoWhiz document is provided in an Information Disclosure Statement submitted herewith and incorporated herein by this reference. A further example is the "CommandTalk" application developed by the assignee for the U.S. military, as described online at <http://www.ai.sri.com/~lesaf/commandtalk.html> and in the following publications, copies of which are provided in an Information Disclosure
10 Statement submitted herewith and incorporated herein by this reference:

- 15 • "CommandTalk: A Spoken-Language Interface for Battlefield Simulations", 1997, by Robert Moore, John Dowding, Harry Bratt, J. Mark Gawron, Yonael Gorfu and Adam Cheyer, in "Proceedings of the Fifth Conference on Applied Natural Language Processing", Washington, DC, pp. 1-7, Association for Computational Linguistics
- 20 • "The CommandTalk Spoken Dialogue System", 1999, by Amanda Stent, John Dowding, Jean Mark Gawron, Elizabeth Owen Bratt and Robert Moore, in "Proceedings of the Thirty-Seventh Annual Meeting of the ACL", pp. 183-190, University of Maryland, College Park, MD, Association for Computational Linguistics
- 25 • "Interpreting Language in Context in CommandTalk", 1999, by John Dowding and Elizabeth Owen Bratt and Sharon Goldwater, in "Communicative Agents: The Use of Natural Language in Embodied Systems", pp. 63-67, Association for Computing Machinery (ACM) Special Interest Group on Artificial Intelligence (SIGART), Seattle, WA

For some applications and systems, OAA can provide an advantageous platform for constructing embodiments of the present invention. For example, a
30 representative application is now briefly presented, with reference to Figure 6. If the statement "show me movies starring John Wayne" is spoken into the voice input device, the voice data for this request will be sent by UI agent 650 to facilitator 600, which in turn will ask natural language (NL) agent 620 and speech recognition agent 610 to interpret the query and return the interpretation in *ICL* format. The resulting
35 *ICL* goal expression is then routed by the facilitator to appropriate agents -- in this case, video-on-demand database agent 640 -- to execute the request. Video database agent 640 preferably includes or is coupled to an appropriate embodiment of query construction logic 330 and query refinement logic 340, and may also issue *ICL*

requests to facilitator 600 for additional assistance -- e.g., display of menus and capture of additional user input in the event that query refinement is needed -- and facilitator 600 will delegate such requests to appropriate client agents in the community. When the desired video content is ultimately retrieved by video database agent 640, UI agent 650 is invoked by facilitator 600 to display the movie.

Other spoken user requests, such as a request for the current weather in New York City or for a stock quote, would eventually lead facilitator to invoke web database agent 630 to access the desired information from an appropriate Internet site. Here again, web database agent 630 preferably includes or is coupled to an appropriate embodiment of query construction logic 330 and query refinement logic 340, including a scraping utility such as WebL. Other spoken requests, such as a request to view recent emails or access voice mail, would lead the facilitator to invoke the appropriate email agent 660 and/or telephone agent 680. A request to record a televised program of interest might lead facilitator 600 to invoke web database agent 630 to return televised program schedule information, and then invoke VCR controller agent 680 to program the associated VCR unit to record the desired television program at the scheduled time.

Control and connectivity embracing additional electronic home appliances (e.g., microwave oven, home surveillance system, etc.) can be integrated in comparable fashion. Indeed, an advantage of OAA-based embodiments of the present invention, that will be apparent to practitioners in light of the above teachings and in light of the teachings disclosed in the cited co-pending patent applications, is the relative ease and flexibility with which additional service agents can be plugged into the existing platform, immediately enabling the facilitator to respond dynamically to spoken natural language requests for the corresponding services.

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CLAIMS

What is claimed is:

- 1 1. A method for utilizing spoken natural language for navigating an
2 electronic data source, the electronic data source being located at one or more network
3 servers located remotely from a user, comprising the steps of:
- 4 (a) receiving a spoken natural language ("NL") request for desired
5 information from the user;
- 6 (b) rendering an interpretation of the spoken natural language request;
- 7 (c) constructing at least part of a navigation query based upon the
8 interpretation;
- 9 (d) soliciting additional input from the user, including user interaction in a
10 modality different than the original request;
- 11 (e) refining the navigation query, based upon the additional input;
- 12 (f) using the refined navigation query to select a portion of the electronic
13 data source; and
- 14 (g) transmitting the selected portion of the electronic data source from the
15 network server to a client device of the user.

1 2. The method of claim 1, wherein the step of rendering an interpretation
2 further includes deriving linguistic information by using a speech recognition engine
3 and an NL parser.

1 3. The method of claim 1, wherein the step of constructing a navigation
2 query further includes the steps of extracting an input template for an online scripted
3 interface to the data source, and using the input template to construct the navigation
4 query.

1 4. The method of claim 3, wherein the step of extracting an input
2 template includes dynamically scraping the online scripted interface.

1 5. The method of claim 1, wherein the navigation query is constructed in
2 the format of a database query language.

1 6. The method of claim 1, wherein the step of rendering an interpretation
2 and the step of constructing a navigation query are performed, at least in part, on a
3 computing device located locally with the user.

1 7. The method of claim 1, wherein the step of rendering an interpretation
2 and the step of constructing a navigation query are performed, at least in part, on a
3 network computing device located remotely from the user.

1 8. The method of claim 1, wherein the step of soliciting additional input
2 is performed in response to one or more deficiencies encountered during the step of
3 constructing a navigation query.

1 9. The method of claim 8, wherein the deficiencies include unresolved
2 words of the spoken NL request.

1 10. The method of claim 8, wherein the deficiencies include one or more
2 required elements of the navigational query not determinable from the interpretation
3 of the spoken NL request.

1 11. The method of claim 1, wherein the step of soliciting additional input
2 is performed in response to one or more deficiencies encountered after a first
3 navigation of the data source using the navigation query constructed in step (c).

1 12. The method of claim 11, wherein the deficiencies include existence of
2 more than one data record within the data source responsive to the navigation query.

1 13. The method of claim 11, wherein the deficiencies include failure to
2 identify a single data record within the data source responsive to the navigation query.

1 14. The method of claim 1, wherein the input modality of step (d) includes
2 selecting from a displayed option menu.

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1 15. The method of claim 14, wherein the act of selecting from the
2 displayed option menu is performed by speaking.

1 16. The method of claim 1, wherein the method is performed with respect
2 to a plurality of simultaneous users and corresponding client devices.

1 17. The method of claim 1, further including the step of selecting the data
2 source from among a plurality of candidate electronic data sources, in response to the
3 interpretation of the spoken NL request.

1 18. The method of claim 1, wherein the electronic data source stores
2 multimedia content including at least one of video content and audio content.

1 19. A system for utilizing spoken natural language to navigate an
2 electronic data source, the electronic data source being located at one or more network
3 servers located remotely from a user, the system comprising:

- 4 (a) a portable microphone operable to receive a spoken natural language
5 (“NL”) request for desired information from the user;
- 6 (b) spoken language processing logic, operable to render an interpretation
7 of the spoken natural language request;
- 8 (c) query construction logic, operable to construct a navigation query in
9 response to the interpretation of the spoken natural language request;
- 10 (d) user interaction logic, operable to solicit additional input from the user,
11 including user interaction in a modality different than the original
12 request;
- 13 (e) query refining logic, operable to refine the navigation query, based
14 upon the additional input;
- 15 (f) navigation logic, operable to select a portion of the electronic data
16 source using the navigation query; and

17 (g) electronic communications infrastructure for transmitting the selected
18 portion of the electronic data source from the network server to a
19 primarily stationary, display device located locally with the user.

1 20. The system of claim 19, wherein the spoken language processing logic
2 includes speech recognition logic and an NL parsing logic for deriving linguistic
3 information.

1 21. The system of claim 19, wherein the spoken language processing logic
2 extracts an input template for an online scripted interface to the data source, and uses
3 the input template to construct the navigation query.

1 22. The system of claim 21, wherein the spoken language processing logic
2 dynamically scrapes the online scripted interface.

1 23. The system of claim 19, wherein the query construction logic
2 constructs the query in the format of a database query language.

1 24. The system of claim 19, wherein at least a portion of the spoken
2 language processing logic is hosted on a computing device located locally with the
3 user, and wherein the portable microphone is electronically coupled to the local
4 computing device.

1 25. The system of claim 19, wherein at least a portion of the spoken
2 language processing logic is hosted on a network computing device located remotely
3 from the user, and wherein the portable microphone sends data to the remote network
4 computing device via the communications infrastructure.

1 26. The system of claim 19, wherein the user interaction logic solicits
2 additional input in response to one or more deficiencies encountered during
3 construction of the navigation query.

1 27. The system of claim 26, wherein the deficiencies include unresolved
2 words of the spoken NL request.

1 28. The system of claim 26, wherein the deficiencies include one or more
2 required elements of the navigational query not determinable from the interpretation
3 of the spoken NL request.

1 29. The system of claim 19, wherein the user interaction logic solicits
2 additional input in response to one or more deficiencies encountered after a first
3 navigation of the data source performed by the navigation logic.

1 30. The system of claim 29, wherein the deficiencies include existence of
2 more than one data record within the data source responsive to the navigation query.

1 31. The system of claim 29, wherein the deficiencies include failure to
2 identify a single data record within the data source responsive to the navigation query.

1 32. The system of claim 19, wherein the user interaction logic displays an
2 option menu.

1 33. The system of claim 32, wherein the act of selecting from the
2 displayed option menu is performed by speaking.

1 34. The system of claim 19, wherein the navigation logic selects the data
2 source from among a plurality of candidate electronic data sources, in response to the
3 interpretation of the spoken NL request.

1 35. The system of claim 19, wherein the electronic data source stores
2 multimedia content including at least one of video content and audio content.

1 36. The system of claim 19, wherein the display device receives data from
2 the electronic data source on the network servers via a communications box.

1 37. The system of claim 19, wherein the electronic communication
2 infrastructure is a two-way infrastructure and is selected from among one or more of
3 the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

1 38. An computer program embodied on a computer readable medium for
2 utilizing spoken natural language for navigating an electronic data source, the

3 electronic data source being located at one or more network servers located remotely
4 from a user, comprising:

- 5 (a) a code segment that receives a spoken natural language ("NL") request
6 for desired information from the user;
- 7 (b) a code segment that renders an interpretation of the spoken natural
8 language request;
- 9 (c) a code segment that constructs at least part of a navigation query based
10 upon the interpretation;
- 11 (d) a code segment that solicits additional input from the user, including
12 user interaction in a modality different than the original request;
- 13 (e) a code segment that refines the navigation query, based upon the
14 additional input;
- 15 (f) a code segment that uses the refined navigation query to select a
16 portion of the electronic data source; and
- 17 (g) a code segment that transmits the selected portion of the electronic data
18 source from the network server to a primarily stationary, display
19 device located locally with the user.

1 39. The computer program of claim 38, further comprising a code segment
2 that derives linguistic information by using a speech recognition engine and an NL
3 parser.

1 40. The computer program of claim 38, further comprising a code segment
2 that extract an input template for an online scripted interface to the data source, and a
3 code segment that uses the input template to construct the navigation query.

1 41. The computer program of claim 40, further comprising a code segment
2 that dynamically scrapes the online scripted interface.

1 42. The computer program of claim 38, wherein the navigation query is
2 constructed in the format of a database query language.

1 53. The computer program of claim 38, wherein the code segments of the
2 computer program operate with respect to a plurality of simultaneous users and
3 corresponding client devices.

1 54. The computer program of claim 38, further comprising a code segment
2 that selects the data source from among a plurality of candidate electronic data
3 sources, in response to the interpretation of the spoken NL request.

1 55. The computer program of claim 38, wherein the electronic data source
2 stores multimedia content including at least one of video content and audio content.

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NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK

ABSTRACT OF THE INVENTION

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Sub a1 →
A system, method, and article of manufacture are provided for navigating an electronic data source by means of spoken natural language. When a spoken natural language input request is received from a user, it is interpreted. Additional input is solicited from the user in a modality different than the original request and used to refine the navigation query. The resulting interpretation of the request is thereupon used to automatically construct an operational navigation query to retrieve the desired information from one or more electronic network data sources.

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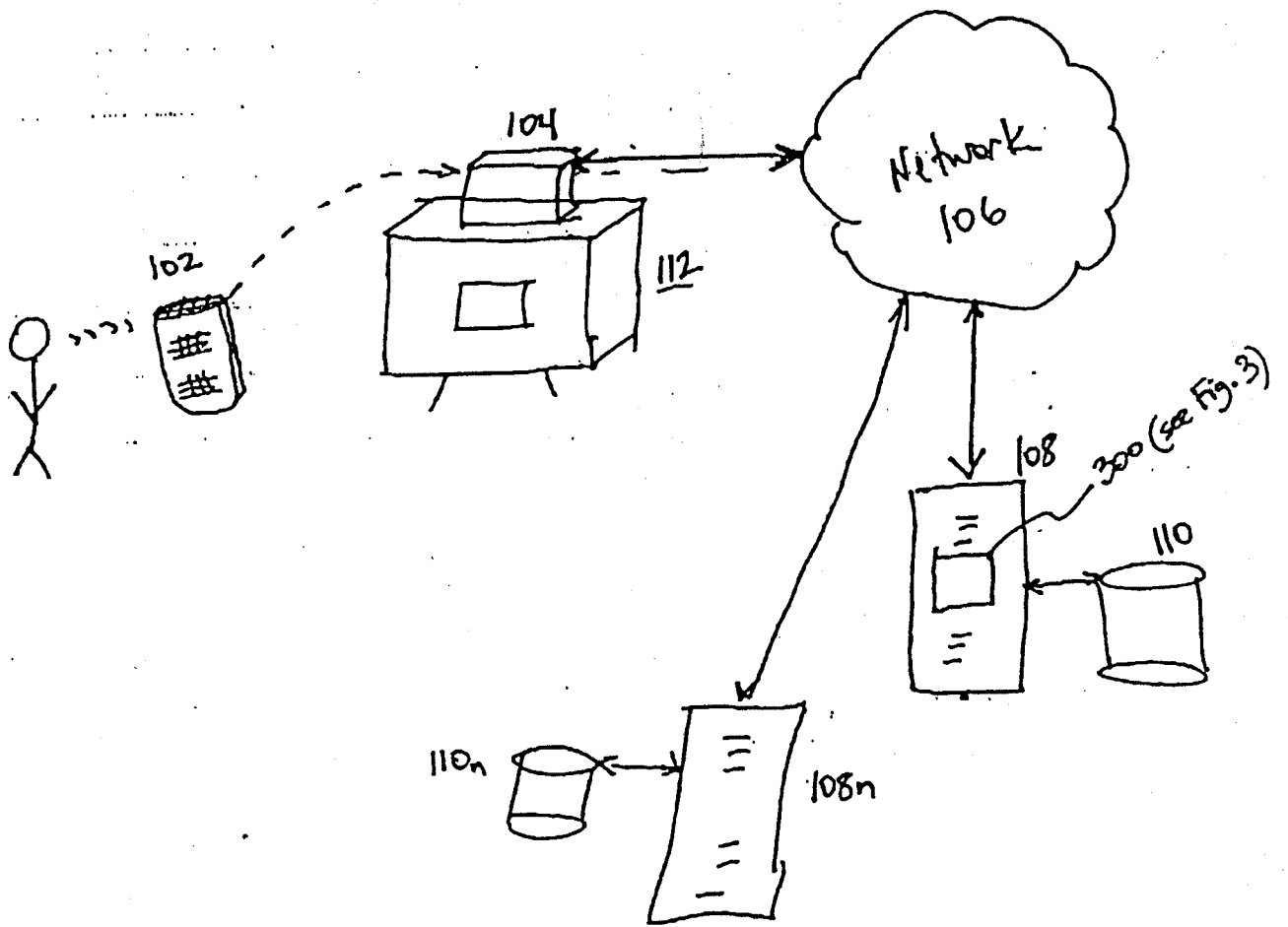


Fig. 1a

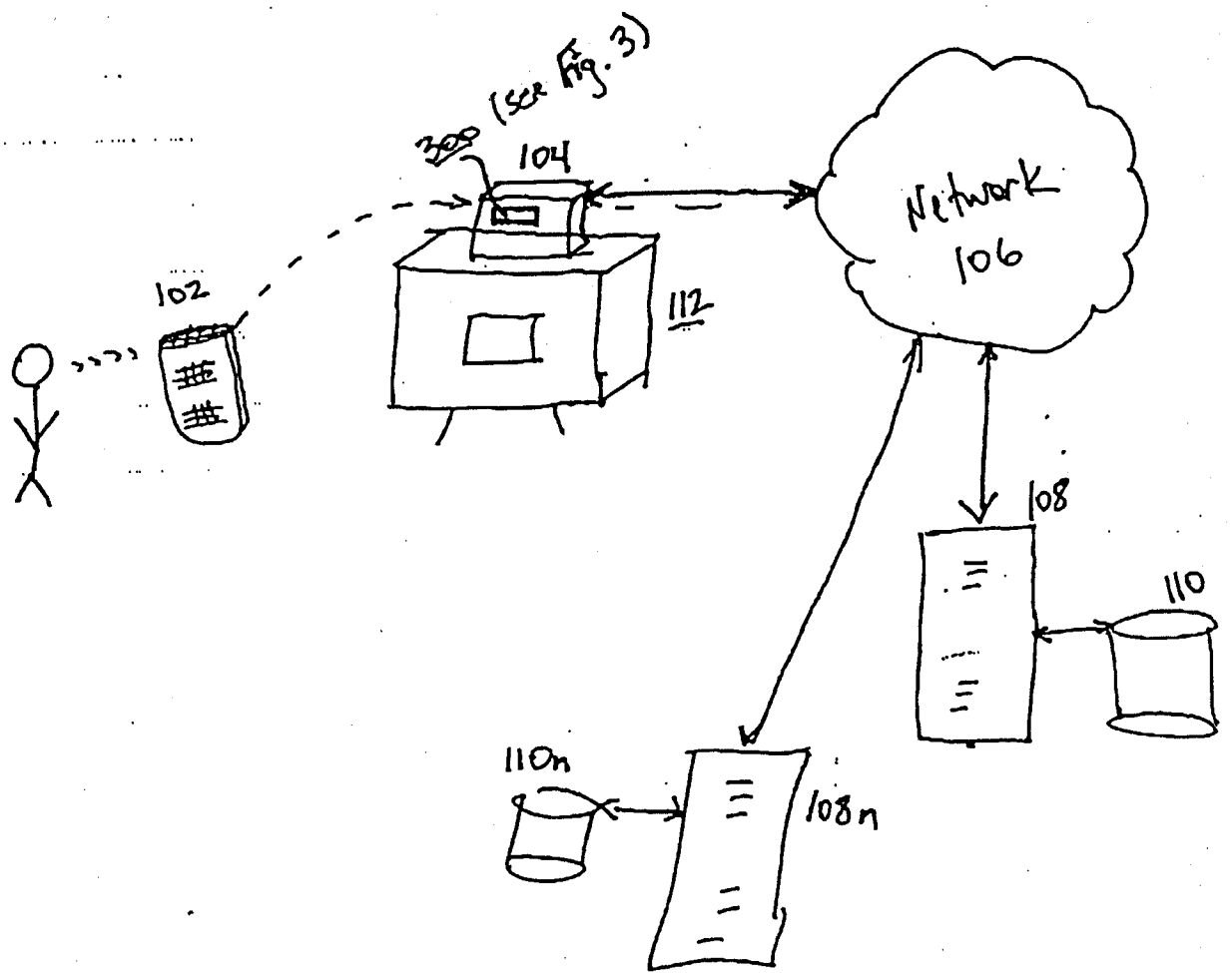


Fig. 1b

SECRET

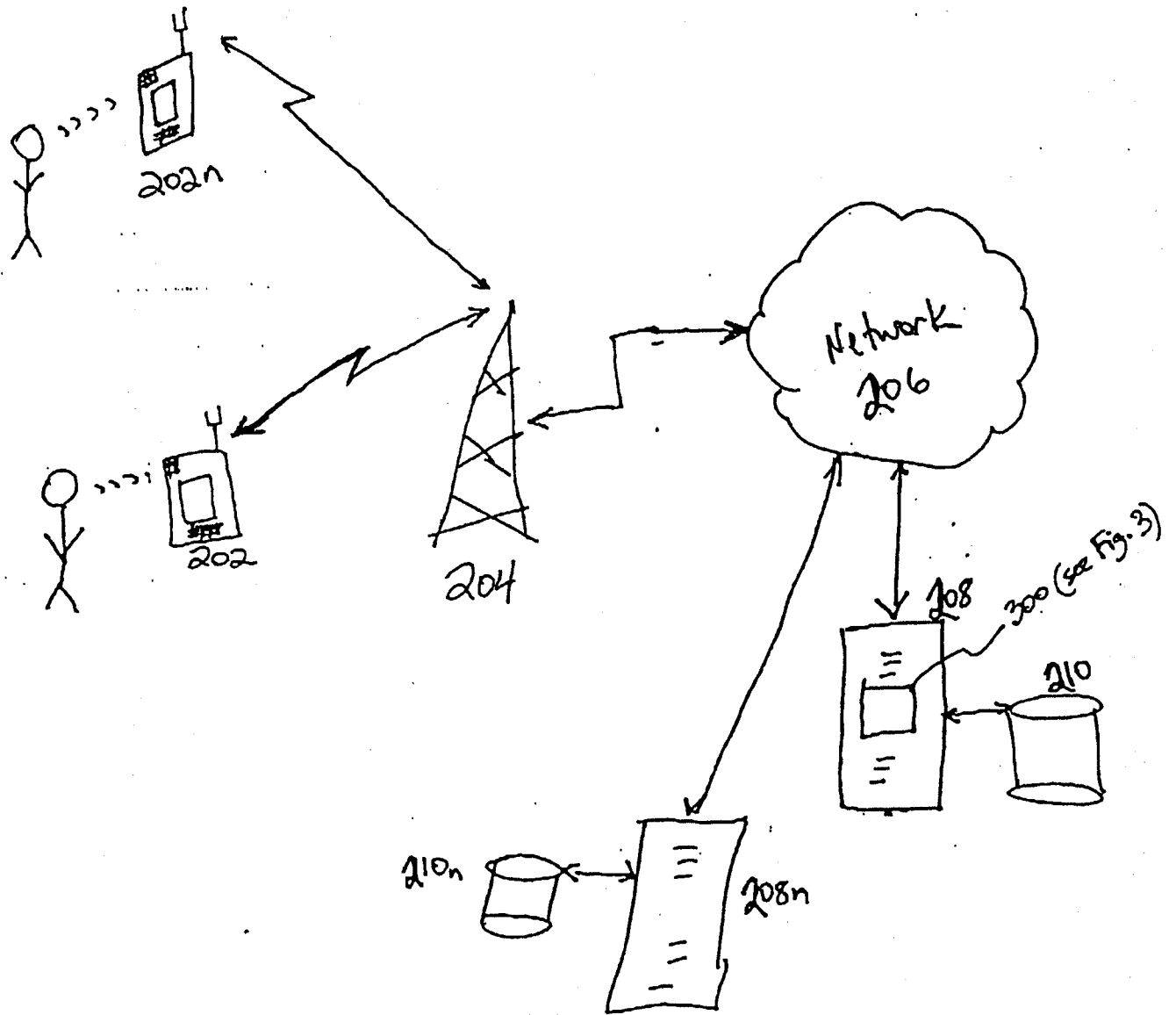


Fig. 2

Request processing logic 300

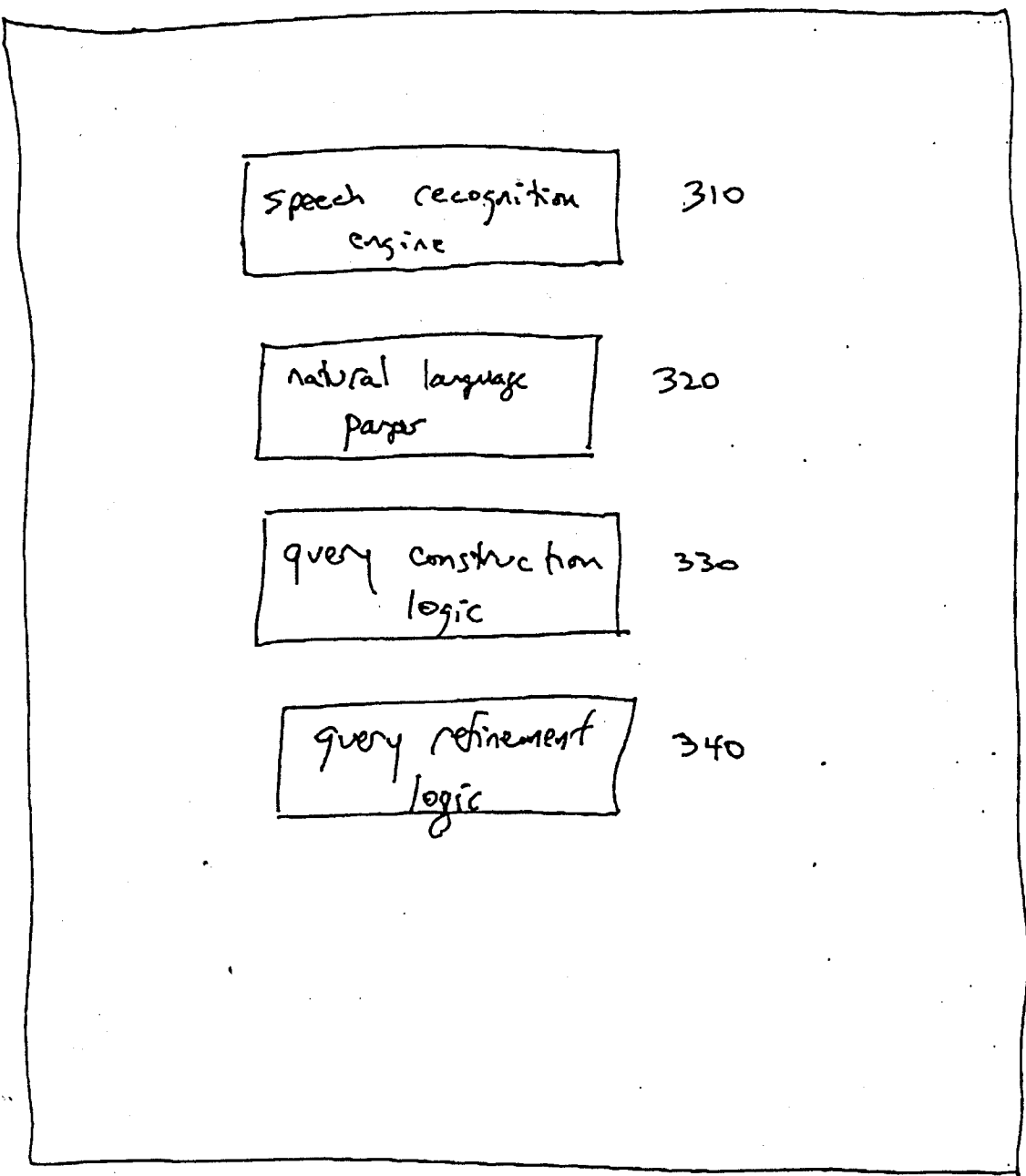


Fig. 3

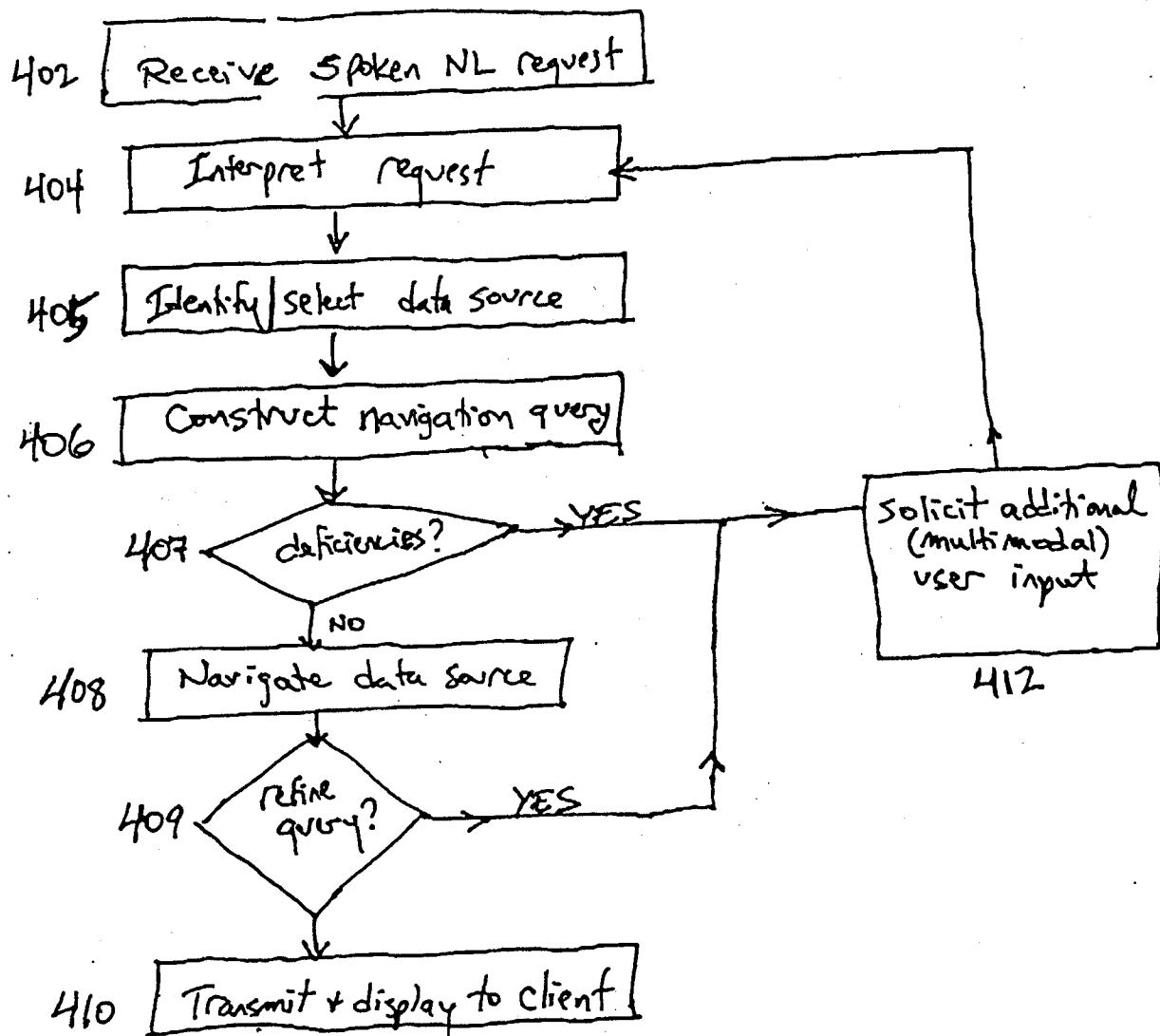


Fig. 4

(from step 406, fig. 4)



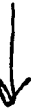
scrape the online scripted form,
to extract an input template

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instantiate the input template,
using interpretation of step 404

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(to step 407, fig. 4)

Fig. 5

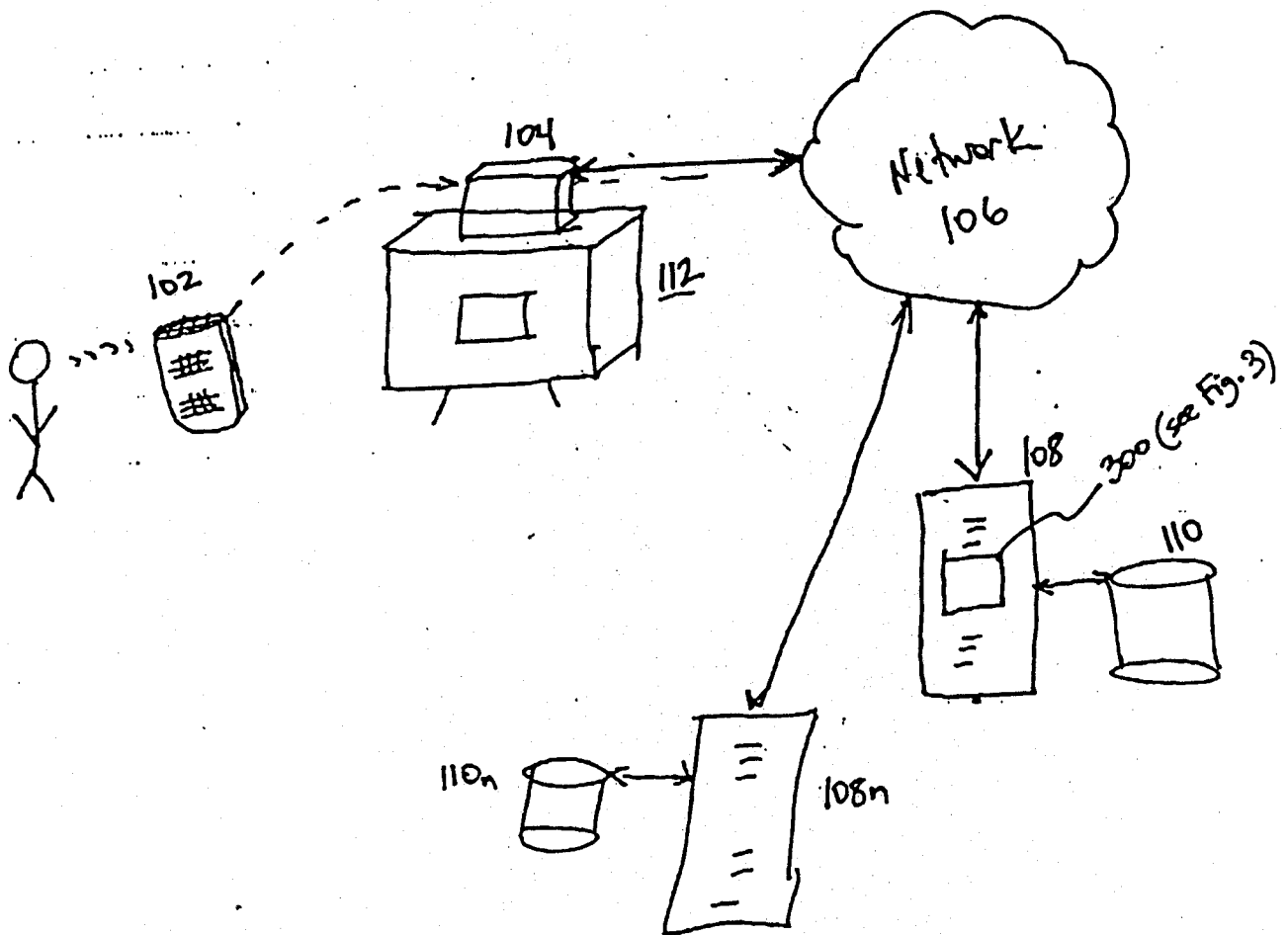


Fig. 1a

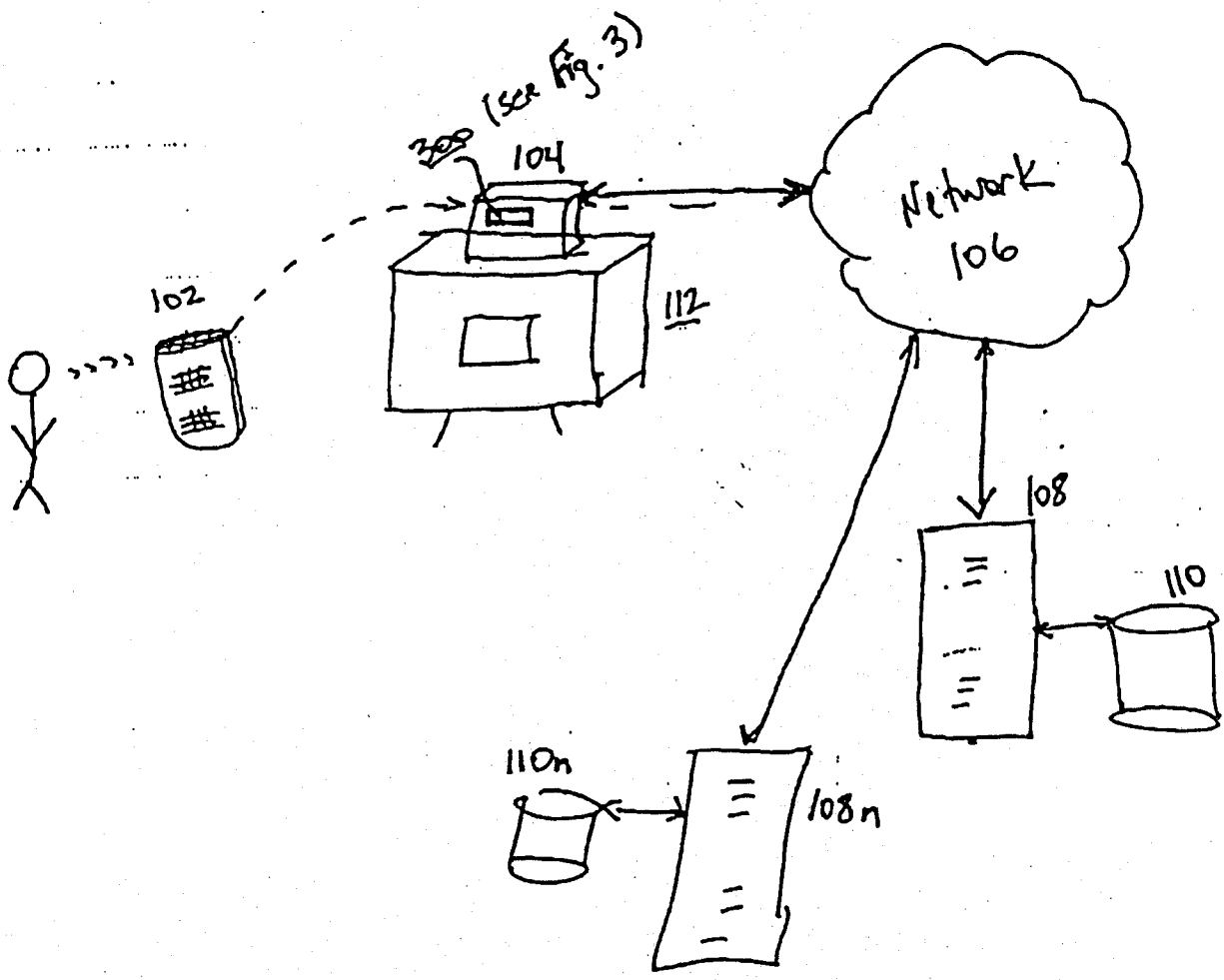


Fig. 1b

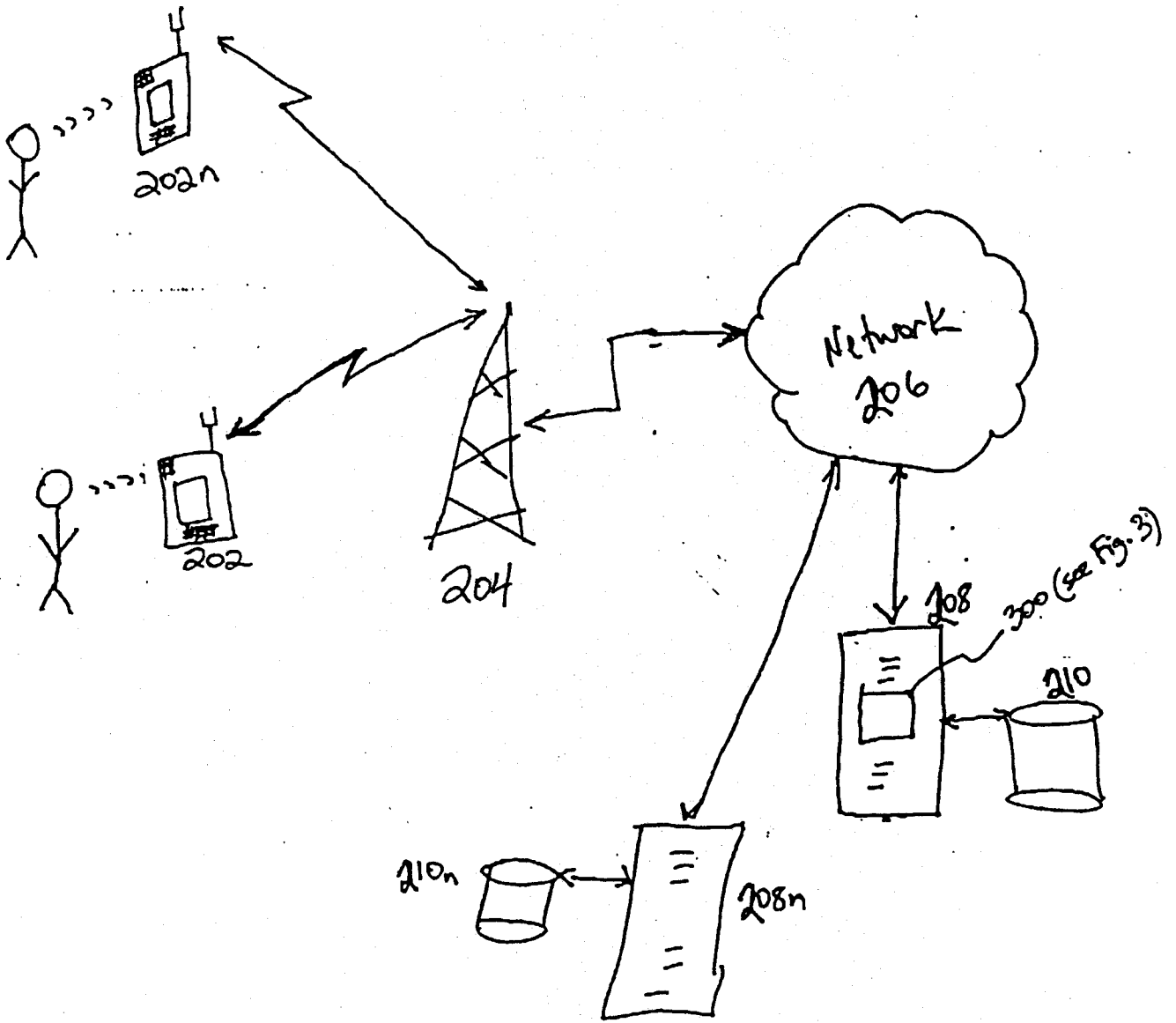


Fig. 2

Request processing logic 300

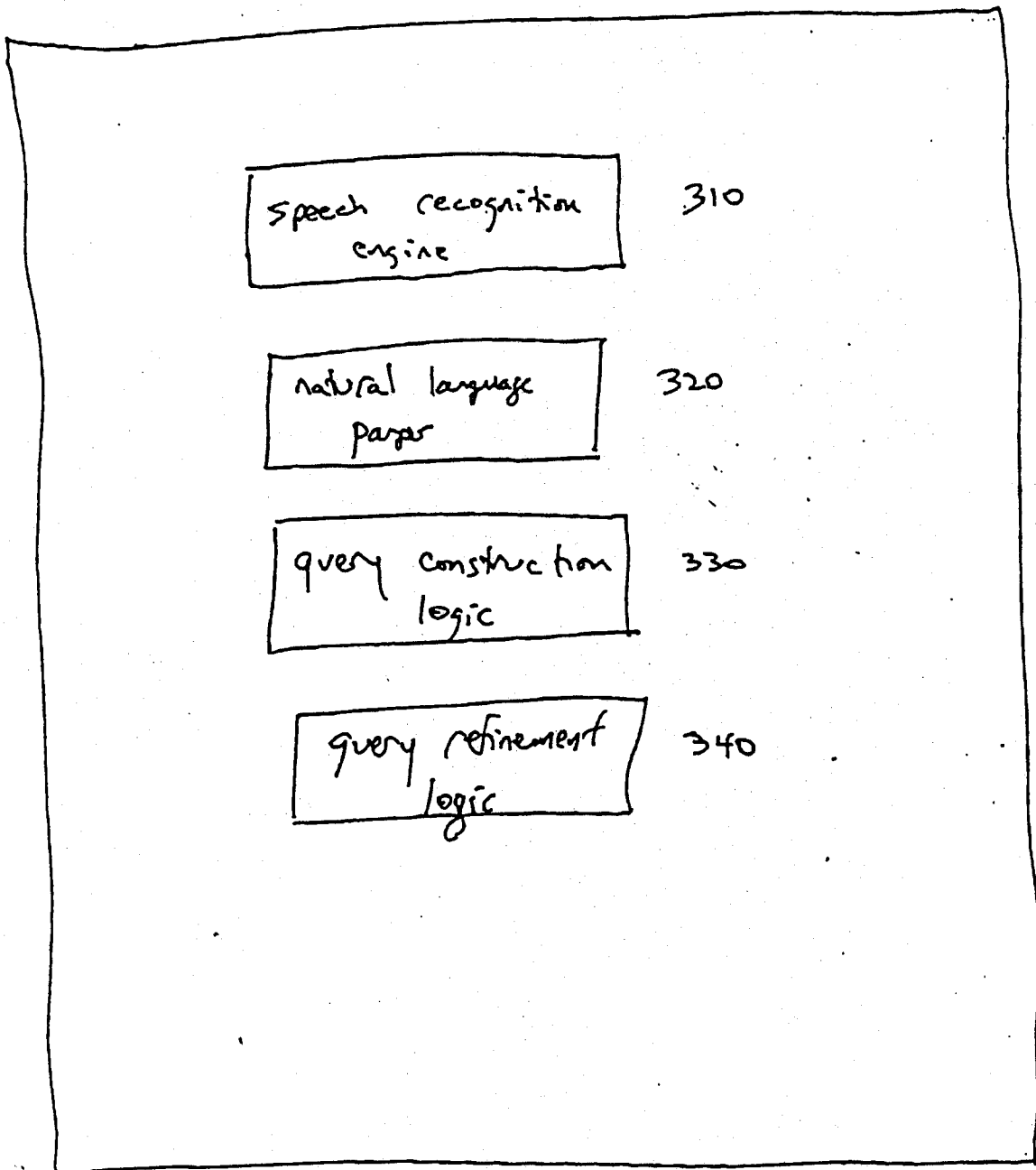


Fig. 3

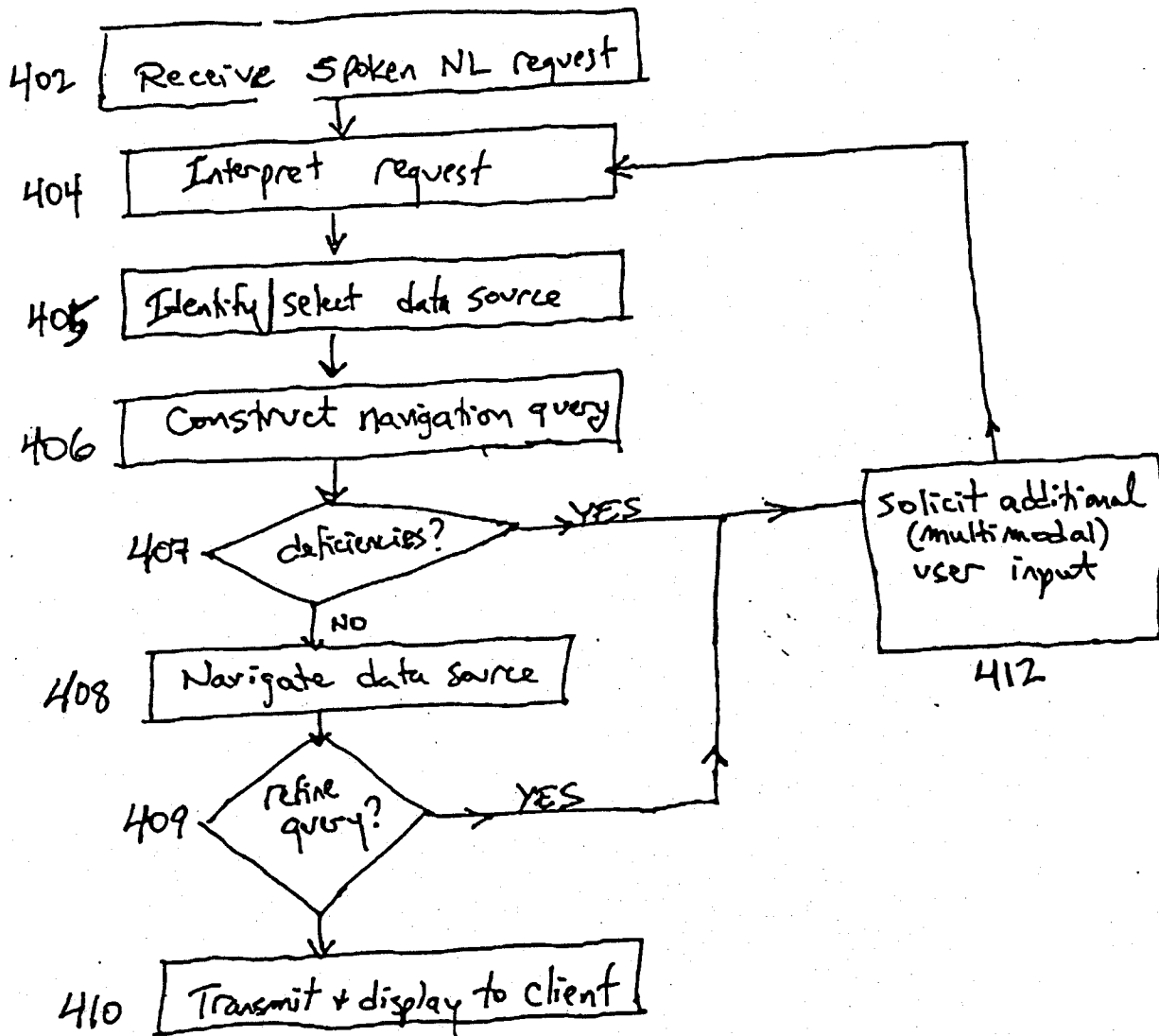


Fig. 4

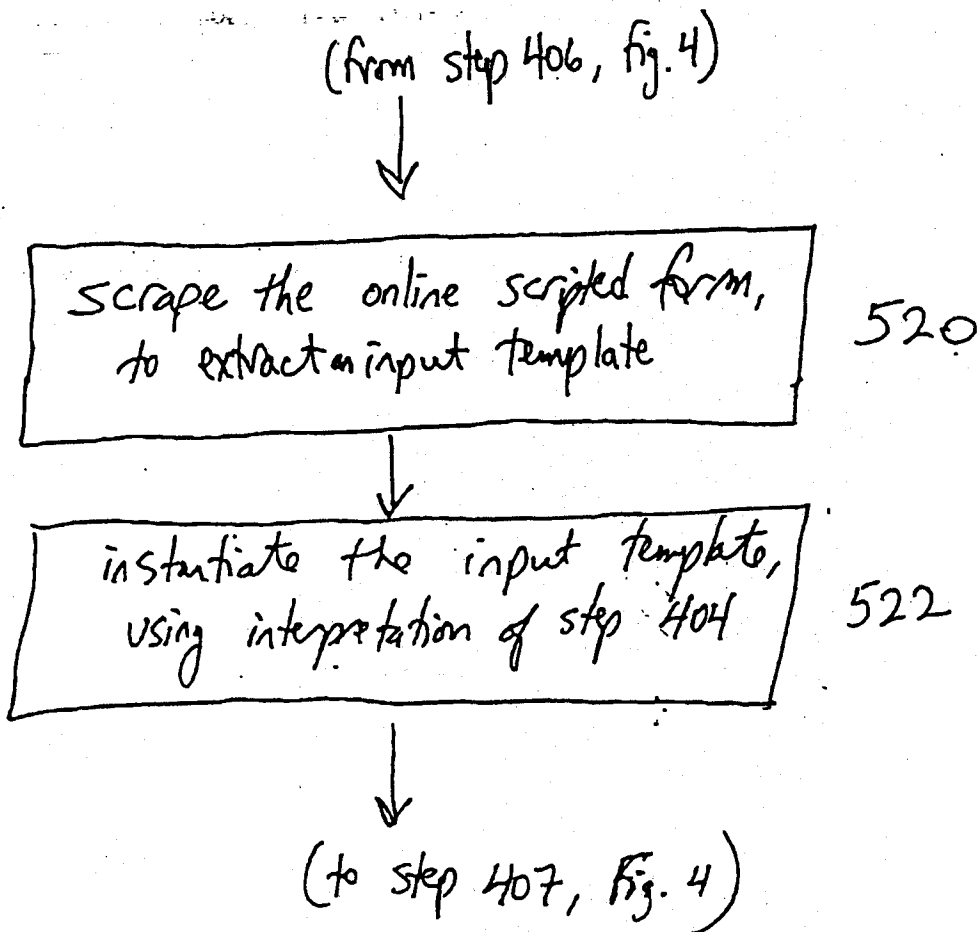


Fig. 5

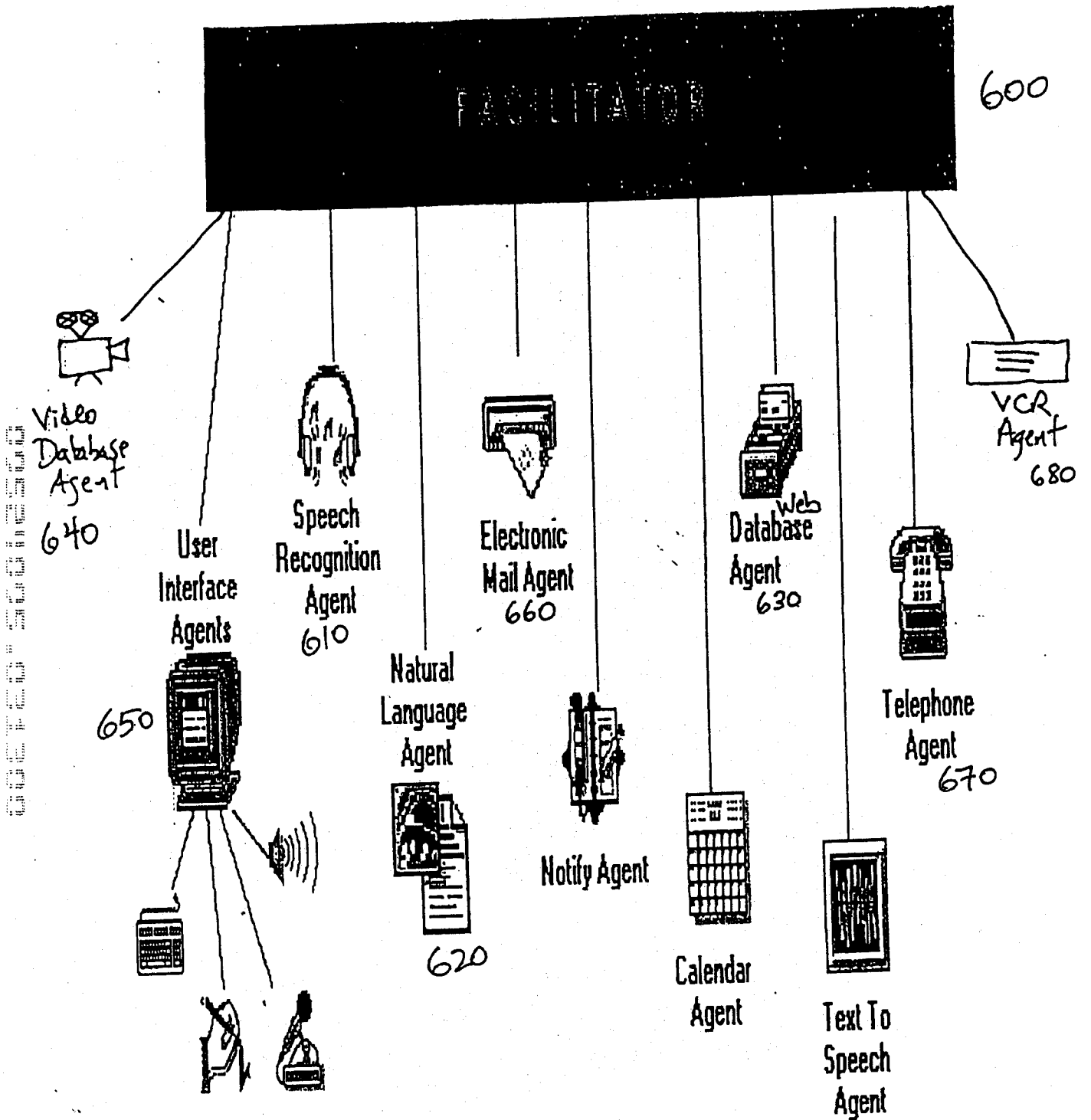


Fig. 6

FORMALITIES LETTER



OC00000005113304



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENT AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/524,095	03/13/2000	Christine Halverson	SRI1P037

Hickman Stephens Coleman & Hughes LLP
PO Box 52037
Palo Alto, CA 94303-0746

Date Mailed: 05/12/2000

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

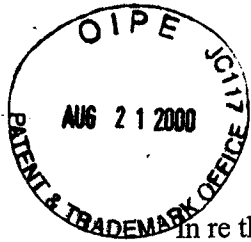
An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 130.**

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY



0405 SE TOR PATENT #3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

Luc Julia et al.

Application No. 09/524,095

Filed: 3/13/2000

For:

Navigating Network-Based Electronic Information Using Spoken Natural Language Input With Multimodal Error Feedback

)
) Examiner: Not Assigned
)
) Art Unit: Not Assigned
)
) Atty. Docket No. AND1P037
)
) Date: 8/17/00

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on August 17, 2000.

Signed: Kimberly Main
Kimberly Main

RESPONSE TO NOTICE TO FILE MISSING PARTS

Assistant Commissioner for Patents
Box: Missing Parts
Washington, D.C. 20231

Sir:

In response to the Notice to File Missing Parts of Application--Filing Date Granted dated May 12, 2000, Applicants hereby attach an original executed Declaration and Power of Attorney, an Assignment document, an Assignment Recordation Cover Sheet, and the copy of the Notice to be returned with this response. Applicants are also enclosing a copy of the previously filed Small Entity Statement, filed on the parent case of this application, serial number 09/225,198, which accounts for the fees being paid as a small entity on this case. We are also enclosing check number 6331, in the amount of \$105.00, for the missing fees, and the assignment recordation. We are also request a two-month extension of time in which to responds to this matter, check number 6812, in the amount of \$190.00 is also enclosed.

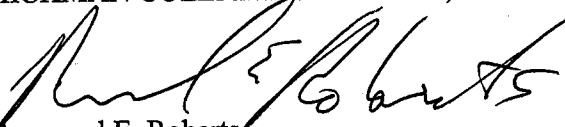
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The Commissioner is authorized to charge any other fees that may be due to our Deposit Account No. 50-0384 (Order No. SRI1P037). A copy of this sheet is enclosed for this purpose.

Respectfully submitted,
HICKMAN COLEMAN & HUGHES, LLP

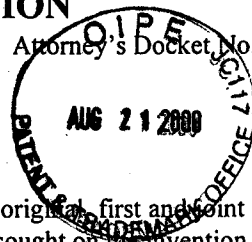


Raymond E. Roberts
Reg. No. 38,597

P.O. Box 52037
Palo Alto, CA 94303-0746
(408) 558-9950

**DECLARATION AND POWER OF ATTORNEY
FOR ORIGINAL U.S. PATENT APPLICATION**

Attorney's Docket No. SRI1P037 # 3



As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK, the specification of which,

- (check one)
1. is attached hereto.
 2. was filed on March 13, 2000 as U.S. Application Serial No. 09/524,095 and was amended on _____.
 3. was filed on _____ as International PCT Application Serial No. _____ and was amended on _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, CFR § 1.56.

I hereby claim foreign priority benefits under Title 35, United States code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Benefits Claimed?
_____ (Appl. No.)	_____ (Country)	_____ (Filing Date)	<input type="checkbox"/> Yes <input type="checkbox"/> No
_____ (Appl. No.)	_____ (Country)	_____ (Filing Date)	<input type="checkbox"/> Yes <input type="checkbox"/> No
_____ (Appl. No.)	_____ (Country)	_____ (Filing Date)	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

_____ (Application Serial No.)	_____ (Filing Date)
_____ (Application Serial No.)	_____ (Filing Date)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S. Application(s)

(Application Serial No.)

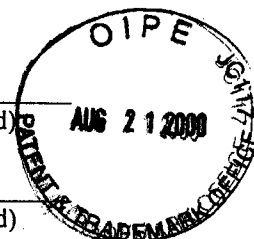
(Filing Date)

(Status - patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status - patented, pending, abandoned)



And I hereby appoint the law firm of Hickman Stephens Coleman & Hughes, including Paul L. Hickman (Reg. No. 28,516); L. Keith Stephens (Reg. No. 32,632); Brian R. Coleman (Reg. No. 39,145); Michael J. Hughes (Reg. No. 29,077); Michael E. Melton (Reg. No. 32,276); Raymond E. Roberts (Reg. No. 38,597); Vidya R. Bhakar (Reg. No. 42,323); Larry B. Guernsey (Reg. No. 40,008); Douglas E. Mackenzie (Reg. No. 38,955); Michael D. Plimier (Reg. No. 43,004); Ronald B. Feece (Reg. No. P46,327); Stefanie M. Howell (Reg. No. P45,929); and Robert D. Hayden (Reg. No. 42,645) as my principal attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Send Correspondence To: HICKMAN STEPHENS COLEMAN & HUGHES, LLP
P.O. BOX 52037
Palo Alto, California 94303-0746

Direct Telephone Calls To: Raymond E. Roberts at telephone number (408) 558-9950

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

Typewritten Full Name of

Sole or First Inventor:

Christine Halverson

Citizenship:

USA

Inventor's signature:

Christine Halverson

Date of Signature:

6-16-00

Residence:

(City)

San Jose

(State/Country)

California/USA

Post Office Address:

1623 Fairorchard Avenue, San Jose, California 95125

Full Name of Second Joint

Inventor (if any):

Luc Julia

Citizenship:

USA

Inventor's signature:

Luc Julia

Date of Signature:

6-21-00

Residence:

(City)

Menlo Park

(State/Country)

California/USA

Post Office Address:

607 Menlo Avenue, Menlo Park, California 94025

Full Name of Third Joint

Inventor (if any):

Dimitris Voutsas

Citizenship:

Greece

Inventor's signature:

Dimitris Voutsas

Date of Signature:

6/16/00

Residence:

(City)

Thessaloniki

(State/Country)

Greece

Post Office Address:

14 M. Pyrza Street, Neoi Epivates, Thessaloniki 57019, Greece

Prior U.S. Application(s)

(Application Serial No.)

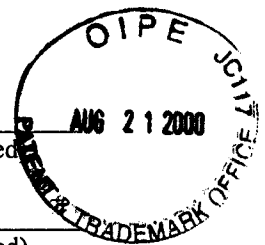
(Filing Date)

(Status - patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status - patented, pending, abandoned)



And I hereby appoint the law firm of Hickman Stephens Coleman & Hughes, including Paul L. Hickman (Reg. No. 28,516); L. Keith Stephens (Reg. No. 32,632); Brian R. Coleman (Reg. No. 39,145); Michael J. Hughes (Reg. No. 29,077); Michael E. Melton (Reg. No. 32,276); Raymond E. Roberts (Reg. No. 38,597); Vidya R. Bhakar (Reg. No. 42,323); Larry B. Guernsey (Reg. No. 40,008); Douglas E. Mackenzie (Reg. No. 38,955); Michael D. Plimier (Reg. No. 43,004); Ronald B. Feece (Reg. No. P46,327); Stefanie M. Howell (Reg. No. P45,929); and Robert D. Hayden (Reg. No. 42,645) as my principal attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Send Correspondence To:

HICKMAN STEPHENS COLEMAN & HUGHES, LLP
P.O. BOX 52037
Palo Alto, California 94303-0746

Direct Telephone Calls To:

Raymond E. Roberts at telephone number (408) 558-9950

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

Typewritten Full Name of Sole or First Inventor:

Christine Halverson

Citizenship: USA

Inventor's signature:

Christine Halverson

Date of Signature: 6-16-00

Residence: (City)

San Jose

(State/Country) California/USA

Post Office Address:

1623 Fairorchard Avenue, San Jose, California 95125

Full Name of Second Joint Inventor (if any):

Luc Julia

Citizenship: USA

Inventor's signature:

Date of Signature:

Residence: (City)

Menlo Park

(State/Country) California/USA

Post Office Address:

607 Menlo Avenue, Menlo Park, California 94025

Full Name of Third Joint Inventor (if any):

Dimitris Voutsas

Citizenship: Greece

Inventor's signature:

Dimitris Voutsas

Date of Signature: 6/16/00

Residence: (City)

Thessaloniki

(State/Country) Greece

Post Office Address:

14 M. Pyrza Street, Neoi Epivates, Thessaloniki 57019, Greece

Full Name of Fourth Joint
Inventor (if any):

A Cheyer

Citizen: USA

Inventor's signature:

Adem J. Cheyer

Date of Signature: 6/22/00

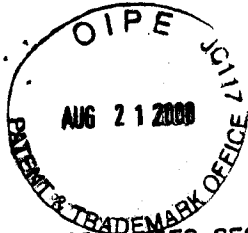
Residence: (City)

Palo Alto

(State/Country) California /USA

Post Office Address:

757 Cereza Drive, Palo Alto, California 94306



33/04/1999 14:26 650-859-6420

SRI PATENT OFFICE

PAGE 02

#3

HS&C Docket No. SRI 99016
SRI Docket No. US39492

PATENT

**VERIFIED STATEMENT CLAIMING SMALL-ENTITY STATUS
(37 CFR 1.9(f) & 1.27(d))--NONPROFIT ORGANIZATION**

Applicant or Patentee: Adam J. Cheyer et al.
Serial or Patent No.: 09/225198
Filed or Issued: January 5, 1999
Title: SOFTWARE-BASED ARCHITECTURE FOR COMMUNICATION AND
COOPERATION AMONG DISTRIBUTED ELECTRONIC AGENTS

I hereby declare that I am an official empowered to act on behalf of the nonprofit organization identified below:

NAME OF NONPROFIT ORGANIZATION: SRI International
ADDRESS OF NONPROFIT ORGANIZATION: 333 Ravenswood Avenue
Menlo Park, CA 94025-3493

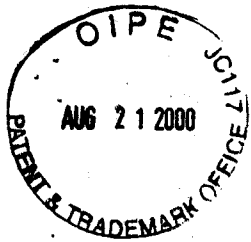
TYPE OF NONPROFIT ORGANIZATION:

- UNIVERSITY OR OTHER INSTITUTION OF HIGHER EDUCATION
- TAX-EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) and 501(c)(3))
- NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA
(NAME OF STATE: California)
(CITATION OF STATUTE: Sections 5110 et seq., California Corporations Code)
- WOULD QUALIFY AS TEXT-EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) AND 501(c)(3)) IF LOCATED IN THE UNITED STATES OF AMERICA
- WOULD QUALIFY AS NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA IF LOCATED IN THE UNITED STATES OF AMERICA
(NAME OF STATE:)
(CITATION OF STATUTE:)

I hereby declare that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees to the United States Patent and Trademark Office regarding the invention in:

- the specification filed herewith with title as listed above.
- the application identified above.
- the patent identified above.

I hereby declare that rights under contract or law have been conveyed to and remain with the non-profit organization regarding the above-identified invention. If the rights held by the nonprofit organization are not exclusive, each individual, concern, or organization having rights in the invention must file separate verified statements averring to their status as small entities and that no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR



13/04/1999 14:26 650-859-6420

SRI PATENT OFFICE

PAGE 03

HS&C Docket No. SRI 1999016
SRI Docket No. US394821

PATENT

1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:

- no such person, concern, or organization exists.
- each such person, concern, or organization is listed below.

NAME:
ADDRESS:

- INDIVIDUAL
- SMALL BUSINESS CONCERN
- NONPROFIT ORGANIZATION

NAME:
ADDRESS:

- INDIVIDUAL
- SMALL BUSINESS CONCERN
- NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small-entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

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

NAME OF PERSON SIGNING:
TITLE IN ORGANIZATION:
ADDRESS OF PERSON SIGNING:

Mary Lou Joyner
Assistant Secretary
333 Ravenswood Ave., Menlo Park, CA 94025-3493

SIGNATURE:

Mary Lou Joyner

DATE: March 4, 1999



#3

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)	Group Art Unit: 2755
Adam J. CHEYER et al.)	Examiner: Not Assigned
Serial No. 09/225,198)	Attorney Docket No. (SRIIP016)
Filed: January 5, 1999)	Date: March 5, 1999
For: SOFTWARE-BASED ARCHITECTURE FOR COMMUNICATION AND COOPERATION AMONG DISTRIBUTED ELECTRONIC AGENTS)	

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, DC 20231 on March 5, 1999.

Signed: [Signature]
Jayashree Vasudevan

Commissioner of Patents and Trademarks
Washington, DC 20231

ATTENTION: Refund Section, Accounting Division, Office of Finance

REQUEST FOR REFUND

(Improper charge of Deposit Account)

I. REFUND REQUEST

This is a request for a refund with respect to the charge to Deposit Account 50-0384 shown on the statement dated January 29, 1999 (Order No. SRIIP016) for the above-identified patent. A copy of the monthly statement in which the error referred to occurs, accompanies this request.

II. FEES CHARGED FOR WHICH REFUND REQUESTED

Basic Fee	\$ 760.00
Sixty nine (69) claims	\$1242.00
Three (3) Independent Claims	\$ 234.00

for the total amount of \$2236.00 in the above referenced application.

III. EXPLANATION OF WHY CONTESTED CHARGE IS IN ERROR


The above mentioned charges as a large entity were charged to our Deposit Account No. 50-0384. Enclosed herewith is a true facsimile copy of Verified Statement Claiming Small Entity Status by our client (SRI International) as a Non-Profit Organization.



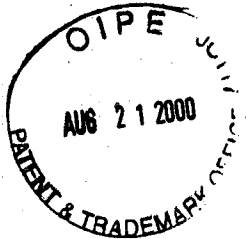
IV. MANNER OF REFUND

Please make refund by crediting Account No. 50-0384 (Order No. SRI1P016) in the amount of \$1118.00.

Respectfully submitted,
HICKMAN STEPHENS & COLEMAN, LLP


Brian R. Coleman
Reg. No. 39,145

Hickman Stephens & Coleman, LLP
P.O. Box 52037
Palo Alto, CA 94303-0746
(650)470-7430



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

**MONTHLY STATEMENT
OF DEPOSIT ACCOUNT**

Replenish your Deposit Account, detach and return top portion with your check. Make check payable to Commissioner of Patents & Trademarks.

HICKMAN & MARTINE LLP
HUSAM Y HAMMAD
200 PAGE MILL ROAD, SUITE 100
PALO ALTO CA 94306

FINA

Account No.	500384
Date	1-29-99
Page	1

PLEASE SEND REMITTANCES TO:
Patent and Trademark Office
P.O. Box 70541
Chicago, Ill. 60673

POSTED YR.	CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
			DHL1P001	103	Reg Fee 607.00	Refund 4417.00
1 99	164	09166819		899	105.00	4312.00
5 99	52	PCT/US98/21030	SAS1P432.Pct	157	157.50 < 52.50	Call Pro 4259.50
5 99	53	PCT/US98/21030		102	60.00 < 20.00	4239.50
6 99	47	09218542	LAM1P084	581	60.00 < 40.00	2/99 4199.50
6 99	49	09218542	LAM1P084	581	60.00 < 20.00	2/99 4179.50
7 99	66	09220738	ADAPP068	581	60.00 < 40.00	2/99 4139.50
7 99	68	09220738	ADAPP068	581	60.00 < 40.00	2/99 4929.50
8 99	348	09174491	ELECP003A	101	< -790.00	off set 4899.50
8 99	351	09174491	ELECP003A	101	30.00	by 10/99 4954.50
8 99	351	09174491	ELECP003A	101	-55.00	Call Pro 4954.50
1 99	356	08766513 NOT OURS		704	-5000.00	9954.50
2 99	38	PAYMENT		701	150.00	2/99 9804.50
2 99	144	60114493	LAM1P083+	114	-90.00	2/99 9894.50
4 99	71	09214694	KKE1 P004	704	42.00	9852.50
4 99	193	09173583	ELECP006 A	105	82.00 < 40.00	2/99 9812.50
4 99	195	09173583	ELECP006 A	581	40.00	2/99 9772.50
15 99	126	09225198	SRI1P016	581	760.00	1/31/99 9012.50
19 99	50	09225198	SRI1P016	101	234.00	1/31/99 8778.50
19 99	51	09225198	SRI1P016	102	1242.00	1/31/99 7536.50
19 99	52	09225198	SRI1P016	103	760.00	1/31/99 6776.50
21 99	20	09226380	ELECP010A	101	< 234.00	charge diff 6542.50
21 99	21	09226380	ELECP010A	102	306.00	in a file 6236.50
21 99	22	09226380	ELECP010A	103	40.00	6196.50
21 99	78	PCT/US98/12578	BEH1 P001 Pct	803	158.00	2/99 6038.50
21 99	149	09138304	THH1 P049	101	274.00	2/99 5764.50
22 99	64	09169638	THH1 P029	103	40.00	2/99 5724.50
22 99	70	PCT/US98/12591	THH1 P030 Pct	803	40.00	2/99 5724.50
22 99	184	PCT/US98/12389	THH1 P031 Pct	803	Call Pro 40.00	Call Pro 5684.50
26 99	86	09169750	THH1 P018	103	92.00	Refund 5552.50
26 99	88	09169750	THH1 P018	581	Reg Fee < 40.00	2/99 5406.50
26 99	134	09138309	THH1 P050	116	146.00	2/99 5244.50
26 99	136	09179382	IMM1P054	103	162.00	2/99 5244.50
26 99	12	08807709	SAS1P008B	116	380.00	2/99 4864.50
27 99	12	08807709	SAS1P008B	116	100.00	2/99 4764.50
29 99	395	5701140	THH1 P007 US	145		

#3



PATENT POSTCARD

Docket No. SRIIP016

Appln. No. 09/225,198

ALWAYS USE DATE: March 5, 1999

By: BRC/jv

Filing Date: January 5, 1999

Express Mail No. 211

Inventor(s): Adam J. Cheyer et al.

Title: SOFTWARE-BASED ARCHITECTURE FOR COMMUNICATION AND COOPERATION AMONG DISTRIBUTED ELECTRONIC AGENTS

The following has been received in the U.S. Patent & Trademark Office on the date stamped below:

- X Return Receipt Postcard
- X Request for Refund
- X Verified Statement Claiming Small-Entity Status
- X Monthly Statement of Deposit Account dated 1/29/99



REC'D MAR 22 1999

Handwritten initials and date: 2/29/99

PATENT POSTCARD

Page 3

Docket No. SRI1P016 Appln. No.: 09/225,198 Date March 5, 1999
 By: ARC/jv Filing Date: January 5, 1999 Express Mail No.: _____
 Inventor(s): Adam J. Cheyer et al.
 Title: SOFTWARE-BASED ARCHITECTURE FOR COMMUNICATION AND COOPERATION AMONG DISTRIBUTED ELECTRONIC AGENTS

The following has been received in the U.S. Patent & Trademark Office on the date stamped below:

- X Return Receipt Postcard
- X Request for Refund
- X Verified Statement Claiming Small-Entity Status
- X Monthly Statement of Deposit Account dated 1/29/99



Hickman Stepien...
 U.S.: Foreign: _____
 Docketed: 3/8/99 By: AP
 Action: Small entity filed
 Due Date: February 1999
 Atty: B.R.G. & E.W.L.
 Docket #: SRI1P016.US

*Status inquiry re refund
6/5/99*



FORMALITIES LETTER



OC00000005113304



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENT AND TRADEMARKS
Washington, D.C. 20231

#3

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/524,095	03/13/2000	Christine Halverson	SRI1P037

Hickman Stephens Coleman & Hughes LLP
PO Box 52037
Palo Alto, CA 94303-0746

Date Mailed: 05/12/2000

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 130.**

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

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10/31/00
EW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of
Christine HALVERSEN et al.
Application No. 09/524,095
Filed: March 13, 2000



Docket:
SRI1P037A

Date: June 30, 2000

For: NAVIGATING NETWORK BASED
ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL
ERROR FEEDBACK

Preliminary Amendment

Assistant Commissioner for Patents
and Trademarks
Washington, DC 20231

Dear Sir:

In regard to the above-named patent application, please enter the following amendments.

IN THE TITLE: ✓

Please delete "NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK", and insert therefor-- NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN INPUT WITH MULTIMODAL ERROR FEEDBACK--.

IN THE ABSTRACT: ✓

Please delete the Abstract and insert therefore [A system, method, and article of manufacture are provided for navigating an electronic data source by means of spoken language.

SRI1P037A

- 1 -

07/07/2000 WKORDNA 00000064 09524095

01 FC:203

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a' When a spoken input request is received from a user, it is interpreted. Additional input is solicited from the user in a modality different than the original request and used to refine the navigation query. The resulting interpretation of the request is thereupon used to automatically construct an operational navigation query to retrieve the desired information from one or more electronic network data sources. ✓

[IN THE SPECIFICATION:

Please delete page 3, lines 3 to 32, and insert therefore, ✓ ~~the~~ The present invention addresses the above needs by providing a system, method, and article of manufacture for navigating network-based electronic data sources in response to spoken input requests. When a spoken input request is received from a user, it is interpreted, such as by using a speech recognition engine to extract speech data from acoustic voice signals, and using a language parser to linguistically parse the speech data. The interpretation of the spoken request can be performed on a computing device locally with the user or remotely from the user. The resulting interpretation of the request is thereupon used to automatically construct an operational navigation query to retrieve the desired information from one or more electronic network data sources, which is then transmitted to a client device of the user. If the network data source is a database, the navigation query is constructed in the format of a database query language.

a.2 Typically, errors or ambiguities emerge in the interpretation of the spoken request, such that the system cannot instantiate a complete, valid navigational template. This is to be expected occasionally, and one preferred aspect of the invention is the ability to handle such errors and ambiguities in relatively graceful and user-friendly manner. Instead of simply rejecting such input and defaulting to traditional input modes or simply asking the user to try again, a preferred embodiment of the present invention seeks to converge rapidly toward instantiation of a valid navigational template by soliciting additional clarification from the user as necessary, either before or after a navigation of the data source, via multimodal input, i.e., by means of menu selection or other input modalities including and in addition to spoken input. This clarifying, multi-modal dialogue takes advantage of whatever partial navigational information has been gleaned from the initial interpretation of the user's spoken request. This clarification process continues until the system converges toward an adequately instantiated navigational template, which is in turn used to navigate the network-based data and retrieve the user's desired information. The retrieved information is transmitted across the network and presented to the user on a suitable client display device. ✓

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IN THE CLAIMS:

Please delete claims 1-55, and insert therefore the following claims 1-66:

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1. (New) A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a modality different than the original request;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source;
and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

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57
2. (New) The method of claim 1, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and a linguistic parser.

58
3. (New) The method of claim 1, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

59
4. (New) The method of claim 3, wherein the step of extracting an input template includes dynamically scraping the online scripted interface.

60
5. (New) The method of claim 1, wherein the navigation query is constructed in the format of a database query language.

61
6. (New) The method of claim 1, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

a3

62
7. (New) The method of claim 1, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

63
8. (New) The method of claim 1, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

64
9. (New) The method of claim 8, wherein the deficiencies include unresolved words of the spoken request.

65
10. (New) The method of claim 8, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

R1.126

⁶⁶11. (New) The method of claim ⁵⁶1, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

⁶⁷12. (New) The method of claim ⁶⁶11, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

⁶⁸13. (New) The method of claim ⁶⁶11, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

⁶⁹14. (New) The method of claim ⁵⁶1, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

⁷⁰15. (New) The method of claim ⁵⁶1, wherein the step of soliciting the additional input includes presenting a menu to the user on the client device of the user.

⁷¹16. (New) The method of claim ⁵⁶1, wherein the step of soliciting the additional input includes presenting a textual request for the additional input.

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⁷²17. (New) The method of claim ⁵⁶1, wherein the step of soliciting the additional input includes an audible request for the additional input.

⁷³18. (New) The method of claim ⁵⁶1, wherein the step of soliciting the additional input includes presenting a list of portions of the electronic data source that match the navigational query.

⁷⁴19. (New) The method of claim ⁵⁶1, wherein additional input received from the user is at least partially speech based.

⁷⁵20. (New) The method of claim ⁵⁶1, wherein additional input received from the user includes no spoken input.

⁷⁶21. (New) The method of claim ⁵⁶1, wherein steps (d)-(e) are repeated until the navigational query is deemed adequate.

R1.126

⁷⁷
~~27.~~ (New) The method of claim ⁵⁰~~1~~, wherein the input modality of step (d) includes selecting from a displayed option menu.

⁷⁸
~~28.~~ (New) The method of claim ⁷⁷~~22~~, wherein the act of selecting from the displayed option menu is performed by speaking.

⁷⁹
~~29.~~ (New) The method of claim ⁵⁰~~1~~, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

⁸⁰
~~30.~~ (New) The method of claim ⁵⁰~~1~~, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

⁸¹
~~31.~~ (New) The method of claim ⁵⁰~~1~~, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

AB

⁸²
~~32.~~ (New) A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken request for desired information from the user;
- (b) language processing logic, operable to render an interpretation of the spoken request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a modality different than the original request;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;

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und

- (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
- (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

⁸³
~~28.~~ (New) The system of claim ⁸² 27, wherein the language processing logic includes speech recognition logic and a linguistic parsing logic for deriving linguistic information.

⁸⁴
~~29.~~ (New) The system of claim ⁸² 27, wherein the language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

⁸⁵
~~30.~~ (New) The system of claim ⁸⁴ 29, wherein the language processing logic dynamically scrapes the online scripted interface.

⁸⁶
~~31.~~ (New) The system of claim ⁸² 27, wherein the query construction logic constructs the query in the format of a database query language.

⁸⁷
~~32.~~ (New) The system of claim ⁸² 27, wherein at least a portion of the language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

⁸⁸
~~33.~~ (New) The system of claim ⁸² 27, wherein at least a portion of the language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

⁸⁹
~~34.~~ (New) The system of claim ⁸² 27, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

⁹⁰
~~35.~~ (New) The system of claim ⁸⁹ 34, wherein the deficiencies include unresolved words of the spoken request.

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⁹¹
~~36.~~ (New) The system of claim ~~34~~⁸², wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

⁹²
~~37.~~ (New) The system of claim ~~37~~⁹², wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

⁹³
~~38.~~ (New) The system of claim ~~37~~⁹², wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

⁹⁴
~~39.~~ (New) The system of claim ~~37~~⁹², wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

⁹⁵
~~40.~~ (New) The system of claim ~~37~~⁸², wherein the user interaction logic displays an option menu.

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⁹⁶
~~41.~~ (New) The system of claim ~~40~~⁹⁵, wherein the act of selecting from the displayed option menu is performed by speaking.

⁹⁷
~~42.~~ (New) The system of claim ~~37~~⁸², wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

⁹⁸
~~43.~~ (New) The system of claim ~~37~~⁸², wherein the electronic data source stores multimedia content including at least one of video content and audio content.

⁹⁹
~~44.~~ (New) The system of claim ~~37~~⁸², wherein the display device receives data from the electronic data source on the network servers via a communications box.

¹⁰⁰
~~45.~~ (New) The system of claim ~~37~~⁸², wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

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46.

(New) A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a modality different than the original request;
- (e) a code segment that refines the navigation query, based upon the additional input;
- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

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47.

(New) The computer program of claim 46, further comprising a code segment that derives linguistic information by using a speech recognition engine and a linguistic parser.

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48.

(New) The computer program of claim 46, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

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49.

(New) The computer program of claim 48, further comprising a code segment that dynamically scrapes the online scripted interface.

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50.

(New) The computer program of claim 46, wherein the navigation query is constructed in the format of a database query language.

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106

51. (New) The computer program of claim ~~46~~¹⁰¹, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

107

52. (New) The computer program of claim ~~46~~¹⁰¹, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

108

53. (New) The computer program of claim ~~46~~¹⁰¹, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

109

54. (New) The computer program of claim ~~53~~¹⁰⁸, wherein the deficiencies include unresolved words of the spoken request.

110

55. (New) The computer program of claim ~~53~~¹⁰⁸, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

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56. (New) The computer program of claim ~~46~~¹⁰¹, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

112

57. (New) The computer program of claim ~~56~~¹¹¹, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

113

58. (New) The computer program of claim ~~57~~¹¹², wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

114

59. (New) The computer program of claim ~~46~~¹⁰¹, wherein code segment that solicits additional input displays an option menu.

115

60. (New) The computer program of claim ~~59~~¹¹⁴, wherein the act of selecting from the displayed option menu is performed by speaking.

R1.126

116
61. (New) The computer program of claim 46, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

117
62. (New) The computer program of claim 46, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

118
63. (New) The computer program of claim 46, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

119
64. (New) The computer program of claim 46, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

120
65. (New) The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a menu to the user on the client device of the user.

121
66. (New) The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a textual request for the additional input.

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122
67. (New) The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that produces an audible request for the additional input.

123
68. (New) The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a list of portions of the electronic data source that match the navigational query.

124
69. (New) The computer program of claim 46, wherein additional input received from the user is at least partially speech based.

125
70. (New) The computer program of claim 46, wherein additional input received from the user includes no spoken input.

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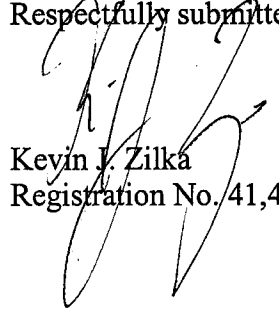
126

101

71. (New) The computer program of claim ~~46~~, wherein code segments (d)-(e) are repeated until the navigational query is deemed adequate.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-1351 (Order No. SRI1P037A). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,



Kevin J. Zilka
Registration No. 41,429

P.O. Box 721030
San Jose, CA 95172
Telephone: (408) 505-5100



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

030074

In re the application of)
 Christine HALVERSEN et al.)
 Application No. 09/524,095)
 Filed: March 13, 2000)
 For: NAVIGATING NETWORK BASED)
 ELECTRONIC INFORMATION USING SPOKEN)
 NATURAL LANGUAGE INPUT WITH MULTIMODAL)
 ERROR FEEDBACK)



Docket:
SRI1P037A

Date: June 30, 2000

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Assistant Commissioner for Patents, Washington, DC 20231 on June 30, 2000.

Signed: _____
 Kevin J. Zilka

Assistant Commissioner for Patents
 Box Fee Amendment
 Washington, DC 20231

Sir:

Transmitted herewith is an amendment in the above-identified application.

The fee has been calculated as shown below.

	Claims Remaining After <u>Amendment</u>	Highest Previously Paid For Extra	Present	SMALL ENTITY RATE FEE	OR	LARGE RATE FEE	ENTITY
TOTAL CLAIMS	<u>71</u>	<u>55</u>	<u>16</u>	X09 = \$ 144	OR	X18 = \$	
INDEP CLAIMS	<u>3</u>	<u>3</u>	<u>0</u>	X39 = \$	OR	X78 = \$	
[] Multiple Dependent Claim Present and Fee Not Previously Paid				\$130		\$260	
			TOTAL	\$ <u>144.00</u>		\$ _____	

- Applicant(s) hereby petition for a month extension of time to respond to the outstanding Office Action.
- Applicant(s) believe that no (additional) Extension of Time is required; however, if it is determined that such an extension is required, Applicant(s) hereby petition that such an extension be granted and authorize the Commissioner to charge the required fees for an Extension of Time under 37 CFR 1.136 to Deposit Account No. 50-1351.
- Enclosed is our Check No. 139 in the amount of \$144.00 to cover the additional claim fee and/or extension of time fees.
- If the required fees are missing or any additional fees are required to facilitate filing the enclosed response, please charge such fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. SRI1P037A).

Respectfully submitted,

 Kevin J. Zilka
 Registration No. 41,429



SECTOR #5
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
 Christine Halverson et al..)
) Group Art Unit: Unknown
)
 Application No. 09/524,095) Examiner: Unknown
)
 Filed: 3/13/00) Date: July 17, 2000
)
 For: Navigating Network-Based Electronic Information)
 Using Spoken Natural Language Input With Multimodal)
 Error Feedback)
 _____)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents and Trademarks, Washington, DC 20231 on July 17, 2000.

Signed: Kimberly Maih
Kimberly Maih

REQUEST FOR STATUS

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Applicant hereby requests status of the above-referenced patent application. This application was filed on March 13, 2000, and no Notice of Missing parts has been received as of this date.

Respectfully submitted

HICKMAN STEPHENS COLEMAN & HUGHES, LLP

Raymond E. Roberts
Raymond E. Roberts
Reg. No. 38,597

P.O. Box 52037
Palo Alto, CA 94303-0746
(408) 558-9950

GP 2758

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:)
 Christine Halverson)
 Application No.: Unassigned 09524095)
 Filed: 3/13/2000)
 For: Navigating Network-Based Electronic)
 Information Using Spoken Natural)
 Language Input with Multimodal Error)
 Feedback)

Group Art Unit Unknown

Examiner: Unknown

Atty. Docket No.: SRI1P037

Date: May 23, 2000



TC 2780 MAIL ROOM

JUN - 1 2000

RECEIVED

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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on May 23, 2000.

Signed: Kimberly M.
Kimberly Main

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§ 1.56 AND 1.97(c)

Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

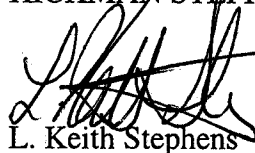
The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§ 1.56 and 1.97. The Examiner is requested to make these references of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

It is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-0384 (Order No. SRI1P037).

Respectfully submitted,

HICKMAN STEPHENS COLEMAN & HUGHES, LLP



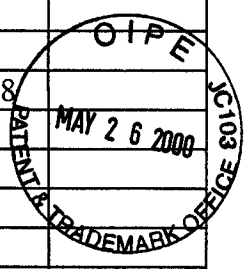
L. Keith Stephens
Reg. No. 32,632

P.O. Box 52037
Palo Alto, CA 94303-0746
Telephone: (408) 558-9950

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty. Docket No. SRI1P037	Application No.: Unassigned
	Applicant: Christine Halverson	Group and Unit: Unknown
	Filing Date: 3/13/2000	RECEIVED JUN - 1 2000 MAIL ROOM

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
F.B.	A	5,197,005	3/23/93	Schwartz et al.	364	419	
	B	5,386,556	1/31/95	Hedin et al.	395	600	
	C	5,434,777	7/18/95	Luciw	364	419	
	D	5,519,608	5/21/96	Kupiec	364	419.08	
	E	5,608,624	3/4/97	Luciw	395	794	
	F	5,721,938	2/24/98	Stuckey	395	754	
	G	5,729,659	3/17/98	Potter	395	2.79	
	H	5,748,974	5/5/98	Johnson	395	759	
	I	5,774,859	6/30/98	Houser et al.	704	275	
	J	5,794,050	8/11/98	Dahlgren et al.	395	708	
	K	5,802,526	9/1/98	Fawcett et al.	707	104	



Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	L							
	M							
	N							
	O							
	P							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	R	
	S	
	T	

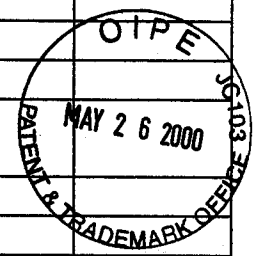
Examiner: *Sumner Joch* Date Considered: *4/6/01*

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty. Docket No. SRI1P037	Application No.: Unassigned
	Applicant: Christine Halverson	Group A Unit: Unknown
	Filing Date: 3/13/2000	RECEIVED JAN - 11 2000 5500 MAIL ROOM

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
F.B.	A	5,805,775	9/8/98	Eberman et al.	395	12	
	B	5,855,002	12/29/98	Armstrong	704	270	
	C	5,890,123	3/30/99	Brown et al.	704	275	
	D	5,963,940	10/5/99	Liddy et al.	707	5	
	E	6,003,072	12/14/99	Gerritsen et al.	709	218	
	F	6,012,030	1/4/00	French-St. George et al.	704	275	
	G	6,026,388	2/15/00	Liddy et al.	707	1	
	H						
	I						
	J						
	K						



Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	L							
	M							
	N							
	O							
	P							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	R	
	S	
Examiner	Date Considered	
<i>F. B. Liddy</i>	<i>4/6/01</i>	

Examiner/ Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:)
 Christine Halverson)
 Application No.: Unassigned)
 Filed: Herewith)
 For: Navigating Network-Based Electronic)
 Information Using Spoken Natural)
 Language Input with Multimodal Error)
 Feedback)

Group Art Unit: Unknown

Examiner: Unknown

Atty. Docket No.: SRI1P037

Date: March 13, 2000



#7 IDS w/refs
10/31/00
JW

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on March 13, 2000.

Signed:

Julie A. Curtis

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§ 1.56 AND 1.97(c)

Assistant Commissioner for Patents
 Washington, DC 20231

Dear Sir:

The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§ 1.56 and 1.97. The Examiner is requested to make these references of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

It is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-0384 (Order No. SRI1P037).

Respectfully submitted,
HICKMAN STEPHENS COLEMAN & HUGHES, LLP



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THE FOLLOWING WAS MISSING
FROM THE ORIGINAL USPTO
FILE HISTORY

PTO-1449

Pages **1 of 3 & 3 of 3**

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty. Docket No. SRIIP037	Application No.: Unassigned <i>09524615</i>
	Applicant: Christine Halverson	Group Art Unit: Unknown
Filing Date: Herewith		

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A						
	B						
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	L							
	M							
	N							
	O							
	P							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>F.B</i>	R	http://www.ai.sri.com/~jesaf/commandtalk.html : "CommandTalk: A Spoken-Language Interface for Battlefield Simulations", 1997, by Robert Moore, John Dowding, Harry Bratt, J. Mark Gawron, Yonael Gorfu and Adam Cheyer, in "Proceedings of the Fifth Conference on Applied Natural Language Processing", Washington, DC, pp. 1-7, Association for Computational Linguistics
<i>F.B</i>	S	"The CommandTalk Spoken Dialogue System", 1999, by Amanda Stent, John Dowding, Jean Mark Gawron, Elizabeth Owen Bratt and Robert Moore, in "Proceedings of the Thirty-Seventh Annual Meeting of the ACL", pp. 183-190, University of Maryland, College Park, MD, Association for Computational Linguistics
Examiner <i>Sumner Sab</i>		Date Considered <i>12/30/02</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



7 1/2 / B
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of)
)
Christine HALVERSEN et al.)
)
Application No. 09/524,095)
)
Filed: March 13, 2000)
)
For: NAVIGATING NETWORK BASED)
ELECTRONIC INFORMATION USING SPOKEN)
INPUT WITH MULTIMODAL)
ERROR FEEDBACK)
)

Docket:
SRI1P037A

203 x 55
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APR 12 2001
Technology Center 2100

Date: September 12, 2000

CERTIFICATE OF MAILING

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Signed:  _____
Kevin J. Zilka

09/22/2000 EFLORES 00000035 09524095

01 FC:203
02 FC:202

495.00 OP
117.00 OP

Preliminary Amendment B

Assistant Commissioner for Patents
and Trademarks
Washington, DC 20231

Dear Sir:

Please supplement the Preliminary Amendment filed June 30, 2000 regarding the above-identified patent application by entering the following amendments.

IN THE CLAIMS:

SRI1P037A

Please re-insert the originally filed claims as new claims 72-126. Pending claims 1-71 added in the previous Preliminary Amendment have been included for reference purposes. All currently pending claims are thus represented below.

1. A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a modality different than the original request;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source;
and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

2. The method of claim 1, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and a linguistic parser.

3. The method of claim 1, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

4. The method of claim 3, wherein the step of extracting an input template includes dynamically scraping the online scripted interface.

5. The method of claim 1, wherein the navigation query is constructed in the format of a database query language.

6. The method of claim 1, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

7. The method of claim 1, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

8. The method of claim 1, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

9. The method of claim 8, wherein the deficiencies include unresolved words of the spoken request.

10. The method of claim 8, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

11. The method of claim 1, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

12. The method of claim 11, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

13. The method of claim 11, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

14. The method of claim 1, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

15. The method of claim 1, wherein the step of soliciting the additional input includes presenting a menu to the user on the client device of the user.

16. The method of claim 1, wherein the step of soliciting the additional input includes presenting a textual request for the additional input.

17. The method of claim 1, wherein the step of soliciting the additional input includes an audible request for the additional input.

18. The method of claim 1, wherein the step of soliciting the additional input includes presenting a list of portions of the electronic data source that match the navigational query.

19. The method of claim 1, wherein additional input received from the user is at least partially speech based.

20. The method of claim 1, wherein additional input received from the user includes no spoken input.

21. The method of claim 1, wherein steps (d)-(e) are repeated until the navigational query is deemed adequate.

22. The method of claim 1, wherein the input modality of step (d) includes selecting from a displayed option menu.

23. The method of claim 22, wherein the act of selecting from the displayed option menu is performed by speaking.

24. The method of claim 1, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

25. The method of claim 1, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

26. The method of claim 1, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

27. A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken request for desired information from the user;
- (b) language processing logic, operable to render an interpretation of the spoken request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a modality different than the original request;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;
- (f) navigation logic, operable to select a portion of the electronic data source using the navigation query, and
- (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

28. The system of claim 27, wherein the language processing logic includes speech recognition logic and an linguistic parsing logic for deriving linguistic information.

29. The system of claim 27, wherein the language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

30. The system of claim 29, wherein the language processing logic dynamically scrapes the online scripted interface.

31. The system of claim 27, wherein the query construction logic constructs the query in the format of a database query language.

32. The system of claim 27, wherein at least a portion of the language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

33. The system of claim 27, wherein at least a portion of the language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

34. The system of claim 27, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

35. The system of claim 34, wherein the deficiencies include unresolved words of the spoken request.

36. The system of claim 34, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

37. The system of claim 27, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

38. The system of claim 37, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

39. The system of claim 37, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

40. The system of claim 27, wherein the user interaction logic displays an option menu.

41. The system of claim 40, wherein the act of selecting from the displayed option menu is performed by speaking.

42. The system of claim 27, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

43. The system of claim 27, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

44. The system of claim 27, wherein the display device receives data from the electronic data source on the network servers via a communications box.

45. The system of claim 27, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

46. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a modality different than the original request;
- (e) a code segment that refines the navigation query, based upon the additional input;

- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

47. The computer program of claim 46, further comprising a code segment that derives linguistic information by using a speech recognition engine and a linguistic parser.

48. The computer program of claim 46, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

49. The computer program of claim 48, further comprising a code segment that dynamically scrapes the online scripted interface.

50. The computer program of claim 46, wherein the navigation query is constructed in the format of a database query language.

51. The computer program of claim 46, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

52. The computer program of claim 46, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

53. The computer program of claim 46, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

54. The computer program of claim 53, wherein the deficiencies include unresolved words of the spoken request.

55. The computer program of claim 53, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

56. The computer program of claim 46, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

57. The computer program of claim 56, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

58. The computer program of claim 57, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

59. The computer program of claim 46, wherein code segment that solicits additional input displays an option menu.

60. The computer program of claim 59, wherein the act of selecting from the displayed option menu is performed by speaking.

61. The computer program of claim 46, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

62. The computer program of claim 46, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

63. The computer program of claim 46, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

64. The computer program of claim 46, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

65. The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a menu to the user on the client device of the user.

66. The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a textual request for the additional input.

67. The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that produces an audible request for the additional input.

68. The computer program of claim 46, wherein the code segment that solicits the additional input includes a code segment that presents a list of portions of the electronic data source that match the navigational query.

69. The computer program of claim 46, wherein additional input received from the user is at least partially speech based.

70. The computer program of claim 46, wherein additional input received from the user includes no spoken input.

71. The computer program of claim 46, wherein code segments (d)-(e) are repeated until the navigational query is deemed adequate.

1272. (New) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- B
- (a) receiving a spoken natural language ("NL") request for desired information from the user;
 - (b) rendering an interpretation of the spoken natural language request;
 - (c) constructing at least part of a navigation query based upon the interpretation;

- (d) soliciting additional input from the user, including user interaction in a modality different than the original request;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

¹²⁸
73. (New) The method of claim ¹²⁷72, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and an NL parser.

¹²⁹
74. (New) The method of claim ¹²⁷72, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

¹³⁰
75. (New) The method of claim ¹²⁹74, wherein the step of extracting an input template includes dynamically scraping the online scripted interface.

¹³¹
76. (New) The method of claim ¹²⁷72, wherein the navigation query is constructed in the format of a database query language.

¹³²
77. (New) The method of claim ¹²⁷72, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

¹³³
78. (New) The method of claim ¹²⁷72, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

¹³⁴
79. (New) The method of claim ¹²⁷72, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

¹³⁵
~~80.~~ (New) The method of claim ¹³⁴~~79~~, wherein the deficiencies include unresolved words of the spoken NL request.

¹³⁶
~~81.~~ (New) The method of claim ¹³⁴~~79~~, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

¹³⁷
~~82.~~ (New) The method of claim ¹²⁷~~72~~, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

¹³⁸
~~83.~~ (New) The method of claim ~~82~~, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

¹³⁹
~~84.~~ (New) The method of claim ¹³⁷~~82~~, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

¹⁴⁰
~~85.~~ (New) The method of claim ¹²⁷~~72~~, wherein the input modality of step (d) includes selecting from a displayed option menu.

¹⁴¹
~~86.~~ (New) The method of claim ¹⁴⁰~~85~~, wherein the act of selecting from the displayed option menu is performed by speaking.

¹⁴²
~~87.~~ (New) The method of claim ¹²⁷~~72~~, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

¹⁴³
~~88.~~ (New) The method of claim ¹²⁷~~72~~, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

¹⁴⁴
~~89.~~ (New) The method of claim ¹²⁷~~72~~, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

¹⁴⁵
~~90.~~ (New) A system for utilizing spoken natural language to navigate an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- B1
- (a) a portable microphone operable to receive a spoken natural language ("NL") request for desired information from the user;
 - (b) spoken language processing logic, operable to render an interpretation of the spoken natural language request;
 - (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken natural language request;
 - (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a modality different than the original request;
 - (e) query refining logic, operable to refine the navigation query, based upon the additional input;
 - (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
 - (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

¹⁴⁶ 91. (New) The system of claim ¹⁴⁵ 90, wherein the spoken language processing logic includes speech recognition logic and an NL parsing logic for deriving linguistic information.

¹⁴⁷ 92. (New) The system of claim ¹⁴⁵ 90, wherein the spoken language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

¹⁴⁸ 93. (New) The system of claim ¹⁴⁷ 92, wherein the spoken language processing logic dynamically scrapes the online scripted interface.

¹⁴⁹ 94. (New) The system of claim ¹⁴⁵ 90, wherein the query construction logic constructs the query in the format of a database query language.

¹⁵⁰
~~98.~~ (New) The system of claim ~~98~~¹⁴⁵, wherein at least a portion of the spoken language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

¹⁵¹
~~96.~~ (New) The system of claim ~~90~~¹⁴⁵, wherein at least a portion of the spoken language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

¹⁵²
~~97.~~ (New) The system of claim ~~90~~¹⁴⁵, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

¹⁵³
~~98.~~ (New) The system of claim ~~97~~, wherein the deficiencies include unresolved words of the spoken NL request.

B¹
¹⁵⁴
~~99.~~ (New) The system of claim ~~97~~, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

¹⁵⁵
~~100.~~ (New) The system of claim ~~90~~¹⁴⁵, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

¹⁵⁶
~~101.~~ (New) The system of claim ~~100~~, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

¹⁵⁷
~~102.~~ (New) The system of claim ~~100~~, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

¹⁵⁸
~~103.~~ (New) The system of claim ~~90~~¹⁴⁵, wherein the user interaction logic displays an option menu.

¹⁵⁹
~~104.~~ (New) The system of claim ~~103~~, wherein the act of selecting from the displayed option menu is performed by speaking.

¹⁶⁰
~~105.~~ (New) The system of claim ¹⁴⁵90, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

¹⁶¹
~~106.~~ (New) The system of claim ¹⁴⁵90, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

¹⁶²
~~107.~~ (New) The system of claim ¹⁴⁵90, wherein the display device receives data from the electronic data source on the network servers via a communications box.

¹⁶³
~~108.~~ (New) The system of claim ¹⁴⁵90, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

¹⁶⁴
~~109.~~ (New) A computer program embodied on a computer readable medium for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- B
- (a) a code segment that receives a spoken natural language ("NL") request for desired information from the user;
 - (b) a code segment that renders an interpretation of the spoken natural language request;
 - (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
 - (d) a code segment that solicits additional input from the user, including user interaction in a modality different than the original request;
 - (e) a code segment that refines the navigation query, based upon the additional input;

- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

¹⁶⁵
~~110.~~ (New) The computer program of claim ¹⁶⁴~~109~~, further comprising a code segment that derives linguistic information by using a speech recognition engine and an NL parser.

¹⁶⁶
~~111.~~ (New) The computer program of claim ¹⁶⁴~~109~~, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

¹⁶⁷
~~112.~~ (New) The computer program of claim ¹⁶⁶~~111~~, further comprising a code segment that dynamically scrapes the online scripted interface.

¹⁶⁸
~~113.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein the navigation query is constructed in the format of a database query language.

¹⁶⁹
~~114.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

¹⁷⁰
~~115.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

¹⁷¹
~~116.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

¹⁷¹
~~117.~~ (New) The computer program of claim ¹⁷¹~~116~~, wherein the deficiencies include unresolved words of the spoken NL request.

¹⁷³
~~118.~~ (New) The computer program of claim ¹⁷¹~~116~~, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

¹⁷⁴
~~119.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

¹⁷⁵
~~120.~~ (New) The computer program of claim ¹⁷⁴~~119~~, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

¹⁷⁶
~~121.~~ (New) The computer program of claim ¹⁷⁴~~119~~, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

¹⁷⁷
~~122.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein code segment that solicits additional input displays an option menu.

¹⁷⁸
~~123.~~ (New) The computer program of claim ¹⁷⁷~~122~~, wherein the act of selecting from the displayed option menu is performed by speaking.

¹⁷⁹
~~124.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

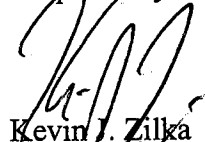
¹⁸⁰
~~125.~~ (New) The computer program of claim ¹⁶⁴~~109~~, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

¹⁸¹
~~126.~~ (New) The computer program of claim ¹⁶⁴~~109~~, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

REMARKS

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-1351 (Order No. SRI1P037A).

Respectfully submitted,



Kevin J. Zilka
Registration No. 41,429
SILICON VALLEY IP LAW GROUP

P.O. Box 721030
San Jose, CA 95172
Telephone: (408) 505-5100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT *BP*

2155

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APR 12 2001

Technology Center 2100

In re the application of)
 Christine HALVERSEN et al.)
 Application No. 09/524,095)
 Filed: March 13, 2000)
 For: NAVIGATING NETWORK BASED)
 ELECTRONIC INFORMATION USING SPOKEN)
 INPUT WITH MULTIMODAL)
 ERROR FEEDBACK)



Docket:
SRI1P037A

Date: September 12, 2000

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Assistant Commissioner for Patents, Washington, DC 20231 on September 12, 2000.

Signed: 
 Kevin J. Zilka

Match & Return

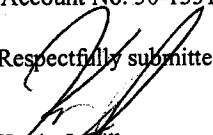
Assistant Commissioner for Patents
 Box Fee Amendment
 Washington, DC 20231

Sir:

Transmitted herewith is an amendment in the above-identified application.
 The fee has been calculated as shown below.

	Claims Remaining After Amendment	Highest Previously Paid For	Present Extra	SMALL ENTITY RATE FEE	OR	LARGE ENTITY RATE FEE
TOTAL CLAIMS	126	71	55	X09 = \$ 495.00	OR	X18 = \$ <i>203 x 55</i>
INDEP CLAIMS	6	3	3	X39 = \$ 117.00	OR	X78 = \$ <i>200 x 3</i>
[] Multiple Dependent Claim Present and Fee Not Previously Paid				\$130		\$260
			TOTAL	\$ 612.00		\$

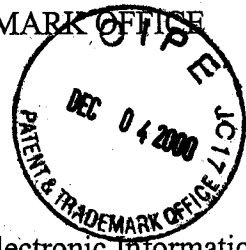
- Applicant(s) hereby petition for a month extension of time to respond to the outstanding Office Action.
- Applicant(s) believe that no (additional) Extension of Time is required; however, if it is determined that such an extension is required, Applicant(s) hereby petition that such an extension be granted and authorize the Commissioner to charge the required fees for an Extension of Time under 37 CFR 1.136 to Deposit Account No. 50-1351.
- Enclosed is our Check No. 192 in the amount of \$612.00 to cover the additional claim fee and/or extension of time fees.
- If the required fees are missing or any additional fees are required to facilitate filing the enclosed response, please charge such fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. SRI1P037A).

Respectfully submitted,

 Kevin J. Zilka
 Registration No. 41,429

Attorney Docket No.: SRIIP037A (US4116-3)

#8
LST
12-10-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



APPLICATION SERIAL NO.: 09/524,095
INVENTOR: Christine Halverson
ASSIGNEE: SRI International
TITLE: Navigating Network-Based Electronic Information Using Spoken Natural Language Input With Multimodal Error Feedback
FILING DATE: March 13, 2000

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DEC 08 2000

Technology Center 2100

REVOCATION AND POWER OF ATTORNEY

Assistant Commissioner for Patents
Washington, DC 20231

The undersigned assignee of the above-referenced patent application hereby revokes all prior powers of attorney and appoints as his attorney, with full powers of substitution and revocation, to transact all business in the Patent and Trademark Office connected with this application and any patent resulting therefrom, the following:

- L. Keith Stephens, Reg. No. 32,632
- C. Douglas McDonald, Reg. No. 26,659
- John.C. Clark, Reg. No. 43,552

Please direct all future communications and telephone calls to:

L. Keith Stephens
CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER, P.A.
P.O. Box 3239
Tampa, FL 33601-3239
(813) 223-7000

SRI INTERNATIONAL

Date: 11/20/00

By: [Signature]
Edward E. Davis, Assistant Secretary

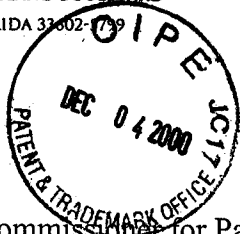
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2155

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November 27, 2000

Assistant Commissioner for Patents
Washington, DC 20231

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DEC 08 2000
Technology Center 2100

Re: Patent Application Serial No.: 09/524,095
Inventor: Douglas E. Appelt, et al.
Title: Navigating Network-Based Electronic
Information Using Spoken Natural Language
Input with Multimodal Error Feedback
Filed: March 13, 2000
Our File No.: 44454/02742

Dear Sir:

Please enter the enclosed Revocation and Power of Attorney into the file of the referenced application.

Very truly yours,

L. Kerth Stephens, Reg. No. 32,632

CDM/cm
Enclosure
cc: Edward E. Davis, Asst. Secretary (w/o encl.)

CERTIFICATE OF MAILING

I do hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to Assistant Commissioner for Patents, Washington, DC 20231, on the date set forth below.

Cynthia Mejias

11/27/00
Date

#8



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRI1P037

24277
Kevin J. Zilka
PO Box 721030
San Jose, CA 95172

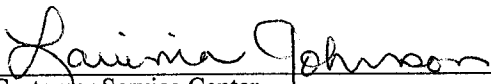


Date Mailed: 12/11/2000

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/04/2000.

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



 Customer Service Center
 Initial Patent Examination Division (703) 308-1202

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#9



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRIIP037

I. KEITH STEPHENS
CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER
P.O. BOX 3239
TAMPA, FL 33601-3239

OC000000005610560

OC000000005610560

Date Mailed: 12/11/2000

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/04/2000.

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

Laurina Johnson

Customer Service Center
Initial Patent Examination Division (703) 308-1202

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**UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

C

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/524,095 03/13/00 HALVERSON

C SRI1F037

EXAMINER

TM02/0424

L. KEITH STEPHENS
CARLTON, FIELDS, WARD, EMMANUEL, SMITH &
P.O. BOX 3239
TAMPA FL 33601-3239

BACKER, F	
ART UNIT	PAPER NUMBER

2155
DATE MAILED:

04/24/01

10

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

Commissioner of Patents and Trademarks

GM

Office Action Summary

Application No. 09/524,095	Applicant(s) HALVERSON ET AL.	
Examiner Firmin Backer	Art Unit 2155	

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 13 March 2000.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 56-126 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 56-126 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119'

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 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.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) Interview Summary (PTO-413) Paper No(s). _____
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other:

DETAILED ACTION

This is in response to a letter for patent filed on June 30th, 2000 in which claims 56-126 are presented for examination. Claims 56-126 are pending in the letter.

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 56-126 are rejected under 35 U.S.C. 102(e) as being anticipated by Levin et al. (U.S. Patent No. 6,173,279).

3. As per claim 56, Levin et al teach a method for speech-based navigation (information server, 110) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising receiving a spoken request (*receive a natural language query*) for desired information from the user (user); rendering an interpretation (*creating a semantic representation*) of the spoken request, constructing a navigation (*generating search*) query based upon the interpretation; soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different that the original request and, refining the navigation query, based upon the additional

input (see column 6 lines 20-59), using the navigation query to select a portion of the electronic data source; and transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22)

4. As per claim 57, Levin et al teach a method of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

5. As per claim 58-62, Levin et al teach a method of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5)

6. As per claim 63-68, Levin et al teach a method of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

7. As per claim 69, Levin et al teach a method wherein the additional input is solicited upon receiving a user-input statement... (see column 6 lines 20-59).

8. As per claim 70-73, Levin et al teach a method of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

9. As per claim 74-75, Levin et al teach a method wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

10. As per claim 76, Levin et al teach a method wherein steps (d)-(e) are repeated until the navigational query is deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

11. As per claim 77, 78, Levin et al teach a method wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).

12. As per claim 79, Levin et al teach a method performed with respect to a plurality of user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).

13. As per claim 80-81, Levin et al teach a method of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5)

14. As per claim 82, Levin et al teach a system for speech-based navigation (*information server, 110*) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising a portable microphone (*microphone, 105*) receiving a spoken request (*receive a natural language query*) for desired information from the user (user) a language processing logic (*natural language server, 114*) rendering an interpretation (*creating a semantic representation*) of the spoken request, (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22) a query construction logic (*service host, 112*) constructing a navigation (*generating search*) query based upon the interpretation; a query interaction logic (*service host, 112*) soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different than the original request and, (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22), a query refining logic (*service host, 112*) refining the navigation query, based upon the additional input (see column 6 lines 20-59), a navigation logic (*service host, 112*) using the navigation query to select a portion of the electronic data source; electronic infrastructure (*network, 108*) transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22).

15. As per claim 83, Levin et al teach a system of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

16. As per claim 84-86, Levin et al teach a system of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).

17. As per claim 87, 88, 100, Levin et al teach a system wherein at least a portion of the language processing is hosted on a computing device coupled with a microphone located locally with a user and a network computing device located remotely and data in a two-way communication infrastructure (coaxial, DSL, satellite, wireless/cellular, fiber-optic) (see abstract, fig. 1-3, column 3 line 36-9 line 5).

18. As per claim 89-94, Levin et al teach a system of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

19. As per claim 95, 96, Levin et al teach a system wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).

20. As per claim 97-98, Levin et al teach a system of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

21. As per claim 99, Levin et al teach a system wherein the display device receives data from the electronic device on the network via a communication box (see abstract, fig. 1-3, column 3 line 36-9 line 5).

22. As per claim 101, Levin et al teach a computer program for speech-based navigation (information server, 110) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising code segment receiving a spoken request (*receive a natural language query*) for desired information from the user (user); code segment rendering an interpretation (*creating a semantic representation*) of the spoken request, code segment constructing a navigation (*generating search*) query based upon the interpretation; soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different that the original request and, code segment refining the navigation query, based upon the additional input (see column 6 lines 20-59), code segment using the navigation query to select a portion of the electronic data source; and code segment transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22).

23. As per claim 102, Levin et al teach a code segment deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

24. As per claim 103-105, Levin et al teach a code segment of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).

25. As per claim 106-107, Levin et al teach a computer program wherein rendering of the interpretation and the construction of the navigation query are performed on a computing device located locally with or remotely from the user (see abstract, fig. 1-3, column 3 line 36-9 line 5).

26. As per claim 108-114, Levin et al teach a code segment that solicits additional input display on option menu is performed by speaking in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

27. As per claim 115, Levin et al teach a computer program the act of selecting from the display is performed by speaking (see column 6 lines 20-59)

28. As per claim 116, Levin et al teach a code segment of the computer program operate with respect to a plurality of simultaneous user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).

29. As per claim 117, Levin et al teach a code segment that select data source form a plurality of electronic data source content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

30. As per claim 118, Levin et al teach a computer program of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

31. As per claim 119, Levin et al teach a computer program wherein the additional input is solicited upon receiving a user-input statement...(see column 6 lines 20-59).

32. As per claim 120-123, Levin et al teach a code segment of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

33. As per claim 124-125, Levin et al teach a computer program wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

Application/Control Number: 09/524,095

Page 9

Art Unit: 2155

As per claim 126, Levin et al teach a code segment wherein steps (d)-(e) are repeated until the navigational query is deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

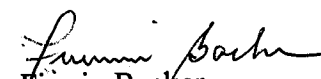
Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (6,192,338).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is 703-305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3718 for regular communications and 703-305-5352 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.


Firmin Backer
April 9, 2001

FORM PTO-892	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO. 09/524,095	GROUP ART UNIT 2781	ATTACHMENT TO PAPER NO. 10
NOTICE OF REFERENCES CITED		APPLICANT(S) HALVERSON ET AL.		

U.S. PATENT DOCUMENTS							
*	DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE	
A	6,192,338	2/2001	Zasto et al	704	257		
B	6,173,279	1/2001	Levin et al.	707	5		
C							
D							
E							
F							
G							
H							
I							
J							
K							

FOREIGN PATENT DOCUMENTS							
*	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	
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M							
N							
O							
P							
Q							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)	
R	
S	
T	
U	

EXAMINER Firmin Backer	DATE April 9, 2001	Form892ccs2106b
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* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05(a).)

2155

CARLTON FIELDS LLP

97 SOUTH SECOND STREET
SUITE 100
SAN JOSE, CALIFORNIA 95113

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P.O. BOX 721030, SAN JOSE, CA 95172-1030
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#11
L05
4-27-01

Writer's Phone Number: (408) 271-2300



April 11, 2001

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Technology Center 2100

Assistant Commissioner for Patents
Washington, DC 20231

Re:	Patent Application Serial No.:	09/524,095
	Inventor:	Christine Halverson, et al.
	Title:	Navigating Network-Based Electronic Information Using Spoken Natural Language Input with Multimodal Error Feedback
	Filed:	March 13, 2000
	Our File No.:	44454/02742/SRIIP037/(US4116-2)

Dear Sir:

Please enter the enclosed Revocation and Power of Attorney into the file of the referenced application.

Very truly yours,

Kevin J. Zilka, Reg. No. 41,429

KJZ:ELm
Enclosure
cc: Edward E. Davis, Asst. Secretary (w/ encl.)

CERTIFICATE OF MAILING

I do hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to Assistant Commissioner for Patents, Washington, DC 20231, on the date set forth below.

Erica L. Mann

Erica L. Mann

4/11/2001

Date



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SRIIP044/44454/02740 (US4015-2)

APPLICATION SERIAL NO.: 09/398,233
INVENTOR: Douglas E. Appelt, et al.
ASSIGNEE: SRI International
TITLE: Information Retrieval by Natural Language Querying
FILING DATE: September 17, 1999

Attorney Docket No.: SRIIP038/44454/02743 (US4116-4)

APPLICATION SERIAL NO.: 09/524,056
INVENTOR: Luc Julia et al.
ASSIGNEE: SRI International
TITLE: System Method and Article of Manufacture for Navigating
Network-Based Electronic Multimedia Content Using Spoken
Natural Language Input
FILING DATE: March 13, 2000

Attorney Docket No.: SRIIP037/44454/02742 (US4116-3)

APPLICATION SERIAL NO.: 09/524,095
INVENTOR: Christine Halverson
ASSIGNEE: SRI International
TITLE: Navigating Network-Based Electronic Information Using
Spoken Natural Language Input With Multimodal Error
Feedback
FILING DATE: March 13, 2000

Attorney Docket No.: SRIIP039/44454/02744 (US4116-5)

APPLICATION SERIAL NO.: 09/524,868
INVENTOR: Luc Julia, et al.
ASSIGNEE: SRI International
TITLE: Accessing Network-Based Electronic Information Through
Scripted Online Interfaces Using Spoken Natural Language
Input
FILING DATE: March 14, 2000

Attorney Docket No.: SRI1P040/44454/02745 (US4015-3)

APPLICATION SERIAL NO.: 09/613,237
INVENTOR: James Arnold, et al.
ASSIGNEE: SRI International
TITLE: System and Method for Incorporating Concept-Based Retrieval
Within Boolean Search Engines
FILING DATE: July 10, 2000

Attorney Docket No.: SRI1P041/44454/02746 (US4015-4)

APPLICATION SERIAL NO.: 09/613,236
INVENTOR: James Arnold
ASSIGNEE: SRI International
TITLE: System, Method and Article of Manufacture for Interactive
Question-Answering and Automated Information Routing
FILING DATE: July 10, 2000

Attorney Docket No.: SRI1P042/44454/02748 (US4015-5)

APPLICATION SERIAL NO.: 09/613,235
INVENTOR: James Arnold, et al.
ASSIGNEE: SRI International
TITLE: System, Method and Article of Manufacture for Concept Based
Information Searching
FILING DATE: July 10, 2000

Attorney Docket No.: SRI1P043+ (US4148-2P)

APPLICATION SERIAL NO.: 60/228,804
INVENTOR: Stephen Pullman, et al.
ASSIGNEE: SRI International
TITLE: Arbitrary Querying for Information Extraction
FILING DATE: May 5, 2000



REVOCATION AND POWER OF ATTORNEY

Assistant Commissioner for Patents
Washington, DC 20231

The undersigned assignee of the above-referenced patent applications hereby revokes all prior powers of attorney and appoints as his attorney, with full powers of substitution and revocation, to transact all business in the Patent and Trademark Office connected with these applications and any patents resulting therefrom, the following:

Kevin J. Zilka, Reg. No. 41,429
Dominic M. Kotab, Reg. No. 42,762
C. Douglas McDonald, Reg. No. 26,659
John C. Clark, Reg. No. 43,552

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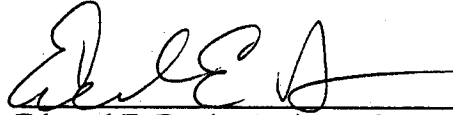
Please direct all future communications and telephone calls to:

Technology Center 2100

Kevin J. Zilka
CARLTON FIELDS, P.A.
P.O. Box 721030
San Jose, CA 95172-1030
(408)-271-2300

SRI INTERNATIONAL

Date: 09 April 2001

By: 
Edward E. Davis, Assistant Secretary

11



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRI1P037

CONFIRMATION NO. 6294



I. KEITH STEPHENS
CARLTON, FIELDS, WARD, EMMANUEL, SMITH & CUTLER
P.O. BOX 3239
TAMPA, FL 33601-3239

Date Mailed: 04/27/2001

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/16/2001.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Laurena Johnson
Customer Service Center
Initial Patent Examination Division (703) 308-1202

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UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRI1P037

CONFIRMATION NO. 6294



OC000000006017814


KEVIN J. ZILKA
CARLTON FIELDS, P.A.
P.O. BOX 721030
SAN JOSE, CA 95172-1030

Date Mailed: 04/27/2001

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/16/2001.

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


Customer Service Center
Initial Patent Examination Division (703) 308-1202

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2758 #13
2154

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:
Halverson et al.
Application No. 09/524,095
Filed: 03/13/2000
For: NAVIGATING NETWORK-BASED
ELECTRONIC INFORMAITON USING
SPOKEN NATURAL LANGUAGE INPUT
WITH MULTIMODAL ERROR FEEDBACK



Group Art Unit: 2758
Atty. Docket No. SRI1P037
44454/02742

Date: April 27, 2001
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on April 27, 2001.

Signed: Erica L. Mann
Erica L. Mann

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§ 1.56 AND 1.97(c)

Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§ 1.56 and 1.97. The Examiner is requested to make these references of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

This Information Disclosure Statement is believed to be filed before the mailing date of a first Office Action on the merits. Accordingly, it is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 03-0683 (Order No. 44454/02742/SRI1P037).



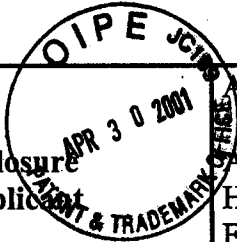
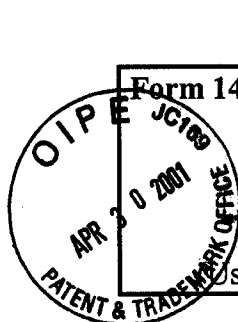
Respectfully submitted,
CARLTON FIELDS

A handwritten signature in black ink, appearing to read "Dominic M. Kotab".

Dominic M. Kotab
Reg. No. 42,762

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P.O. Box 721030
San Jose, CA 95172-1030
Telephone: (408) 271-2300



Form 1449 (Modified)	Atty. Docket No. SRI1P037	Application No.: 09/524,095
Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Applicant: Halverson et al.	Group Art Unit: 2758
	Filing Date: 03/13/2000	

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A						
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							Yes	No
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	M							
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	P							

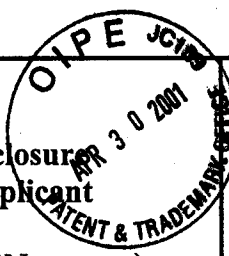
Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
F.B	R	Stent, Amanda et al., "The CommandTalk Spoken Dialogue System", SRI International
	S	Moore, Robert et al., "CommandTalk: A Spoken-Language Interface for Battlefield Simulations", October 23, 1997, SRI International
F.B	T	Dowding, John et al., "Interpreting Language in Context in CommandTalk", February 5, 1999, SRI International

Examiner <i>Franklin</i>	Date Considered <i>11/21/02</i>
--------------------------	---------------------------------

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty. Docket No. SRI1P037	Application No.: 09/524,095
	Applicant: Halverson et al.	Group Art Unit: 2758
Filing Date: 03/13/2000		



U.S. Patent Documents

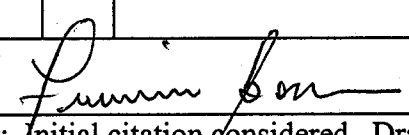
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Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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	M							
	N							
	O							
	P							

Other Documents

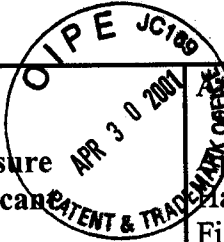
Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
F.B.	R	http://www.ai.sri.com/~oaa/infowiz.html , "InfoWiz: An Animated Voice Interactive Information System, May 8, 2000
	S	Dowding, John, "Interleaving Syntax and Semantics in an Efficient Bottom-up Parser", SRI International
P.B.	T	Moore, Robert et al., "Combining Linguistic and Statistical Knowledge Sources in Natural-Language Processing for ATIS", SRI International
Examiner		
	Date Considered	11/21/02

Examiner: initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified)

Information Disclosure
Statement By Applicant

(Use Several Sheets if Necessary)



App. Docket No.
SRI1P037
Applicant:
Halverson et al.
Filing Date:
03/13/2000

Application No.:
09/524,095

Group Art Unit:
2758

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A						
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	L							
	M							
	N							
	O							
	P							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
F.b	R	Dowding, John et al., "Gemini: A Natural Language System For Spoken-Language Understanding", SRI International
	S	
	T	
Examiner	Date Considered	
	1/27/02	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



2155 2100
#14
6-20-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.: 09/524,095
INVENTOR: Halversen, Christine
TITLE: NAVIGATING NETWORK-BASED ELECTRONIC
INFORMATION USING SPOKEN INPUT WITH
MULTIMODAL ERROR FEEDBACK

FILING DATE: 3/13/00
ATTORNEY DOCKET NO. SRIIP037

NOTICE OF CHANGE OF
CORRESPONDENCE ADDRESS

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JUN 19 2001

Technology Center 2100

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Please change the correspondence address relating to the above-identified application as

follows:

C. Douglas McDonald, Esq.
Carlton Fields, et al.
P.O. Box 3239
Tampa, FL 33601-3239

Respectfully submitted,

Date: May 10, 2001

C. Douglas McDonald
Reg. No. 26,659
CARLTON FIELDS, P.A.
P.O. Box 3239
Tampa, FL 33601-3239
(813) 223-7000
Attorney of Record

#15
LDT
9-26-01

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Jacket Number (Optional) SRI 1P037
In re Application of HALVERSON, et al		
Application Number 09/524,095	Filed March 13, 2000	
For Navigating Network-Based Electronic Information Using Spoken Input With Multimodal Error Feedback		
Group Art Unit 2155	Examiner F. Backer	



This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response in the above identified application.

The requested extension and appropriate non-small-entity fee are as follows (check time period desired):

- One month (37 CFR 1.17(a)(1)) \$
- Two months (37 CFR 1.17(a)(2)) \$390.00
- Three months (37 CFR 1.17(a)(3)) \$
- Four months (37 CFR 1.17(a)(4)) \$
- Five months (37 CFR 1.17(a)(5)) \$
- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown above is reduced by one-half, and the resulting fee is: \$ 195.00.
- A check in the amount of the fee is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Commissioner has already been authorized to charge fees in this application to a Deposit Account.
- The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 20-0782. I have enclosed a duplicate copy of this sheet.

I am the applicant/inventor.
 assignee of record of the entire interest. See 37 CFR 3.71
 Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).
 attorney or agent of record.
 attorney or agent under 37 CFR 1.34(a).
 Registration number if acting under 37 CFR 1.34(a). _____

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SEP 25 2001

Technology Center 2100

September 19, 2001
Date

Signature

KIN-WAH TONG, Reg. No. 39,400
Typed or printed name

09/25/2001 MWOLDER1 00000026 09524095
01 FC:216 195.00 0P

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.
 *Total of _____ forms are submitted.

Burden Hour Statement: This form is estimated to take 0.1 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



SRI/4116-3

#16
LDT
9-26-01

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant(s):	HALVERSON, et al	Atty. Docket No. SRI 1P037
Serial No.:	09/524,095	Group Art Unit: 2155
Filed:	March 13, 2000	Examiner: F. BACKER
Title:	NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN INPUT WITH MULTIMODAL ERROR FEEDBACK	

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SEP 25 2001

Technology Center 2100

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

**REVOCATION OF PREVIOUS POWER
OF ATTORNEY AND NEW APPOINTMENT**

The undersigned assignee of the above-identified application hereby revokes all previous Powers of Attorney and appoints the following attorneys with full power to prosecute the application, to make alterations and amendments therein, and to transact all business in the United States Patent and Trademark Office connected therewith and with full power of substitution and revocation:

Raymond R. Moser, Jr.; Reg. No. 34,682; Kin-Wah Tong, Reg. No. 39,400;
Robert Brush, Reg. No. 45,710; Steven Weiner, Reg. No. 38,360; and Edward E.
Davis, Reg. No. 35,112.

CHANGE OF CORRESPONDENCE ADDRESS

Please change the correspondence address for the above-identified application to:

Thomason, Moser & Patterson, LLP
595 Shrewsbury Avenue – Suite 100
Shrewsbury, New Jersey 07702

Please direct all telephone calls to: Kin-Wah Tong, telephone # (732) 530-9404



SRI/4116-3

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SEP 25 2001

Technology Center 2100

CERTIFICATE UNDER 37 C.F.R. § 3.73(B)

SRI International, a corporation of the State of California, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of:

An Assignment from the inventor(s) of the patent application identified above. The Assignment was recorded in the United States Patent and Trademark Office, for which a copy thereof is attached.

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

Respectfully submitted,

Date: 9/11/01

~~EDWARD E. DAVIS, Assistant Secretary~~
STEVEN LOEWNER, VICE PRESIDENT

SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025
Telephone No.: 650-859-3115

ASSIGNMENT OF PATENT APPLICATION
(Not Accompanying Application)

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:


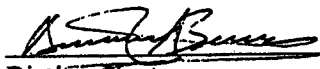

**NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK**

for which I/we have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on March 13, 2000, and which bears the Application No. 09/524,095.

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we the undersigned inventor(s) hereby:

- 1) Sell(s), assign(s) and transfer(s) to SRI International, a California non-profit corporation having a place of business at 333 Ravenswood Avenue, Menlo Park, California 94025, (hereinafter referred to as "ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application.
- 2) Authorize and request the Commissioner of Patents to issue any and all Letters Patents resulting from said application or any division(s), continuation(s), substitutes(s) or reissue(s) thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative and applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon the inventor(s), as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I/we have not entered, and will not enter into any assignment, contract, or understanding that conflicts with this assignment.

Signed on the date(s) indicated beside my (our) signature(s).

- | | | |
|----|--|----------------------|
| 1) | Signature: <u></u>
Typed Name: Christine Halverson | Date: <u>6-16-00</u> |
| 2) | Signature: _____
Typed Name: Luc Julia | Date: _____ |
| 3) | Signature: <u></u>
Typed Name: Dimitris Voutsas | Date: <u>6/16/00</u> |
| 4) | Signature: <u></u>
Typed Name: Adam Cheyer | Date: <u>6/22/00</u> |

ASSIGNMENT OF PATENT APPLICATION
(Not Accompanying Application)

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:


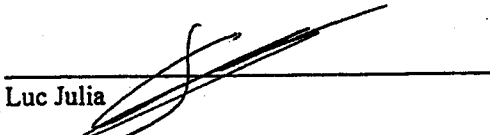

**NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK**

for which I/we have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on March 13, 2000, and which bears the Application No. 09/524,095.

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we the undersigned inventor(s) hereby:

- 1) Sell(s), assign(s) and transfer(s) to **SRI International**, a California non-profit corporation having a place of business at 333 Ravenswood Avenue, Menlo Park, California 94025, (hereinafter referred to as "ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application.
- 2) Authorize and request the Commissioner of Patents to issue any and all Letters Patents resulting from said application or any division(s), continuation(s), substitutes(s) or reissue(s) thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative and applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon the inventor(s), as well as the inventor's heirs, legal representatives and assigns.
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Signed on the date(s) indicated beside my (our) signature(s).

- | | | |
|----|---|----------------------|
| 1) | Signature: <u></u> | Date: <u>6-16-00</u> |
| | Typed Name: Christine Halverson | |
| 2) | Signature: <u></u> | Date: <u>6-20-00</u> |
| | Typed Name: Luc Julia | |
| 3) | Signature: <u></u> | Date: <u>6/16/00</u> |
| | Typed Name: Dimitris Voutsas | |
| 4) | Signature: _____ | Date: _____ |
| | Typed Name: Adam Cheyer | |

ASSIGNMENT OF PATENT APPLICATION
(Not Accompanying Application)

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:

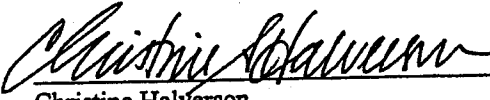

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- 1) Signature:  Date: 6-16-00
Typed Name: Christine Halverson
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Typed Name: Luc Julia
- 3) Signature:  Date: 6/16/00
Typed Name: Dimitris Voutsas
- 4) Signature: _____ Date: _____
Typed Name: Adam Cheyer

16



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRI1P037

CONFIRMATION NO. 6294



OC00000006797094

C. Douglas McDonald, ESQ.
CARLTON FIELDS, et al.
P.O. Box 3239
Tampa, FL 33601-3239

Date Mailed: 09/26/2001

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/21/2001.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

LAVINIA D JOHNSON
2100 7033085229

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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/524,095	03/13/2000	Christine Halverson	SRIIP037

CONFIRMATION NO. 6294

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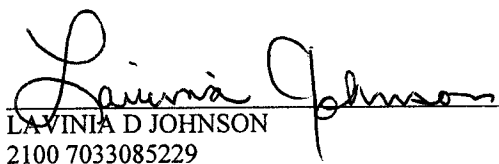
THOMASON, MOSER & PATTERSON, LLP
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

Date Mailed: 09/26/2001

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/21/2001.

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


 LAVINIA D JOHNSON
 2100 7033085229

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09/524,095



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE
PATENT APPLICATION

#18
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Applicant: Halverson et al.

Case: SRI1P037

Serial No.: 09/524,095

Filed: March 13, 2000

Group Art Unit: 2155

Examiner: Firmin Backer

Title: **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION
USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL
ERROR FEEDBACK**

ASSISTANT COMMISSIONER FOR PATENTS
Box Non-Fee Amendment
Washington, D. C. 20231

S I R:

RESPONSE UNDER 37 C.F.R. § 1.111

This response addresses the Office Action dated April 24, 2001 (Paper No. 10).

REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102. Thus, the Applicants believe that all of these claims are now in allowable form.

I. REJECTION OF CLAIMS 56-126 UNDER 35 U.S.C. § 102

The Examiner has rejected claims 56-126 in Paragraphs 2-33 of the Office Action as being anticipated by the Levin et al. patent (US Patent 6,173,279 issued January 9, 2001, hereinafter referred to as Levin). The rejection is respectfully traversed.

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Levin teaches "a method of using at least one natural language query to retrieve information from one or more data resources and further performing a requested action using the retrieved information is disclosed". (See Levin, Column 2, lines 15-18) Namely, Levin teaches a method for using natural language query to obtain information, where upon receipt of the requested information, a desired action is executed based upon the requested information. To illustrate, Levin provides the example, where a user employs natural language to request the telephone number of a restaurant. Upon receipt of the telephone number, the telephone number is actually dialed for the user. (See Levin, Column 3 line 62 to Column 4, line 1)

In contrast, Levin fails to teach or suggest the novel concept of speech-based navigation where the method solicits additional input from the user, including user interaction in a modality different than the original request. Specifically, Applicants' independent claims 56, 82 and 101 positively recite:

56. A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a modality different than the original request;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user. (emphasis added)

82. A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken request for desired information from the user;
- (b) language processing logic, operable to render an interpretation of the spoken request;
- (c) query construction logic, operable to construct a navigation query

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in response to the interpretation of the spoken request;

(d) user interaction logic, operable to solicit additional input from the user, including user interaction in a modality different than the original request;

(e) query refining logic, operable to refine the navigation query, based upon the additional input;

(f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and

(g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

101. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

(a) a code segment that receives a spoken request for desired information from the user;

(b) a code segment that renders an interpretation of the spoken request;

(c) a code segment that constructs at least part of a navigation query based upon the interpretation;

(d) a code segment that solicits additional input from the user, including user interaction in a modality different than the original request;

(e) a code segment that refines the navigation query, based upon the additional input;

(f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and

(g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

Applicants' invention teaches a novel method and apparatus for speech-based navigation where the method solicits additional input from the user, including user interaction in a modality different than the original request.

Specifically, Applicants address the criticality of errors and deficiencies via user interface modalities in addition to spoken natural language. It has been observed that users are often frustrated by ineffective or non optimal speech-based navigation that simply engages the user repeatedly in a long series of questions and answers, i.e., "single modal interaction", to perfect the navigation query. This single modal approach is often tedious and uninspiring for a user who must refine the navigation query repeatedly to achieve the desired result, thereby

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increasing the time the user must interact with a system. In fact, one goal of the speech-based navigation is to relieve this very tedium where the user must engage a system repeatedly, e.g., via a long sequence of menus to achieve the desired result.

To address this criticality, Applicants' navigation query can be refined via input from the user, where the user interaction is in a modality different than the original request. To illustrate, if a portion of the navigation query can be achieved, then the result can be presented to the user in a way that the user can provide additional input via interaction that is in a modality that is different than the original request. For example, if the "partial" navigation query produces three possible results, then the results can be presented to the user via a menu with the most likely result being highlighted. The user can then press a button on a remote unit to accept the highlighted result or simply scroll to one of the other three choices. Thus, the pressing of the button by the user is a user interaction that is in a different modality than the original request, e.g., a natural language request that originally started the navigation request. This is an important aspect of the invention because of the psychological and real effect where the user perceives that the navigation query is actually progressing closer to the achieved result.

In contrast, Levin teaches that "the service host 112 determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards **additional queries** to the user to help to resolve the ambiguities (step 224)". (emphasis added) (See Levin, Column 6, lines 40-43). Additionally, Levin states that "[t]he service host 112 includes a dialog control program that manages interactions with users **over several turns (e.g., it decides when to ask a question, when to give an answer**, provides means for clarifying ambiguities, and provides error control and recovery during an interaction)". (emphasis added) (See Levin, Column 5, lines 15-20). Levin's single modal approach is contrary to Applicants' invention and is one of the criticalities that Applicants' invention is designed to address. To further support Applicants' position, Levin states that "[t]he invention is independent of the actual modality of call placement". (See Levin,

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Column 4, lines 29-31) This statement is another clear indication that Levin is totally unconcerned with the modality of the user interaction and is simply teaching a single modal approach via queries and answers.

Therefore, the Applicants respectfully submit that independent claims 56, 82 and 101 are not anticipated by the Levin reference. As such, claims 56, 82 and 101 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

Claims 57-81, 83-100 and 102-126 depend, either directly or indirectly, from claims 56, 82 and 101 and recite additional features therefor. Since Levin fails to anticipate Applicants' invention as recited in Applicants' independent claims 56, 82 and 101, dependent claims 57-81, 83-100 and 102-126 are also not anticipated under 35 U.S.C. § 102 and are allowable for the same reason noted above.

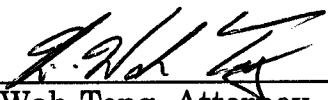
Conclusion

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. §102. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

9/19/01


Kin-Wah Tong, Attorney
Reg. No. 39,400
(732) 530-9404

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
First Floor,
Shrewsbury, New Jersey 07702

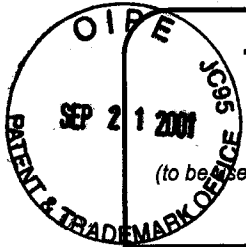
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PTO/SB/21 (08-00)

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	Filing Date	March 13, 2000
	First Named Inventor	HALVERSON
	Group Art Unit	2155
	Examiner Name	F. BACKER
Total Number of Pages in This Submission	Attorney Docket Number	SRI 1 P 037

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

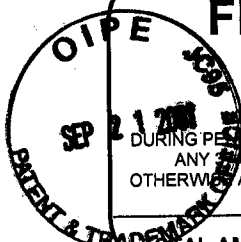
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	KIN-WAH TONG
Signature	
Date	September 19, 2001

CERTIFICATE OF MAILING			
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Complete if Known

Application Number	09/524,095
Filing Date	March 13, 2000
First Named Inventor	HALVERSON
Examiner Name	F. BACKER
Group / Art Unit	2155
Attorney Docket No.	SRI 1P037

TOTAL AMOUNT OF PAYMENT (\$) 195.00

METHOD OF PAYMENT (check one)		FEE CALCULATION (continued)																																																																																																																																																																															
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ADDITIONAL FEES <table border="1"> <thead> <tr> <th>Fee Code</th> <th>Large Entity Fee (\$)</th> <th>Small Entity Fee Code</th> <th>Small Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet.</td><td></td></tr> <tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for reexamination</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>116</td><td>390</td><td>216</td><td>195</td><td>Extension for reply within second month</td><td>195.00</td></tr> <tr><td>117</td><td>890</td><td>217</td><td>445</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>118</td><td>1,390</td><td>218</td><td>695</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>128</td><td>1,890</td><td>228</td><td>945</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>119</td><td>310</td><td>219</td><td>155</td><td>Notice of Appeal</td><td></td></tr> <tr><td>120</td><td>310</td><td>220</td><td>155</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>121</td><td>270</td><td>221</td><td>135</td><td>Request for oral hearing</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive - unavoidable</td><td></td></tr> <tr><td>141</td><td>1,240</td><td>241</td><td>620</td><td>Petition to revive - unintentional</td><td></td></tr> <tr><td>142</td><td>1,240</td><td>242</td><td>620</td><td>Utility issue fee (or reissue)</td><td></td></tr> <tr><td>143</td><td>440</td><td>243</td><td>220</td><td>Design issue fee</td><td></td></tr> <tr><td>144</td><td>600</td><td>244</td><td>300</td><td>Plant issue fee</td><td></td></tr> <tr><td>122</td><td>130</td><td>122</td><td>130</td><td>Petitions to the Commissioner</td><td></td></tr> <tr><td>123</td><td>130</td><td>123</td><td>130</td><td>Petitions related to provisional applications</td><td></td></tr> <tr><td>126</td><td>180</td><td>126</td><td>180</td><td>Submission of Information Disclosure Stmt</td><td></td></tr> <tr><td>581</td><td>40</td><td>581</td><td>40</td><td>Recording each patent assignment per property (times number of properties)</td><td></td></tr> <tr><td>146</td><td>710</td><td>246</td><td>355</td><td>Filing a submission after final rejection (37 CFR § 1.129(a))</td><td></td></tr> <tr><td>149</td><td>710</td><td>249</td><td>355</td><td>For each additional invention to be examined (37 CFR § 1.129(b))</td><td></td></tr> <tr><td>179</td><td>710</td><td>279</td><td>355</td><td>Request for Continued Examination (RCE)</td><td></td></tr> <tr><td>169</td><td>900</td><td>169</td><td>900</td><td>Request for expedited examination of a design application</td><td></td></tr> </tbody> </table>		Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid	105	130	205	65	Surcharge - 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SUBMITTED BY		Complete (if applicable)			
Name (Print/Type)	KIN-WAH TONG	Registration No. Attorney/Agent	39,400	Telephone	(732) 530-9404
Signature	<i>[Signature]</i>	Date	SEPTEMBER 19, 2001		

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MOSER PATTERSON SHERIDAN

002

SRJ/4116-3

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

#19
LDT
10-9-01

PATENT APPLICATION

Applicant(s): **HALVERSON, et al**

Atty. Docket No. **SRI 1P037**

Serial No.: **09/524,095**

Group Art Unit: **2155**

Filed: **March 13, 2000**

Examiner: **F. BACKER**

Title: **NAVIGATING NETWORK-BASED ELECTRONIC
INFORMATION USING SPOKEN INPUT WITH
MULTIMODAL ERROR FEEDBACK**

REQUEST FOR CORRECTED FILING RECEIPT

Assistant Commissioner for Patents
Office of Initial Patent Examination
Customer Service Center
Washington, D. C. 20231

RECEIVED

OCT 05 2001

Technology Center 2100

SIR:

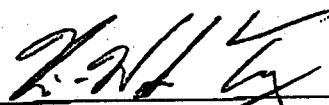
Please issue a corrected filing receipt reflecting the correct spelling of the first name of
the fourth inventor as follows:

Adam J. Cheyer

Respectfully submitted

Date

9/28/01



KIN-WAH TONG, Attorney
Reg. No. 39,400

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue - Suite 100
Shrewsbury, New Jersey 07702
(732)530-9404

SRI/4116-3

CERTIFICATE OF FACSIMILE TRANSMISSION

Under 37 C.F.R. § 1.8(a)

I certify that this correspondence is being transmitted by facsimile (703-308-7751) under 37 C.F.R. 1.8(a) on September 28, 2001 and is addressed to the Assistant Commissioner for Patents, Office of Initial Patent Examination, Customer Service Center, Washington, D.C. 20231.

Linda DeNardi

Type or print name of person signing certification

Linda DeNardi

Signature



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
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WASHINGTON, D.C. 20231
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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/524,095	03/13/2000	2758	1529	SRI1P037	7	55	3

FILING RECEIPT



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Hickman Stephens Coleman & Hughes LLP
PO Box 52037
Palo Alto, CA 94303-0746

Date Mailed: 09/11/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. 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 write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Christine Halverson, San Jose, CA ;
Luc Julia, Menlo Park, CA ;
Dimitris Voutsas, Thessaloniki, GREECE ;
Aden J. Cheyer, Palo Alto, CA ;
ADAM

Continuing Data as Claimed by Applicant

THIS APPLICATION IS A CIP OF 09/225,198 01/05/1999
WHICH CLAIMS BENEFIT OF 60/124,718 03/17/1999
WHICH CLAIMS BENEFIT OF 60/124,719 03/17/1999
WHICH CLAIMS BENEFIT OF 60/124,720 03/17/1999

Foreign Applications

If Required, Foreign Filing License Granted 05/12/2000

** SMALL ENTITY **

Title

Navigating network-based electronic information using spoken natural language input with multimodal error feedback

Preliminary Class

709

REC'D SEP 18 2000

6



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

6

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/524,095	03/13/00	HALVERSON	
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C SRI1P037

EXAMINER

TM02/1010

THOMASON, MOSER & PATTERSON, LLP
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY NJ 07702

BACKER, F

ART UNIT

PAPER NUMBER

2155
DATE MAILED:

10/10/01

20

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

Commissioner of Patents and Trademarks

SM

Office Action Summary

Application No.	Applicant(s)	
09/524,095	HALVERSON ET AL.	
Examiner	Art Unit	
Firmin Backer	2155	

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 September 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 56-126 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 56-126 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
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.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
- 18) Interview Summary (PTO-413) Paper No(s). _____ .
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other: _____ .

Response to Request for Reconsideration

This is in response to a request for reconsideration file on September 26th, 2001. Claims 56-126 are being reconsidered in this action.

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(e) of this title before the invention thereof by the applicant for patent.

2. Claims 56-126 are rejected under 35 U.S.C. 102(e) as being anticipated by Levin et al. (U.S. Patent No. 6,173,279).

3. As per claim 56, Levin et al teach a method for speech-based navigation (information server, 110) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising receiving a spoken request (*receive a natural language query*) for desired information from the user (user); rendering an interpretation (*creating a semantic representation*) of the spoken request, constructing a navigation (*generating search*) query based upon the interpretation; soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different than the original request and, refining the navigation query, based upon the additional input (see column 6 lines 20-59), using the navigation query to select a portion of the electronic

data source; and transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22)

4. As per claim 57, Levin et al teach a method of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

5. As per claim 58-62, Levin et al teach a method of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5)

6. As per claim 63-68, Levin et al teach a method of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

7. As per claim 69, Levin et al teach a method wherein the additional input is solicited upon receiving a user-input statement...(see column 6 lines 20-59).

8. As per claim 70-73, Levin et al teach a method of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).
9. As per claim 74-75, Levin et al teach a method wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).
10. As per claim 76, Levin et al teach a method wherein steps (d)-(e) are repeated until the navigational query if deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).
11. As per claim 77, 78, Levin et al teach a method wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).
12. As per claim 79, Levin et al teach a method performed with respect to a plurality of user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).
13. As per claim 80-81, Levin et al teach a method of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5)

14. As per claim 82, Levin et al teach a system for speech-based navigation (*information server, 110*) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising a portable microphone (*microphone, 105*) receiving a spoken request (*receive a natural language query*) for desired information from the user (user) a language processing logic (*natural language server, 114*) rendering an interpretation (*creating a semantic representation*) of the spoken request, (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22) a query construction logic (*service host, 112*) constructing a navigation (*generating search*) query based upon the interpretation; a query interaction logic (*service host, 112*) soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different than the original request and, (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22), a query refining logic (*service host, 112*) refining the navigation query, based upon the additional input (see column 6 lines 20-59), a navigation logic (*service host, 112*) using the navigation query to select a portion of the electronic data source; electronic infrastructure (*network, 108*) transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22).

15. As per claim 83, Levin et al teach a system of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

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16. As per claim 84-86, Levin et al teach a system of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).

17. As per claim 87, 88, 100, Levin et al teach a system wherein at least a portion of the language processing is hosted on a computing device coupled with a microphone located locally with a user and a network computing device located remotely and data in a two-way communication infrastructure (coaxial, DSL, satellite, wireless/cellular, fiber-optic) (see abstract, fig. 1-3, column 3 line 36-9 line 5).

18. As per claim 89-94, Levin et al teach a system of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

19. As per claim 95, 96, Levin et al teach a system wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).

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20. As per claim 97-98, Levin et al teach a system of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

21. As per claim 99, Levin et al teach a system wherein the display device receives data from the electronic device on the network via a communication box (see abstract, fig. 1-3, column 3 line 36-9 line 5).

22. As per claim 101, Levin et al teach a computer program for speech-based navigation (information server, 110) of an electronic data source located at one or more network servers located remotely from a user, (see abstract, fig 1, column 3 lines 5-35), comprising code segment receiving a spoken request (*receive a natural language query*) for desired information from the user (user); code segment rendering an interpretation (*creating a semantic representation*) of the spoken request, code segment constructing a navigation (*generating search*) query based upon the interpretation; soliciting additional input from the user (*one or more questions are generated...*), including user interaction in a modality different that the original request and, code segment refining the navigation query, based upon the additional input (see column 6 lines 20-59); code segment using the navigation query to select a portion of the electronic data source; and code segment transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user (see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22).

23. As per claim 102, Levin et al teach a code segment deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).
24. As per claim 103-105, Levin et al teach a code segment of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).
25. As per claim 106-107, Levin et al teach a computer program wherein rendering of the interpretation and the construction of the navigation query are performed on a computing device located locally with or remotely from the user (see abstract, fig. 1-3, column 3 line 36-9 line 5).
26. As per claim 108-114, Levin et al teach a code segment that solicits additional input display on option menu is performed by speaking in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).
27. As per claim 115, Levin et al teach a computer program the act of selecting from the display is performed by speaking (see column 6 lines 20-59)

28. As per claim 116, Levin et al teach a code segment of the computer program operate with respect to a plurality of simultaneous user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).

29. As per claim 117, Levin et al teach a code segment that select data source form a plurality of electronic data source content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

30. As per claim 118, Levin et al teach a computer program of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

31. As per claim 119, Levin et al teach a computer program wherein the additional input is solicited upon receiving a user-input statement...(see column 6 lines 20-59).

32. As per claim 120-123, Levin et al teach a code segment of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

33. As per claim 124-125, Levin et al teach a computer program wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

34. As per claim 126, Levin et al teach a code segment wherein steps (d)-(e) are repeated until the navigational query is deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

Response to Arguments

Applicant's arguments filed on September 26th, 2001 have been fully considered but they are not persuasive.

Applicant argues that the prior art (Levin et al) fail to teach or suggest an inventive concept wherein "soliciting additional input from the user including user interaction in a modality different than the original request." Examiner respectfully disagrees with the applicant's perspective and characterization of Levin's inventive concept. Levin et al teach a system and method of using natural language to retrieve information. In that particular if the service host 112, based on the rules, decides that there is enough information for performing a database access, the database query is generated. The database query is generally in one of the standard query languages (e.g. SQL). The service host 112 also determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards additional queries to the user to help to resolve the ambiguities (step 224). The service host 112 then sends the responses to the information server 110 (step 226). If there are too many potential answers (for instance if there are two pizza places on Main Street in Westfield), one or more questions to the user are generated in order to disambiguate the query (e.g. Do you mean "Venezia" or "Bella Roma?").

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The answers to the additional questions are used to formulate a new logical search query. For this there might be additional rules like: if(Action_Object=Pizza_Restaurant and Too-Many_Answers) then User must provide further clarifying information such as, for example, the name of restaurant OR exact address. If the user does not provide enough information to achieve a single answer, the service host 112 might then list the possibilities and ask the user to choose one of them (*see column 6 lines 28-59*). This is a way to require additional information from the user in order to generate user's request.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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

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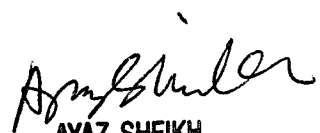
Art Unit: 2155

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is 703-305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3718 for regular communications and 703-305-5352 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.


Firmin Backer
October 2, 2001


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRIIP037	6294

25696 7590 01/15/2002

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PALO ALTO, CA 94303

EXAMINER

BACKER, FIRMIN

ART UNIT	PAPER NUMBER
2155	21

DATE MAILED: 01/15/2002

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

Interview Summary	Application No.	Applicant(s)	
	09/524,095	HALVERSON ET AL.	
	Examiner	Art Unit	
	Firmin Backer	2155	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Firmin Backer (examiner). (3) Kin-Wah Tong (Attorney).
 (2) Ario Etienne (primary examiner). (4) _____.

Date of Interview: 08 January 2002.

Type: a) Telephonic b) Video Conference
 c) Personal [copy given to: 1) applicant 2) applicant's representative]

Exhibit shown or demonstration conducted: d) Yes e) No.
 If Yes, brief description: _____.

Claim(s) discussed: 56.

Identification of prior art discussed: 6,173,279.

Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.

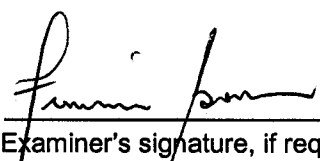
Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant argues that the statutory double patenting rejection is improper and should be withdrawn. Applicant argues that the prior art fails to teach all the limitations of the inventive concept especially the concept of transmitting the selected portion of the electronic data source from the network server to a client device of the user.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i) It is not necessary for applicant to provide a separate record of the substance of the interview (if box is checked).

Unless the paragraph above has been checked, 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 ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.



 Examiner's signature, if required

22
BT 1/17/02
Not Entered

09/524,095

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

PATENT APPLICATION

Applicant: Halverson et al.

Case: SRI1P037

Serial No.: 09/524,095

Filed: March 13, 2000

Group Art Unit: 2155

Examiner: Firmin Backer

Title: **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
FEEDBACK**

ASSISTANT COMMISSIONER FOR PATENTS
Box AF
Washington, D. C. 20231

S I R:

RESPONSE UNDER 37 C.F.R. § 1.116

This response addresses the Final Office Action dated October 10, 2001. The Final Office Action appears to be labeled as Paper No. 20.

REMARKS

Applicants' representative would like to thank Examiner Backer and Primary Examiner Etienne for kindly taking a substantial amount of time on January 8, 2002 to discuss the merits of the subject invention. Applicants' representative is aware of the time constraint that is placed on the Examiners and is appreciative of the Examiners' willingness to devote such large quantity of time to discuss the case on the merit.

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102. Thus, the Applicants believe that all of these claims are now in allowable form.

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I. REJECTION OF CLAIMS 56-126 UNDER 35 U.S.C. § 102

The Examiner has rejected claims 56-126 in Paragraphs 2-34 of the Final Office Action as being anticipated by the Levin et al. patent (US Patent 6,173,279 issued January 9, 2001, hereinafter referred to as Levin). The rejection is respectfully traversed.

Levin teaches "a method of using at least one natural language query to retrieve information from one or more data resources and further performing a requested action using the retrieved information is disclosed". (See Levin, Column 2, lines 15-18) Namely, Levin teaches a method for using natural language query to obtain information, where upon receipt of the requested information, a desired action is executed based upon the requested information. To illustrate, Levin provides the example, where a user employs natural language to request the telephone number of a restaurant. Upon receipt of the telephone number, the telephone number is actually dialed for the user. (See Levin, Column 3 line 62 to Column 4, line 1)

In contrast, Levin fails to teach or suggest the novel concept of speech-based navigation where the method solicits additional input from the user, including user interaction in a modality different than the original request. Specifically, Applicants' independent claims 56, 82 and 101 positively recite:

56. A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:
- (a) receiving a spoken request for desired information from the user;
 - (b) rendering an interpretation of the spoken request;
 - (c) constructing at least part of a navigation query based upon the interpretation;
 - (d) soliciting additional input from the user, including user interaction in a modality different than the original request;
 - (e) refining the navigation query, based upon the additional input;
 - (f) using the refined navigation query to select a portion of the electronic data source; and
 - (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user. (emphasis added)

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82. A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken request for desired information from the user;
- (b) language processing logic, operable to render an interpretation of the spoken request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a modality different than the original request;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;
- (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
- (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

101. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a modality different than the original request;
- (e) a code segment that refines the navigation query, based upon the additional input;
- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

Pursuant to the Examiner Interview, Applicants directed the Examiner's attention to the fact that Applicants' invention teaches a novel method and apparatus for speech-based navigation where the method solicits additional input from the user, including user interaction in a modality different than the original request. Specifically, Applicants address the criticality of errors and deficiencies via user interface modalities

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in addition to spoken natural language. It has been observed that users are often frustrated by ineffective or non optimal speech-based navigation that simply engages the user repeatedly in a long series of questions and answers, i.e., "single modal interaction", to perfect the navigation query. This single modal approach is often tedious and uninspiring for a user who must refine the navigation query repeatedly to achieve the desired result, thereby increasing the time the user must interact with a system. In fact, one goal of the speech-based navigation is to relieve this very tedium where the user must engage a system repeatedly, e.g., via a long sequence of menus to achieve the desired result.

To address this criticality, Applicants' navigation query can be refined via input from the user, where the user interaction is in a modality different than the original request. To illustrate, if a portion of the navigation query can be achieved, then the result can be presented to the user in a way that the user can provide additional input via interaction that is in a modality that is different than the original request. For example, if the "partial" navigation query produces three possible results, then the results can be presented to the user via a menu with the most likely result being highlighted. The user can then press a button on a remote unit to accept the highlighted result or simply scroll to one of the other three choices. Thus, the pressing of the button by the user is a user interaction that is in a different modality than the original request, e.g., a natural language request that originally started the navigation request. This is an important aspect of the invention because of the psychological and real effect where the user perceives that the navigation query is actually progressing closer to the achieved result.

In contrast, Levin teaches that "the service host 112 determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards additional queries to the user to help to resolve the ambiguities (step 224)". (emphasis added) (See Levin, Column 6, lines 40-43). Additionally, Levin states that "[t]he service host 112 includes a dialog control program that manages interactions with users over several turns (e.g., it decides when to ask a question, when to give an answer, provides means for clarifying ambiguities, and provides error control and recovery

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during an interaction)". (emphasis added) (See Levin, Column 5, lines 15-20). Levin's single modal approach is contrary to Applicants' invention and is one of the criticalities that Applicants' invention is designed to address. To further support Applicants' position, Levin states that "[t]he invention is independent of the actual modality of call placement". (See Levin, Column 4, lines 29-31) This statement is another clear indication that Levin is totally unconcerned with the modality of the user interaction and is simply teaching a single modal approach via queries and answers.

As discussed during the Examiner Interview, the support cited by the Examiner in the Final Office Action only discloses the teaching that the user is requested to provide additional information, but it does not require the user to provide the additional inputs in a different modality than the original request as claimed by the Applicants. The Examiners indicated that they would reconsider the present rejections.

Therefore, the Applicants respectfully submit that independent claims 56, 82 and 101 are not anticipated by the Levin reference. As such, claims 56, 82 and 101 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

Claims 57-81, 83-100 and 102-126 depend, either directly or indirectly, from claims 56, 82 and 101 and recite additional features therefor. Since Levin fails to anticipate Applicants' invention as recited in Applicants' independent claims 56, 82 and 101, dependent claims 57-81, 83-100 and 102-126 are also not anticipated under 35 U.S.C. § 102 and are allowable for the same reason noted above.

Conclusion

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. §102. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

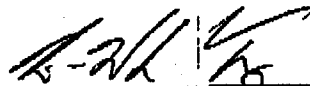
If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the present final office action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at

09/524,095

(732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

1/10/02



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TO: Assistant Commissioner of Patents
 FAX NO.: 703-746-7238
 FROM: Kin-Wah Tong
 DATE: January 10, 2002
 MATTER: Serial No. 09/524,095 Filed: March 13, 2000
 DOCKET NO.: SRI 1P037
 APPLICANT: HALVERSON, et al

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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/524,095	
	Filing Date	March 13, 2000	
	First Named Inventor	HALVERSON	
	Group Art Unit	2155	
	Examiner Name	F. BACKER	
Total Number of Pages In This Submission	9	Attorney Docket Number	SRI 1 P 037

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
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Date	January 10, 2002

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	Filing Date	March 13, 2000	
	First Named Inventor	HALVERSON	
	Group Art Unit	2155	
	Examiner Name	F. BACKER	
Total Number of Pages in This Submission	9	Attorney Docket Number	SRI 1 P 037

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks		It is believed no fee is due. However, in the event a fee is due, kindly charge that fee to deposit account number 20-0782. To facilitate that charge, a duplicate copy of this letter is enclosed

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	PATRICIA A. VERLANGIERI, Reg. No. 42,201
Signature	<i>Patricia A. Verlangieri</i>
Date	January 10, 2002

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



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United States Patent and Trademark Office
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Washington, D.C. 20231
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SR11P037	6294

25696 7590 02/19/2002

OPPENHEIMER WOLFF & DONNELLY
P. O. BOX 10356
PALO ALTO, CA 94303

EXAMINER

BACKER, FIRMIN

ART UNIT	PAPER NUMBER
2155	23

DATE MAILED: 02/19/2002

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

Advisory Action	Application No. 09/524,095	Applicant(s) HALVERSON ET AL.	
	Examiner Firmin Backer	Art Unit 2155	

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

THE REPLY FILED 07 January 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) The period for reply expires 3 months from the mailing date of the final rejection.
- b) The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. The proposed amendment(s) will not be entered because:
- (a) they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) they raise the issue of new matter (see Note below);
 - (c) they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. Applicant's reply has overcome the following rejection(s): _____
4. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. The a) affidavit, b) exhibit, or c) request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. For purposes of Appeal, the proposed amendment(s) a) will not be entered or b) will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____


Claim(s) objected to: _____

Claim(s) rejected: 56-126

Claim(s) withdrawn from consideration: _____

8. The proposed drawing correction filed on _____ is a) approved or b) disapproved by the Examiner.
9. Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. Other: _____

Continuation of 5. does NOT place the application in condition for allowance because: Applicant request for reconsideration has been considered but does not place the application in condition for allowance. Applicant argues that Levin fail to teach the limitation of soliciting additional input from the user, including user interaction in a modality different than the original request. Examiner respectfully disagree with applicant characterization of Levin et al' inventive concept. As examiner has indicated before, Levin et al teach a system and method of using natural language to retrieve information. In that particular if the service host 112, based on the rules, decides that there is enough information for performing a database access, the database query is generated. The database query is generally in one of the standard query languages (e.g. SQL). The service host 112 also determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards additional queries to the user to help to resolve the ambiguities (step 224). The service host 112 then sends the responses to the information server 110 (step 226). If there are too many potential answers (for instance if there are two pizza places on Main Street in Westfield), one or more questions to the user are generated in order to disambiguate the query (e.g. Do you mean "Venezia" or "Bella Roma?"). The answers to the additional questions are used to formulate a new logical search query. For this there might be additional rules like: if(Action_Object=Pizza_Restaurant and Too-Many_Answers) then User must provide further clarifying information such as, for example, the name of restaurant OR exact address. If the user does not provide enough information to achieve a single answer, the service host 112 might then list the possibilities and ask the user to choose one of them (see column 6 lines 28-59). Levin clearly indicate that in the user does not provide enough information to achieve a single answer then the service host might list the possibilities and ask the user to choose one of them. To the examiner that is a different modality than the original mode. It can be seen that in the original mode, the user was requesting the service. In this mode, the host provides a list of service for the user to choose from. In the original mode, the user did not have any choices, however, in this mode the user has a list to choose from. Therefore, the final action is sustained.


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRIIP037	6294

7590 04/03/2002

THOMASON, MOSER & PATTERSON, LLP
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

EXAMINER

BACKER, FIRMIN

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 04/03/2002

#24

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

**SUPPLEMENTAL
Advisory Action**

Application No.

09/524,095

Applicant(s)

HALVERSON ET AL.

Examiner

Firmin Backer

Art Unit

2155

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

THE REPLY FILED 07 January 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) The period for reply expires 3 months from the mailing date of the final rejection.
 b) The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
 ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
 2. The proposed amendment(s) will not be entered because:
 (a) they raise new issues that would require further consideration and/or search (see NOTE below);
 (b) they raise the issue of new matter (see Note below);
 (c) they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 (d) they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. Applicant's reply has overcome the following rejection(s): _____
 4. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
 5. The a) affidavit, b) exhibit, or c) request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
 6. The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
 7. For purposes of Appeal, the proposed amendment(s) a) will not be entered or b) will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 56-126.

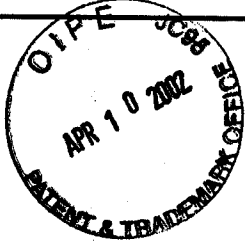
Claim(s) withdrawn from consideration: _____

8. The proposed drawing correction filed on _____ is a) approved or b) disapproved by the Examiner.
 9. Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
 10. Other: _____

JAMES P. FRAMMELL
 SUPERVISORY PATENT EXAMINER
 TECHNOLOGY CENTER 2100

Continuation of 5. does NOT place the application in condition for allowance because: Applicant request for reconsideration has been considered but does not place the application in condition for allowance. Applicant argues that Levin fail to teach the limitation of soliciting additional input from the user, including user interaction in a modality different than the original request. Examiner respectfully disagree with applicant characterization of Levin et al' inventive concept. As examiner has indicated before, Levin et al teach a system and method of using natural language to retrieve information. In that particular if the service host 112, based on the rules, decides that there is enough information for performing a database access, the database query is generated. The database query is generally in one of the standard query languages (e.g. SQL). The service host 112 also determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards additional queries to the user to help to resolve the ambiguities (step 224). The service host 112 then sends the responses to the information server 110 (step 226). If there are too many potential answers (for instance if there are two pizza places on Main Street in Westfield), one or more questions to the user are generated in order to disambiguate the query (e.g. Do you mean "Venezia" or "Bella Roma?"). The answers to the additional questions are used to formulate a new logical search query. For this there might be additional rules like: if(Action_Object=Pizza_Restaurant and Too-Many_Answers) then User must provide further clarifying information such as, for example, the name of restaurant OR exact address. If the user does not provide enough information to achieve a single answer, the service host 112 might then list the possibilities and ask the user to choose one of them (see column 6 lines 28-59). Levin clearly indicate that in the user does not provide enough information to achieve a single answer then the service host might list the possibilities and ask the user to choose one of them. To the examiner that is a different modality than the original mode. It can be seen that in the original mode, the user was requesting the service. In this mode, the host provides a list of service for the user to choose from. In the original mode, the user did not have any choices, however, in this mode the user has a list to choose from. Therefore, the final action is sustained.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) SRI 1P037
---	---------------------------------------



In re Application of HALVERSON	
Application Number 09/524,095	Filed March 13, 2000
For Navigating Network-Based Electronic Information Using Spoken Natural Language Input With Multimodal Error Feedback	
Group Art Unit 2155	Examiner F. Backer

#25
LDJ
4-16-02

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response in the above identified application.

The requested extension and appropriate non-small-entity fee are as follows (check time period desired):

- One month (37 CFR 1.17(a)(1)) \$
- Two months (37 CFR 1.17(a)(2)) \$400.00
- Three months (37 CFR 1.17(a)(3)) \$
- Four months (37 CFR 1.17(a)(4)) \$
- Five months (37 CFR 1.17(a)(5)) \$

- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown above is reduced by one-half, and the resulting fee is: \$ 200.00 .
- A check in the amount of the fee is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Commissioner has already been authorized to charge fees in this application to a Deposit Account.
- The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 20-0782 .
I have enclosed a duplicate copy of this sheet.

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Technology Center 2100

- I am the applicant/inventor.
- assignee of record of the entire interest. See 37 CFR 3.71
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).
- attorney or agent of record.
- attorney or agent under 37 CFR 1.34(a).
Registration number if acting under 37 CFR 1.34(a). _____

04/17/2002 LJOHNSON 00000001 688782 09524095
01 FD:217 250.00 CH

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

April 10, 2002

Date

Signature

KIN-WAH TONG

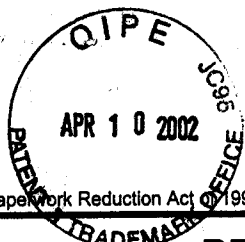
Typed or printed name

04/18/2002 AWONDA F1 00000141 200782 09524095
02 FD:216 200.00 CH

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

*Total of _____ forms are submitted.

Burden Hour Statement: This form is estimated to take 0.1 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



04-11-02

RCE / 2700 \$

PTO/SB/30 (8/2000)

Approved for use through 10/31/2002 OMB 0651-0031

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

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#26
LDJ
4-16-02

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000, provides for continued examination of a utility or plant application filed on or after June 8, 1995, See the American Inventors Protection Act of 1999 (AIPA).

Application Number	09/524,095
Filing Date	March 13, 2000
First Named Inventor	HALVERSON
Group Art Unit	2155
Examiner Name	F. Backer
Attorney Docket Number	SRI 1P037

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application. NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53 (d) (PTO/SB/29) instead of an RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE Practice.

1. Submission required under 37 C.F.R. § 1.114.

- a. Previously submitted
 - i. Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____
 - ii. Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
 - iii. Other _____
- b. Enclosed
 - i. Amendment/Reply
 - ii. Affidavit(s)/Declaration(s)
 - iii. Information Disclosure Statement (IDS)
 - iv. Other Preliminary Amendment

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Technology Center 200

2. Miscellaneous

- a. Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required)
- b. Other _____

3. Fees The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

- a. The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 20-0782
 - i. RCE fee required under 37 C.F.R. § 1.17(e)
 - ii. Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)
 - iii. Other _____
- b. Check in the amount of \$ _____ enclosed
- c. Payment by credit card (Form PTO-2038 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

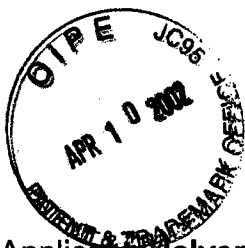
Name (Print / Type)	KIN-WAH TONG	Registration No. (Attorney / Agent)	39,400
Signature		Date	April 10, 2002

04/12/2002 ANCDRAF1 00000141 200762 09524095

01 010275 370.00 CH

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09/524,095



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant: **Halverson et al.**

Case: **SRI1P037**

Serial No.: **09/524,095**

Filed: **March 13, 2000**

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APR 12 2002
Technology Center 2100

Group Art Unit: **2155**

Examiner: **Firmin Backer**

Title: **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
FEEDBACK**

ASSISTANT COMMISSIONER FOR PATENTS
Box **RCE**
Washington, D. C. 20231

S I R:

Please be advised that the enclosed RCE and Preliminary Amendment are filed with a two-month extension request instead of a three-month extension request. The reason is that the Advisory Action dated February 19, 2002 was erroneously forwarded to a different law firm by the USPTO. This error was communicated to Examiner Backer and the Examiner subsequently issued a supplemental Advisory Action to the Applicants' representative on April 3, 2002. As such, Applicants have informed the Examiner that the enclosed RCE and Preliminary Amendment will be filed with a two-month extension request instead of a three-month extension request.

However, in the event that a three-month extension request is required, Applicants' representative hereby requests for a three-month extension request and authorizes the payment of the necessary extension fee via **Deposit Account: 20-0782**.

09/524,095



4/10/02

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
First Floor,
Shrewsbury, New Jersey 07702

Respectfully submitted,

Kin-Wah Tong, Attorney
Reg. No. 39,400
(732) 530-9404



*****EXPRESS MAIL CERTIFICATION*****

"Express Mail" mailing label number EL 849341069 US

Date of deposit APRIL 10, 2002

I hereby certify that this paper and/or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner of Patents, BOX RCE, Washington, D.C. 20231.

Linda DeNardi
Signature of person mailing paper or fee

Linda DeNardi
Name of person mailing paper or fee

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APR 12 2002
Technology Center 2100

09/524,095



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

#27/10
LDS
4-16-02

PATENT APPLICATION

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Applicant: Halverson et al.

APR 12 2002

Case: SRI1P037

Technology Center 2100

Serial No.: 09/524,095

Filed: March 13, 2000

Group Art Unit: 2155

Examiner: Firmin Backer

Title: **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
FEEDBACK**

ASSISTANT COMMISSIONER FOR PATENTS
Box RCE
Washington, D. C. 20231

S I R:

Preliminary Amendment

This Preliminary Amendment is filed in conjunction with an RCE and addresses the Advisory Action dated April 3, 2002.

IN THE CLAIMS

Please amend claims 56, 82, and 101 as shown below. The claims are "clean version" of the amended claims, i.e., with changes incorporated into the claims, whereas the Appendix to this Amendment illustrates the amended claims using underlines and brackets to indicate addition and deletion, respectively.

56. (Amended) A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

09/524,095

- C1
[scribble]
end
- (a) receiving a spoken request for desired information from the user;
 - (b) rendering an interpretation of the spoken request;
 - (c) constructing at least part of a navigation query based upon the interpretation;
 - (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request;
 - (e) refining the navigation query, based upon the additional input;
 - (f) using the refined navigation query to select a portion of the electronic data source; and
 - (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

82. (Amended) A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- C2
- (a) a portable microphone operable to receive a spoken request for desired information from the user;
 - (b) language processing logic, operable to render an interpretation of the spoken request;
 - (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
 - (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request;
 - (e) query refining logic, operable to refine the navigation query, based upon the additional input;
 - (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
 - (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

09/524,095

101. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

(a) a code segment that receives a spoken request for desired information from the user;

(b) a code segment that renders an interpretation of the spoken request;

(c) a code segment that constructs at least part of a navigation query based upon the interpretation;

(d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request;

(e) a code segment that refines the navigation query, based upon the additional input;

(f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and

(g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

REMARKS

In view of the above Amendment and the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102. Thus, the Applicants believe that all of these claims are now in allowable form.

I. REJECTION OF CLAIMS 56-126 UNDER 35 U.S.C. § 102

The Examiner has rejected claims 56-126 in Paragraphs 2-34 of the Final Office Action and in the Advisory Action as being anticipated by the Levin et al. patent (US Patent 6,173,279 issued January 9, 2001, hereinafter referred to as Levin). The rejection is respectfully traversed.

09/524,095

Levin teaches "a method of using at least one natural language query to retrieve information from one or more data resources and further performing a requested action using the retrieved information is disclosed". (See Levin, Column 2, lines 15-18) Namely, Levin teaches a method for using natural language query to obtain information, where upon receipt of the requested information, a desired action is executed based upon the requested information. To illustrate, Levin provides the example, where a user employs natural language to request the telephone number of a restaurant. Upon receipt of the telephone number, the telephone number is actually dialed for the user. (See Levin, Column 3 line 62 to Column 4, line 1)

In contrast, Levin fails to teach or suggest the novel concept of speech-based navigation where the method solicits additional input from the user, including user interaction in a non-spoken modality different than the original request. Specifically, Applicants' amended independent claims 56, 82 and 101 positively recite:

56. A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:
- (a) receiving a spoken request for desired information from the user;
 - (b) rendering an interpretation of the spoken request;
 - (c) constructing at least part of a navigation query based upon the interpretation;
 - (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request;
 - (e) refining the navigation query, based upon the additional input;
 - (f) using the refined navigation query to select a portion of the electronic data source; and
 - (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user. (emphasis added)
82. A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:
- (a) a portable microphone operable to receive a spoken request for desired information from the user;
 - (b) language processing logic, operable to render an interpretation of the spoken request;
 - (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;

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(d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request;

(e) query refining logic, operable to refine the navigation query, based upon the additional input;

(f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and

(g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

101. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

(a) a code segment that receives a spoken request for desired information from the user;

(b) a code segment that renders an interpretation of the spoken request;

(c) a code segment that constructs at least part of a navigation query based upon the interpretation;

(d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request;

(e) a code segment that refines the navigation query, based upon the additional input;

(f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and

(g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (emphasis added)

Applicants direct the Examiner's attention to the fact that Applicants' invention teaches a novel method and apparatus for speech-based navigation where the method solicits additional input from the user, including user interaction in a non-spoken modality different than the original request. Specifically, Applicants address the criticality of errors and deficiencies via user interface modalities in addition to spoken natural language. It has been observed that users are often frustrated by ineffective or non optimal speech-based navigation that simply engages the user repeatedly in a long series of questions and answers, i.e., "single modal interaction", to perfect the navigation query. This single modal approach is often tedious and uninspiring for a user who must refine the navigation query repeatedly to achieve the desired result,

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thereby increasing the time the user must interact with a system. In fact, one goal of the speech-based navigation is to relieve this very tedium where the user must engage a system repeatedly, e.g., via a long sequence of menus to achieve the desired result.

To address this criticality, Applicants' navigation query can be refined via input from the user, where the user interaction is in a non-spoken modality different than the original request. To illustrate, if a portion of the navigation query can be achieved, then the result can be presented to the user in a way that the user can provide additional input via interaction that is in a non-spoken modality that is different than the original request. For example, if the "partial" navigation query produces three possible results, then the results can be presented to the user via a menu with the most likely result being highlighted. The user can then press a button on a remote unit to accept the highlighted result or simply scroll to one of the other three choices. Thus, the pressing of the button by the user is a user interaction that is in a non-spoken modality different than the original request, e.g., a natural language request that originally started the navigation request. This is an important aspect of the invention because of the psychological and real effect where the user perceives that the navigation query is actually progressing closer to the achieved result.

In contrast, Levin teaches that "the service host 112 determines if there are any ambiguities with respect to the response (step 222) and, if so, forwards additional queries to the user to help to resolve the ambiguities (step 224)". (emphasis added) (See Levin, Column 6, lines 40-43). Additionally, Levin states that "[t]he service host 112 includes a dialog control program that manages interactions with users over several turns (e.g., it decides when to ask a question, when to give an answer, provides means for clarifying ambiguities, and provides error control and recovery during an interaction)". (emphasis added) (See Levin, Column 5, lines 15-20). Levin's single modal approach is contrary to Applicants' invention and is one of the criticalities that Applicants' invention is designed to address. To further support Applicants' position, Levin states that "[t]he invention is independent of the actual modality of call placement". (See Levin, Column 4, lines 29-31) This statement is another clear indication that Levin is totally unconcerned with the modality of the user interaction and

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is simply teaching a single modal approach via queries and answers.

However, the Examiner in the Advisory Action indicated that Levin's teaching of forwarding additional queries to the user constitutes a different modality. Applicants do not believe that the scope of Applicants' originally filed claims would read on this broad interpretation of different modality. Nevertheless, Applicants have agreed to clarify the independent claims to recite the term "a non-spoken modality different than the original request". The Examiner in several telephone conversations with Applicants' representative have indicated that this clarification will likely overcome the present rejection.

Additionally, it should be noted that this amendment is not made to overcome the cited prior art because it is Applicants' belief that the originally filed claims would not read on the invention disclosed by Levin. Thus, this clarifying amendment should not be interpreted in a manner that would limit the future application of Doctrine of Equivalents to Applicants' claims.

Therefore, the Applicants respectfully submit that independent claims 56, 82 and 101 are not anticipated by the Levin reference. As such, claims 56, 82 and 101 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

Claims 57-81, 83-100 and 102-126 depend, either directly or indirectly, from claims 56, 82 and 101 and recite additional features therefor. Since Levin fails to anticipate Applicants' invention as recited in Applicants' amended independent claims 56, 82 and 101, dependent claims 57-81, 83-100 and 102-126 are also not anticipated under 35 U.S.C. § 102 and are allowable for the same reason noted above.

II. Claims added in Preliminary Amendment dated September 12, 2000

Applicants have previously directed the Examiner's attention to the fact that it appears that the additional claims added in the Preliminary Amendment dated September 12, 2000 have not be addressed. Applicants respectfully request that the Examiner should verify the status of these added claims.

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Conclusion

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. §102. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the present final office action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

4/10/02



Kin-Wah Tong, Attorney
Reg. No. 39,400
(732) 530-9404

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
First Floor,
Shrewsbury, New Jersey 07702

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Appendix
(Marked-up version of amended claims)

56. (Amended) A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

82. (Amended) A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken request for desired information from the user;
- (b) language processing logic, operable to render an interpretation of the spoken request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;

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(f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and

(g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

101. A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

(a) a code segment that receives a spoken request for desired information from the user;

(b) a code segment that renders an interpretation of the spoken request;

(c) a code segment that constructs at least part of a navigation query based upon the interpretation;

(d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request;

(e) a code segment that refines the navigation query, based upon the additional input;


(f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and

(g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

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<p>FEE TRANSMITTAL for FY 2002</p> <p>APR 10 2002</p> <p>Patent fees are subject to annual revision.</p>	<p><i>Complete if Known</i></p> <p>Application Number: 09/524,095</p> <p>Filing Date: March 13, 2000</p> <p>First Named Inventor: Halverson</p> <p>Examiner Name: F. Backer</p> <p>Group / Art Unit: 2155</p> <p>Attorney Docket No.: SRI 1P037</p>
<p>RECEIVED APR 12 2002 Technology Center 2100</p>	
<p>TOTAL AMOUNT OF PAYMENT (\$) 570.00</p>	

<p>METHOD OF PAYMENT (check one)</p> <p>1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:</p> <p>Deposit Account Number: 20-0782</p> <p>Deposit Account Name: Moser, Patterson & Sheridan, LLP</p> <p><input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17</p> <p><input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27</p> <p>2. <input type="checkbox"/> Payment Enclosed:</p> <p><input type="checkbox"/> Check <input type="checkbox"/> Credit card <input type="checkbox"/> Money Order <input type="checkbox"/> Other</p>	<p>FEE CALCULATION (continued)</p> <p>3. ADDITIONAL FEES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Fee Code</th> <th>Large Entity Fee (\$)</th> <th>Small Entity Fee Code</th> <th>Small Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet.</td><td></td></tr> <tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for reexamination</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>116</td><td>400</td><td>216</td><td>200</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>117</td><td>920</td><td>217</td><td>460</td><td>Extension for reply within third month</td><td>200.00</td></tr> <tr><td>118</td><td>1,440</td><td>218</td><td>720</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>128</td><td>1,960</td><td>228</td><td>980</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>119</td><td>320</td><td>219</td><td>160</td><td>Notice of Appeal</td><td></td></tr> <tr><td>120</td><td>320</td><td>220</td><td>160</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>121</td><td>280</td><td>221</td><td>140</td><td>Request for oral hearing</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive -- unavoidable</td><td></td></tr> <tr><td>141</td><td>1,280</td><td>241</td><td>640</td><td>Petition to revive -- unintentional</td><td></td></tr> <tr><td>142</td><td>1,280</td><td>242</td><td>640</td><td>Utility issue fee (or reissue)</td><td></td></tr> <tr><td>143</td><td>460</td><td>243</td><td>230</td><td>Design issue fee</td><td></td></tr> <tr><td>144</td><td>620</td><td>244</td><td>310</td><td>Plant issue fee</td><td></td></tr> <tr><td>122</td><td>130</td><td>122</td><td>130</td><td>Petitions to the Commissioner</td><td></td></tr> <tr><td>123</td><td>50</td><td>123</td><td>50</td><td>Processing fee under 37 CFR 1.17 (q)</td><td></td></tr> <tr><td>126</td><td>180</td><td>126</td><td>180</td><td>Submission of Information Disclosure Stmt</td><td></td></tr> <tr><td>581</td><td>40</td><td>581</td><td>40</td><td>Recording each patent assignment per property (times number of properties)</td><td></td></tr> <tr><td>146</td><td>740</td><td>246</td><td>370</td><td>Filing a submission after final rejection (37 CFR § 1.129(a))</td><td></td></tr> <tr><td>149</td><td>740</td><td>249</td><td>370</td><td>For each additional invention to be examined (37 CFR § 1.129(b))</td><td></td></tr> <tr><td>179</td><td>740</td><td>279</td><td>370</td><td>Request for Continued Examination (RCE)</td><td>370.00</td></tr> <tr><td>169</td><td>900</td><td>169</td><td>900</td><td>Request for expedited examination of a design application</td><td></td></tr> <tr><td colspan="5">Other fee (specify)</td><td></td></tr> <tr> <td colspan="4">*Reduced by Basic Filing Fee Paid</td> <td>SUBTOTAL (3)</td> <td>(\$) 570.00</td> </tr> </tbody> </table>	Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid	105	130	205	65	Surcharge - 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SUBMITTED BY		<i>Complete (if applicable)</i>			
Name (Print/Type)	KIN-WAH TONG	Registration No. Attorney/Agent	39,400	Telephone	(732)530-9404
Signature				Date	APRIL 10, 2002

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Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRIIP037	6294

7590 05/07/2002

THOMASON, MOSER & PATTERSON, LLP
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

EXAMINER

BACKER, FIRMIN

ART UNIT PAPER NUMBER

3621

DATE MAILED: 05/07/2002

#28

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

82

PA

Office Action Summary	Application No. 09/524,095	Applicant(s) HALVERSON ET AL.	
	Examiner Firmin Backer	Art Unit 3621	

-- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 10 April 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 56-126 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 56-126 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 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.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) Interview Summary (PTO-413) Paper No(s). _____
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other:

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 10th, 2002 has been entered.

Response to Arguments

1. Applicant's arguments with respect to claims 56-126 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

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

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

3. Claims 56-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin et al. (U.S. Patent No. 6,173,279) in view of French-St. George et al (U.S. Patent 6,012,030 (*applicant submitted IDS*)).

4. As per claim 56, Levin et al teach a method for speech-based navigation (*information server, 110*) of an electronic data source located at one or more network servers located remotely

from a user, (*see abstract, fig 1, column 3 lines 5-35*), comprising receiving a spoken request (*receive a natural language query*) for desired information from the user (*user*); rendering an interpretation (*creating a semantic representation*) of the spoken request, constructing a navigation (*generating search*) query based upon the interpretation, refining the navigation query, based upon the additional input (*see column 6 lines 20-59*), using the navigation query to select a portion of the electronic data source and transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user (*see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claims 1, 10, 22*). Levin et al fail to teach an inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request. However, French-St. George et al. teach inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request (*see column 9 lines 36-65*). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Levin et al's inventive concept to include French-St. George et al's inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request because this would have avoided or reduces error as the system search for user request thereby enhance the flexibility and the efficiency of the system.

5. As per claim 57, Levin et al teach a method of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (*see abstract, fig 1, column 3 lines 37-5 lines 40*).

6. As per claim 58-62, Levin et al teach a method of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5)
7. As per claim 63-68, Levin et al teach a method of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).
8. As per claim 69, Levin et al teach a method wherein the additional input is solicited upon receiving a user-input statement... (see column 6 lines 20-59).
9. As per claim 70-73, Levin et al teach a method of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).
10. As per claim 74-75, Levin et al teach a method wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

11. As per claim 76, Levin et al teach a method wherein steps (d)-(e) are repeated until the navigational query is deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

12. As per claim 77, 78, Levin et al teach a method wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).

13. As per claim 79, Levin et al teach a method performed with respect to a plurality of user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).

14. As per claim 80-81, Levin et al teach a method of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5)

15. As per claim 82, Levin et al teach a system for speech-based navigation (*information server, 110*) of an electronic data source located at one or more network servers located remotely from a user, (*see abstract, fig 1, column 3 lines 5-35*), comprising a portable microphone (*microphone, 105*) receiving a spoken request (*receive a natural language query*) for desired information from the user (user) a language processing logic (*natural language server, 114*) rendering an interpretation (*creating a semantic representation*) of the spoken request, (*see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22*) a query construction logic

(*service host, 112*) constructing a navigation (*generating search*) query based upon the interpretation; a query interaction logic (*service host, 112*) a query refining logic (*service host, 112*) refining the navigation query, based upon the additional input (*see column 6 lines 20-59*), a navigation logic (*service host, 112*) using the navigation query to select a portion of the electronic data source; electronic infrastructure (*network, 108*) transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user. (*see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22*). However, French-St. George et al. teach inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request (*see column 9 lines 36-65*). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Levin et al's inventive concept to include French-St. George et al's inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request because this would have avoided or reduces error as the system search for user request thereby enhance the flexibility and the efficiency of the system.

16. As per claim 83, Levin et al teach a system of rendering the interpretation includes deriving linguistic information by using a speech recognition and a linguistic parser (*see abstract, fig 1, column 3 lines 37-5 lines 40*).

17. As per claim 84-86, Levin et al teach a system of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an

input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).

18. As per claim 87, 88, 100, Levin et al teach a system wherein at least a portion of the language processing is hosted on a computing device coupled with a microphone located locally with a user and a network computing device located remotely and data in a two-way communication infrastructure (coaxial, DSL, satellite, wireless/cellular, fiber-optic) (see abstract, fig. 1-3, column 3 line 36-9 line 5).

19. As per claim 89-94, Levin et al teach a system of soliciting additional input is performed in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

20. As per claim 95, 96, Levin et al teach a system wherein the input modality includes selecting (by speaking) from a displayed option menu (see abstract, fig. 1-3, column 3 line 36-9 line 5).

21. As per claim 97-98, Levin et al teach a system of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

22. As per claim 99, Levin et al teach a system wherein the display device receives data from the electronic device on the network via a communication box (see abstract, fig. 1-3, column 3 line 36-9 line 5).

23. As per claim 101, Levin et al teach a computer program for speech-based navigation (*information server, 110*) of an electronic data source located at one or more network servers located remotely from a user, (*see abstract, fig 1, column 3 lines 5-35*), comprising code segment receiving a spoken request (*receive a natural language query*) for desired information from the user (user); code segment rendering an interpretation (*creating a semantic representation*) of the spoken request, code segment constructing a navigation (*generating search*) query based upon the interpretation code segment, refining the navigation query, based upon the additional input (*see column 6 lines 20-59*), code segment using the navigation query to select a portion of the electronic data source; and code segment transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user (*see abstract, fig. 1-3, column 3 line 36-9 line 5, see also claim 1, 10, 22*). However, French-St. George et al. teach inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request (*see column 9 lines 36-65*). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Levin et al's inventive concept to include French-St. George et al's inventive concept of soliciting additional input from the user including user interaction in a non-spoken modality different that the original request because this would have avoided or

reduces error as the system search for user request thereby enhance the flexibility and the efficiency of the system.

24. As per claim 102, Levin et al teach a code segment deriving linguistic information by using a speech recognition and a linguistic parser (see abstract, fig 1, column 3 lines 37-5 lines 40).

25. As per claim 103-105, Levin et al teach a code segment of constructing a navigation query in the form of a database query on a computing device located on a network including extracting an input template for an online scripted interface to the data source to be used for the construction of the navigation query and dynamically scraping the online scripted interface (see abstract, fig. 1-3, column 3 line 36-9 line 5).

26. As per claim 106-107, Levin et al teach a computer program wherein rendering of the interpretation and the construction of the navigation query are performed on a computing device located locally with or remotely from the user (see abstract, fig. 1-3, column 3 line 36-9 line 5).

27. As per claim 108-114, Levin et al teach a code segment that solicits additional input display on option menu is performed by speaking in response deficiency including unresolved word encountered after the first navigation of the data source, required element of the navigational query, data recorded within the data source, failure to identify data record responsive to navigational query (see column 6 lines 20-59).

28. As per claim 115, Levin et al teach a computer program the act of selecting from the display is performed by speaking (see column 6 lines 20-59)

29. As per claim 116, Levin et al teach a code segment of the computer program operate with respect to a plurality of simultaneous user and corresponding client devices (see abstract, fig. 1-3, column 3 line 36-9 line 5).

30. As per claim 117, Levin et al teach a code segment that select data source form a plurality of electronic data source content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

31. As per claim 118, Levin et al teach a computer program of selecting data source from plurality of electronic data source storing multimedia content including audio and video content (see abstract, fig. 1-3, column 3 line 36-9 line 5).

32. As per claim 119, Levin et al teach a computer program wherein the additional input is solicited upon receiving a user-input statement...(see column 6 lines 20-59).

33. As per claim 120-123, Levin et al teach a code segment of soliciting additional input from the user, including presenting: a menu, a textual or an audible request, a list of portions of data source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

Art Unit: 3621

34. As per claim 124-125, Levin et al teach a computer program wherein additional input received from the user is speech based, of no spoken input source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

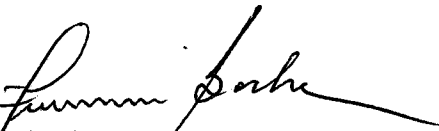
35. As per claim 126, Levin et al teach a code segment wherein steps (d)-(e) are repeated until the navigational query if deemed adequate source (see abstract, fig. 1-3, column 3 line 36-9 line 5).

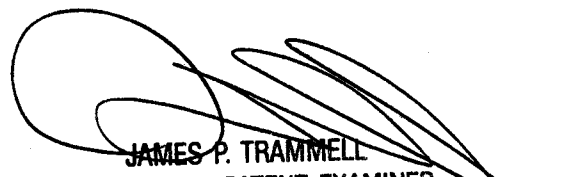
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is (703) 305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on (703) 305-9768. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5484.


Firmin Backer
May 3, 2002


JAMES P. TRAMMELL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

PATENT

2155

#29
LSD
7-1-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: JULIA, LUC

Serial No.: 09/524,095

Filed: 3/13/2000

GAU/Examiner: 2155/BACKER, F.

For: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE

INPUT WITH MULTIMODAL CONVERGENT ERROR FEEDBACK



Certificate of Mailing

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on: 06/18/02
Signed: [Signature]

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JUL 01 2002
Technology Center 2100

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Commissioner for Patents
Washington, D. C. 20231

Sir:

Please send all correspondence for this application as follows:

PERKINS COIE LLP
101 Jefferson Drive
Menlo Park, CA 94025-1114

Please direct any calls to Paul L. Hickman at (650) 838-4443.

Dated: 06/18/02 Respectfully submitted,
PERKINS COIE LLP

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101 Jefferson Drive
Menlo Park, CA 94025
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 Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKETT NO.
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EXAMINER

ART UNIT PAPER NUMBER

29

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

- (1) David Wiley (3) _____
- (2) Knuck Hong 39,400 (4) _____

Date of interview _____

Type: Telephonic Personal (copy is given to applicant applicant's representative).

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

Agreement was reached with respect to some or all of the claims in question. was not reached.

Claims discussed: 56-126

Identification of prior art discussed: French

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: The applicant

agreed to ~~the~~ amend element (d) in claim 56, ^(b², 1st) and
the examiner agreed to withdraw the previous rejections
upon the amendment.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

- 1. It is not necessary for applicant to provide a separate record of the substance of the interview.
- 2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.

Examiner's Signature

02 15:20 FAX 732

MOSEY PATTERSON SHER

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Technology Center 2100

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant: Halverson et al.

Case: SRI1P057

Serial No.: 09/524,095

Filed: March 13, 2000

Group Art Unit: 2155

Examiner: Firmin Backer

Title: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
FEEDBACK

ASSISTANT COMMISSIONER FOR PATENTS

Box Non-Fee Amendment

Washington, D. C. 20231

09/13/2002 DFORT

01 FC:202
02 FC:203

84.00 CH
54.00 CH

SIR:

AMENDMENT AND RESPONSE UNDER 37 C.F.R. § 1.111

This response addresses the Office Action dated May 7, 2002. The Office Action appears to be labeled as Paper No. 10.

IN THE CLAIMS

Please amend claims 56-181 as shown below. The claims are "clean version" of the amended claims, i.e., with changes incorporated into the claims, whereas the Appendix to this Amendment illustrates the amended claims using underlines and brackets to indicate addition and deletion, respectively.

56. (Twice Amended) A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers

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located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

101

²
~~57~~. (Amended) The method of claim ~~56~~¹, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and a linguistic parser.

³
~~58~~. (Amended) The method of claim ~~58~~¹, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

⁴
~~59~~. (Amended) The method of claim ~~58~~³, wherein the step of extracting the input template includes dynamically scraping the online scripted interface.

⁵
~~60~~. (Amended) The method of claim ~~58~~¹, wherein the navigation query is constructed in the format of a database query language.

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⁶
~~61.~~ (Amended) The method of claim ~~56~~⁶, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

⁷
~~62.~~ (Amended) The method of claim ~~56~~⁷, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

⁸
~~63.~~ (Amended) The method of claim ~~56~~⁸, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

⁹
~~64.~~ (Amended) The method of claim ~~63~~⁹, wherein the deficiencies include unresolved words of the spoken request.

¹⁰
~~65.~~ (Amended) The method of claim ~~63~~¹⁰, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

¹¹
~~66.~~ (Amended) The method of claim ~~56~~¹¹, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

¹²
~~67.~~ (Amended) The method of claim ~~66~~¹², wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

¹³
~~68.~~ (Amended) The method of claim ~~66~~¹³, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

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¹⁴
~~69~~. (Amended) The method of claim ~~56~~¹, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

¹⁵
~~70~~. (Amended) The method of claim ~~56~~¹, wherein the step of soliciting the additional input includes presenting a menu to the user on the client device of the user.

¹⁶
~~71~~. (Amended) The method of claim ~~56~~¹, wherein the step of soliciting the additional input includes presenting a textual request for the additional input.

¹⁷
~~72~~. (Amended) The method of claim ~~56~~¹, wherein the step of soliciting the additional input includes an audible request for the additional input.

¹⁸
~~73~~. (Amended) The method of claim ~~56~~¹, wherein the step of soliciting the additional input includes presenting a list of portions of the electronic data source that match the navigational query.

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¹⁹
~~74~~. (Amended) The method of claim ~~56~~¹, wherein additional input received from the user is at least partially speech based.

²⁰
~~75~~. (Amended) The method of claim ~~56~~¹, wherein additional input received from the user includes no spoken input.

²¹
~~76~~. (Amended) The method of claim ~~56~~¹, wherein steps (d)-(e) are repeated until the navigational query is deemed adequate.

²²
~~77~~. (Amended) The method of claim ~~56~~¹, wherein the input modality of step (d) includes selecting from a displayed option menu.

²³
~~78~~. (Amended) The method of claim ~~56~~²², wherein the act of selecting from the displayed

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option menu is performed by speaking.

²⁴
79. (Amended) The method of claim ¹58, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

²⁶
80. (Amended) The method of claim ¹58, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

²⁶
81. (Amended) The method of claim ¹58, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

²¹
82. (Twice amended) A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:
(a) a portable microphone operable to receive a spoken request for desired information from the user;
(b) language processing logic, operable to render an interpretation of the spoken request;
(c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;
(d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
(e) query refining logic, operable to refine the navigation query, based upon the additional input;
(f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
(g) electronic communications infrastructure for transmitting the selected portion

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of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

²⁸
83. (Amended) The system of claim ²⁷82, wherein the language processing logic includes speech recognition logic and an linguistic parsing logic for deriving linguistic information.

²⁹
84. (Amended) The system of claim ²⁷82, wherein the language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

³⁰
85. (Amended) The system of claim ²⁵84, wherein the language processing logic dynamically scrapes the online scripted interface.

³¹
86. (Amended) The system of claim ²⁷82, wherein the query construction logic constructs the query in the format of a database query language.

³²
87. (Amended) The system of claim ²⁷82, wherein at least a portion of the language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

³³
88. (Amended) The system of claim ²⁷82, wherein at least a portion of the language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

³⁴
89. (Amended) The system of claim ²⁷82, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

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³⁵
~~90.~~ (Amended) The system of claim ~~89~~³⁴, wherein the deficiencies include unresolved words of the spoken request.

³⁶
~~91.~~ (Amended) The system of claim ~~89~~³⁴, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

³⁷
~~92.~~ (Amended) The system of claim ~~82~~³⁷, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

³⁸
~~93.~~ (Amended) The system of claim ~~92~~³¹, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

³⁹
~~94.~~ (Amended) The system of claim ~~92~~³¹, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

⁴⁰
~~95.~~ (Amended) The system of claim ~~82~~³⁷, wherein the user interaction logic displays an option menu.

⁴¹
~~96.~~ (Amended) The system of claim ~~95~~⁴⁰, wherein the act of selecting from the displayed option menu is performed by speaking.

⁴²
~~97.~~ (Amended) The system of claim ~~82~~³⁷, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

⁴³
~~98.~~ (Amended) The system of claim ~~82~~³⁷, wherein the electronic data source stores

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multimedia content including at least one of video content and audio content.

⁴⁴
~~99~~. (Amended) The system of claim ~~82~~²⁷, wherein the display device receives data from the electronic data source on the network servers via a communications box.

⁴⁵
~~100~~. (Amended) The system of claim ~~82~~²⁷, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

⁴⁶
~~101~~. (Twice amended) A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) a code segment that refines the navigation query, based upon the additional input;
- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

⁴⁷
~~102~~. (Amended) The computer program of claim ~~101~~⁴⁶, further comprising a code

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segment that derives linguistic information by using a speech recognition engine and a linguistic parser.

⁴⁶103. (Amended) The computer program of claim ⁴⁶101, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

⁴⁹104. (Amended) The computer program of claim ⁴⁸103, further comprising a code segment that dynamically scrapes the online scripted interface.

⁵⁰105. (Amended) The computer program of claim ⁴⁶101, wherein the navigation query is constructed in the format of a database query language.

⁵¹106. (Amended) The computer program of claim ⁴⁶101, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

⁵²107. (Amended) The compute program of claim ⁴⁶101, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

⁵³108. (Amended) The computer program of claim ⁴⁶101, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

⁵⁴109. (Amended) The computer program of claim ⁵³108, wherein the deficiencies include unresolved words of the spoken request.

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⁵⁵
~~110~~. (Amended) The computer program of claim ⁵³~~108~~, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

⁵⁶
~~111~~. (Amended) The computer program of claim ⁴⁶~~101~~, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

⁵⁷
~~112~~. (Amended) The computer program of claim ⁵⁶~~111~~, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

⁵⁸
~~113~~. (Amended) The computer program of claim ⁵⁷~~112~~, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

⁵⁹
~~114~~. (Amended) The computer program of claim ⁴⁶~~101~~, wherein code segment that solicits additional input displays an option menu.

⁴⁰
~~115~~. (Amended) The computer program of claim ⁵⁹~~114~~, wherein the act of selecting from the displayed option menu is performed by speaking.

⁴⁶
~~116~~. (Amended) The computer program of claim ⁴⁶~~101~~, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

⁶²
~~117~~. (Amended) The computer program of claim ⁴⁶~~101~~, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

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⁶³ 118. (Amended) The computer program of claim ⁴⁶ 101, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

⁶⁴ 119. (Amended) The computer program of claim ⁴⁶ 101, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

⁶⁵ 120. (Amended) The computer program of claim ⁴⁶ 101, wherein the code segment that solicits the additional input includes a code segment that presents a menu to the user on the client device of the user.

⁶⁶ 121. (Amended) The computer program of claim ⁴⁶ 101, wherein the code segment that solicits the additional input includes a code segment that presents a textual request for the additional input.

⁶⁷ 122. (Amended) The computer program of claim ⁴⁶ 101, wherein the code segment that solicits the additional input includes a code segment that produces an audible request for the additional input.

⁶⁸ 123. (Amended) The computer program of claim ⁴⁶ 101, wherein the code segment that solicits the additional input includes a code segment that presents a list of portions of the electronic data source that match the navigational query.

⁶⁹ 124. (Amended) The computer program of claim ⁴⁶ 101, wherein additional input received from the user is at least partially speech based.

⁷⁰ 125. (Amended) The computer program of claim ⁴⁶ 101, wherein additional input received from the user includes no spoken input.

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⁷¹
126. (Amended) The compute program of claim ⁷⁴101, wherein code segments (d)-(e) are repeated until the navigational query is deemed adequate.

⁷²
127. (Amended) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

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- (a) receiving a spoken natural language ("NL") request for desired information from the user;
 - (b) rendering an interpretation of the spoken request;
 - (c) constructing at least part of a navigation query based upon the interpretation;
 - (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
 - (e) refining the navigation query, based upon the additional input;
 - (f) using the refined navigation query to select a portion of the electronic data source; and
 - (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

⁷³
128. (Amended) The method of claim ⁷²127, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and an NL parser.

⁷⁴
129. (Amended) The method of claim ⁷²127, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

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¹⁵
130. (Amended) The method of claim ¹⁴129, wherein the step of extracting an input template includes dynamically scraping the online scripted interface.

¹⁶
131. (Amended) The method of claim ¹²127, wherein the navigation query is constructed in the format of a database query language.

¹⁷
132. (Amended) The method of claim ¹²127, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

¹⁸
133. (Amended) The method of claim ¹²127, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

¹⁹
134. (Amended) The method of claim ¹²127, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

²⁰
135. (Amended) The method of claim ¹⁹134, wherein the deficiencies include unresolved words of the spoken NL request.

²¹
136. (Amended) The method of claim ¹⁹134, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

²²
137. (Amended) The method of claim ¹²127, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

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⁸³
138. (Amended) The method of claim ⁸²137, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

⁸⁴
139. (Amended) The method of claim ⁸²137, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

⁸⁵
140. (Amended) The method of claim ¹²⁷127, wherein the input modality of step (d) includes selecting from a displayed option menu.

⁸⁵
⁸⁶141. (Amended) The method of claim ⁸⁵140, wherein the act of selecting from the displayed option menu is performed by speaking.

⁸⁷
142. (Amended) The method of claim ¹²⁷127, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

⁸⁴
143. (Amended) The method of claim ¹²⁷127, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

⁸⁹
144. (Amended) The method of claim ¹²⁷127, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

⁹⁰
145. (Amended) A system for utilizing spoken natural language to navigate an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken natural language ("NL") request for desired information from the user;

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- (b) spoken language processing logic, operable to render an interpretation of the spoken natural language request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken natural language request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;
- (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
- (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

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⁹¹
~~146.~~ (Amended) The system of claim ⁹⁰~~145~~, wherein the spoken language processing logic includes speech recognition logic and an NL parsing logic for deriving linguistic information.

⁹²
~~147.~~ (Amended) The system of claim ⁹⁰~~145~~, wherein the spoken language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

⁹³
~~148.~~ (Amended) The system of claim ⁹⁰~~145~~, wherein the spoken language processing logic dynamically scrapes the online scripted interface.

⁹⁴
~~149.~~ (Amended) The system of claim ⁹⁰~~145~~, wherein the query construction logic constructs the query in the format of a database query language.

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~~95~~
150. (Amended) The system of claim ~~145~~⁹⁰, wherein at least a portion of the spoken language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

~~96~~
151. (Amended) The system of claim ~~145~~⁹⁰, wherein at least a portion of the spoken language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

~~97~~
152. (Amended) The system of claim ~~145~~⁹⁰, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

~~98~~
153. (Amended) The system of claim ~~152~~⁹⁷, wherein the deficiencies include unresolved words of the spoken NL request.

~~99~~
154. (Amended) The system of claim ~~152~~⁹⁷, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

~~100~~
155. (Amended) The system of claim ~~145~~⁹⁰, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

~~101~~
156. (Amended) The system of claim ~~155~~¹⁰⁰, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

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¹⁰²
~~157~~. (Amended) The system of claim ~~155~~¹⁰³, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

¹⁰³
~~158~~. (Amended) The system of claim ~~155~~¹⁹⁰, wherein the user interaction logic displays an option menu.

¹⁰⁴
~~159~~. (Amended) The system of claim ~~158~~¹⁰³, wherein the act of selecting from the displayed option menu is performed by speaking.

¹⁰⁵
~~160~~. (Amended) The system of claim ~~145~~⁹⁰, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

¹⁰⁶
~~161~~. (Amended) The system of claim ~~145~~⁹⁰, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

¹⁰⁷
~~162~~. (Amended) The system of claim ~~145~~⁹⁰, wherein the display device receives data from the electronic data source on the network servers via a communications box.

¹⁰⁸
~~163~~. (Amended) The system of claim ~~145~~⁹⁰, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

¹⁰⁹
~~164~~. (Amended) A computer program embodied on a computer readable medium for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken natural language ("NL") request for desired information from the user;

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- (b) a code segment that renders an interpretation of the spoken natural language request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) a code segment that refines the navigation query, based upon the additional inputs;
- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

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¹¹⁰
~~105~~. (Amended) The computer program of claim ~~104~~¹⁰⁹, further comprising a code segment that derives linguistic information by using a speech recognition engine and an NL parser.

¹¹¹
~~106~~. (Amended) The computer program of claim ~~104~~¹⁰⁹, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

¹¹²
~~107~~. (Amended) The computer program of claim ~~106~~¹⁰⁹, further comprising a code segment that dynamically scrapes the online scripted interface.

¹¹³
~~108~~. (Amended) The computer program of claim ~~164~~¹⁰⁹, wherein the navigation query is constructed in the format of a database query language.

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¹¹⁴
~~169~~. (Amended) The computer program of claim ~~164~~¹⁰⁹, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

¹¹⁵
~~170~~. (Amended) The computer program of claim ~~164~~¹⁰⁹, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

¹¹⁴
~~171~~. (Amended) The computer program of claim ~~164~~¹⁰⁹, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

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¹¹⁷
~~172~~. (Amended) The computer program of claim ~~171~~¹¹⁴, wherein the deficiencies include unresolved words of the spoken NL request.

¹¹⁸
~~173~~. (Amended) The computer program of claim ~~171~~¹¹⁶, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

¹¹⁹
~~174~~. (Amended) The computer program of claim ~~164~~¹⁰⁹, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

¹²⁰
~~175~~. (Amended) The computer program of claim ~~174~~¹¹⁹, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

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121 119
176. (Amended) The computer program of claim 174, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

122 109
177. (Amended) The computer program of claim 164, wherein code segment that solicits additional input displays an option menu.

123 122
178. (Amended) The computer program of claim 177, wherein the act of selecting from the displayed option menu is performed by speaking.

124 109
179. (Amended) The computer program of claim 164, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

125 109
180. (Amended) The computer program of claim 164, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

126 109
181. (Amended) The computer program of claim 164, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

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[Please add the following new claims:]

127
182. (New) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

(a) receiving a spoken natural language ("NL") request for desired information from the user;

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- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request, in accordance with results generated from said at least part of a navigation query;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

¹²⁸ 183. (New) The method of claim ¹²⁷ 162, wherein the input modality of step (d) includes selecting from a displayed option menu.

¹²⁹ 184. (New) The method of claim ¹²⁸ 183, wherein the act of selecting from the displayed option menu is performed by speaking.

¹³⁰ 185. (New) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken natural language ("NL") request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request, in response to one or more deficiencies encountered during the step of constructing said at least part of a navigation query;
- (e) refining the navigation query, based upon the additional input;

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(f) using the refined navigation query to select a portion of the electronic data source; and

(g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

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¹³¹186. (New) The method of claim ¹³⁰185, wherein the input modality of step (d) includes selecting from a displayed option menu.

¹³²187. (New) The method of claim ¹³¹186, wherein the act of selecting from the displayed option menu is performed by speaking.

REMARKS

Applicants' representative would like to thank Primary Examiner David Wiley for kindly taking a substantial amount of time on May 23, 2002 to discuss the merits of the subject invention in a face-to-face Examiner Interview. Applicants' representative is aware of the time constraint that is placed on the Examiner and is appreciative of the Examiner's willingness to devote such large quantity of time to discuss the case on the merit.

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 103. Thus, the Applicants believe that all of these claims are now in allowable form.

I. MISNUMBERING OF CLAIMS

The Examiner has correctly detected that the claims (1-71) added in the Preliminary Amendment dated June 30, 2000 to replace the originally filed claims 1-55 were incorrectly numbered. The Examiner, in turn, renumbered these claims as 56-126 in the Office Action dated April 24, 2001.

However, Applicants also filed a second Preliminary Amendment "B" on September 12, 2000 that re-inserted the original claims 1-55. Again, Applicants

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misnumbered these claims as 72-126. Applicants now believe that these claims should be renumbered as claims 127-181. In fact, Applicants previously requested Examiner Backer to acknowledge these claims in Applicants' Preliminary Amendment dated April 10, 2002 that was filed in conjunction with a RCE. However, the Examiner is completely silent as to the status of these claims in the present Office Action.

This issue was brought to the attention of Primary Examiner David Wiley during the Examiner Interview. The Examiner acknowledged the existence of these claims and indicated that the agreement reached during the Examiner Interview is equally applicable to these claims.

To assist the Examiner and as agreed during the Examiner Interview, Applicants have affirmatively amended claims 56-181 as shown above to reflect the proper numbering. Thus, renumbering these claims are purely cosmetic and do not narrow the scope of the claims. Applicants believe that claims 127-181 are also currently pending in the present application.

Applicants sincerely apologize for the confusion created by the misnumbering, but Applicants respectfully request that the Examiner verify the status of claims 127-181 in the next Office Action or Notice of Allowance. Namely, these claims have not been rejected or allowed.

II. REJECTION OF CLAIMS 56-126 UNDER 35 U.S.C. § 103

The Examiner has rejected claims 56-126 in Paragraphs 2-35 of the Office Action as being unpatentable over the Levin et al. patent (US Patent 6,173,279 issued January 9, 2001, hereinafter referred to as Levin) in view of French-St. George et al. (US Patent 6,012,030, issued January 4, 2000, hereinafter referred to as French). The rejection is respectfully traversed.

Levin teaches "a method of using at least one natural language query to retrieve information from one or more data resources and further performing a requested action using the retrieved information is disclosed". (See Levin, Column 2, lines 15-18) Namely, Levin teaches a method for using natural language query to obtain information,

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where upon receipt of the requested information, a desired action is executed based upon the requested information. To illustrate, Levin provides the example, where a user employs natural language to request the telephone number of a restaurant. Upon receipt of the telephone number, the telephone number is actually dialed for the user. (See Levin, Column 3 line 62 to Column 4, line 1)

French teaches a management of speech and audio prompts and interface, in multimodal user interfaces. Specifically, the system is designed to detect and dynamically switches the speech interface into background mode or foreground mode in response to the user's current interaction modality. In the background mode, the speech interface can only respond to a very limited set of voice commands. (See French, Column 3, lines 20-57)

During the Examiner Interview, Applicants directed the Examiner's attention to the fact that French is a layer by layer system, i.e., a system that repeatedly asks questions and waits for a response before issuing the next response, whereas Levin is a natural language query system. Thus, the combination of the alleged references was challenged by the Applicants.

Second, assuming, *arguendo*, that the alleged combination was proper, the combination still falls short of making Applicants' Invention obvious. Namely, Applicants' invention solicits additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request the non-spoken modality. In contrast, Levin is completely devoid of any disclosure pertaining to a different modality of interaction and French's invention is tied to the constant need to detect what the user is doing and shifting the speech interface back and forth between background and foreground modes. The Examiner agreed during the Examiner Interview that the alleged combination would not make Applicants' invention obvious.

However, the Examiner suggested that a clarification of step d) in the independent claims would be appropriate. Although Applicants believe that the current language would overcome the present obviousness rejection, Applicants nevertheless

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agreed to clarify step d) in the independent claims. Specifically, Applicants amended all the independent claims to recite the term "without requiring the user to request said non-spoken modality".

However, for the record, Applicants' position is that this term is provided purely to clarify the claim. The Examiner indicated that such clarification would be acceptable.

Therefore, the Applicants respectfully submit that independent claims 56, 82, 101, 127, 145, and 164 are not made obvious by the Levin and French references. As such, claims 56, 82, 101, 127, 145, and 164 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

Claims 57-81, 83-100, 102-126, 128-144, 146-163 and 165-181 depend, either directly or indirectly, from claims 56, 82, 101, 127, 145, and 164 and recite additional features therefor. Since Levin and French fail to make obvious Applicants' invention as recited in Applicants' independent claims 56, 82, 101, 127, 145, and 164, dependent claims 57-81, 83-100, 102-126, 128-144, 146-163 and 165-181 are also not made obvious under 35 U.S.C. § 103 and are allowable for the same reason noted above.

III. NEW CLAIMS 182-187

In addressing the Examiner's concern pertaining to the clarification of step d) in Applicants' independent claims, Applicants have added new independent claims 182 and 185 to address this issue in a different manner. Specifically, Applicants' new independent claims recite the term "in accordance with results generated from said at least part of a navigation query" and "in response to one or more deficiencies encountered during the step of constructing said at least part of a navigation query", respectively. Support for these claims can be found in Applicants' specification, page 17, line 7 to page 19, line 9. However, support for these claims may also exist in other sections of Applicants' application.

In brief, Applicants' invention allows the system to present a non-spoken modality of interaction to the user based upon the results generated by performing the partial navigation query. For example, the system evaluates the results (e.g., a short

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list of choices) generated by the partial navigation query, and may realize that additional user input is necessary. At this point, the system elects to interact with the user in a non-spoken modality, e.g., presenting the short list of choices on a display according to results generated.

Alternatively, the system may evaluate the navigation query itself, (i.e., without performing the navigation query) and may realize that additional user input is necessary to fully construct the navigation query. Based on the deficiencies encountered, the system will elect to interact with the user in a non-spoken modality. These approaches will allow the user to quickly refine the navigation query, thereby providing a sense of progress to the user.

For the reasons presented above, Applicants submit that independent claims 182 and 185 and dependent claims 183-184 and 186-187 are also patentable over the cited references. Since claims 182-187 are supported by Applicants' specification, no new matter is introduced.

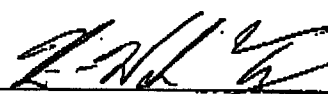
Conclusion

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final office action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

8/5/02


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Appendix

(Marked-up version of amended claims)

[1] 56. (Twice Amended) A method for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

[2] 57. (Amended) The method of claim [1] 56, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and a linguistic parser.

[3] 58. (Amended) The method of claim [1] 56, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

[4] 59. (Amended) The method of claim [3] 58, wherein the step of extracting the input template includes dynamically scraping the online scripted interface.



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[5] 60. (Amended) The method of claim [1] 56, wherein the navigation query is constructed in the format of a database query language.

[6] 61. (Amended) The method of claim [1] 56, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

[7] 62. (Amended) The method of claim [1] 56, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

[8] 63. (Amended) The method of claim [1] 56, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

[9] 64. (Amended) The method of claim [8] 63, wherein the deficiencies include unresolved words of the spoken request.

[10] 65. (Amended) The method of claim [8] 63, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

[11] 66. (Amended) The method of claim [1] 56, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

[12] 67. (Amended) The method of claim [11] 66, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

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[13] 68. (Amended) The method of claim [11] 66, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[14] 69. (Amended) The method of claim [1] 56, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

[15] 70. (Amended) The method of claim [1] 56, wherein the step of soliciting the additional input includes presenting a menu to the user on the client device of the user.

[16] 71. (Amended) The method of claim [1] 56, wherein the step of soliciting the additional input includes presenting a textual request for the additional input.

[17] 72. (Amended) The method of claim [1] 56, wherein the step of soliciting the additional input includes an audible request for the additional input.

[18] 73. (Amended) The method of claim [1] 56, wherein the step of soliciting the additional input includes presenting a list of portions of the electronic data source that match the navigational query.

[19] 74. (Amended) The method of claim [1] 56, wherein additional input received from the user is at least partially speech based.

[20] 75. (Amended) The method of claim [1] 56, wherein additional input received from the user includes no spoken input.

[21] 76. (Amended) The method of claim [1] 56, wherein steps (d)-(e) are repeated until the navigational query is deemed adequate.

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[22] 77. (Amended) The method of claim [1] 56, wherein the input modality of step (d) includes selecting from a displayed option menu.

[23] 78. (Amended) The method of claim [22] 77, wherein the act of selecting from the displayed option menu is performed by speaking.

[24] 79. (Amended) The method of claim [1] 56, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

[25] 80. (Amended) The method of claim [1] 56, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

[26] 81. (Amended) The method of claim [1] 56, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

[27] 82. (Twice amended) A system for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

(a) a portable microphone operable to receive a spoken request for desired information from the user;

(b) language processing logic, operable to render an interpretation of the spoken request;

(c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken request;

(d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;

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(e) query refining logic, operable to refine the navigation query, based upon the additional input;

(f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and

(g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

[28] 83. (Amended) The system of claim [27] 82, wherein the language processing logic includes speech recognition logic and an linguistic parsing logic for deriving linguistic information.

[29] 84. (Amended) The system of claim [27] 82, wherein the language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

[30] 85. (Amended) The system of claim [29] 84, wherein the language processing logic dynamically scrapes the online scripted interface.

[31] 86. (Amended) The system of claim [27] 82, wherein the query construction logic constructs the query in the format of a database query language.

[32] 87. (Amended) The system of claim [27] 82, wherein at least a portion of the language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

[33] 88. (Amended) The system of claim [27] 82, wherein at least a portion of the language processing logic is hosted on a network computing device located remotely



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from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

[34] 89. (Amended) The system of claim [27] 82, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

[35] 90. (Amended) The system of claim [34] 89, wherein the deficiencies include unresolved words of the spoken request.

[36] 91. (Amended) The system of claim [34] 89, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

[37] 92. (Amended) The system of claim [27] 82, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

[38] 93. (Amended) The system of claim [37] 92, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

[39] 94. (Amended) The system of claim [37] 92, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[40] 95. (Amended) The system of claim [27] 82, wherein the user interaction logic displays an option menu.

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[41] 96. (Amended) The system of claim [40] 95, wherein the act of selecting from the displayed option menu is performed by speaking.

[42] 97. (Amended) The system of claim [27] 82, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

[43] 98. (Amended) The system of claim [27] 82, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

[44] 99. (Amended) The system of claim [27] 82, wherein the display device receives data from the electronic data source on the network servers via a communications box.

[45] 100. (Amended) The system of claim [27] 82, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

[46] 101. (Twice amended) A computer program embodied on a computer readable medium for speech-based navigation of an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring

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the user to request said non-spoken modality;

(e) a code segment that refines the navigation query, based upon the additional input;

(f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and

(g) a code segment that transmits the selected portions of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

[47] 102. (Amended) The computer program of claim [46] 101, further comprising a code segment that derives linguistic information by using a speech recognition engine and a linguistic parser.

[48] 103. (Amended) The computer program of claim [46] 101, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

[49] 104. (Amended) The computer program of claim [48] 103, further comprising a code segment that dynamically scrapes the online scripted interface.

[50] 105. (Amended) The computer program of claim [46] 101, wherein the navigation query is constructed in the format of a database query language.

[51] 106. (Amended) The computer program of claim [46] 101, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

[52] 107. (Amended) The compute program of claim [46] 101, wherein the rendering of

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the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

[53] 108. (Amended) The computer program of claim [46] 101, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

[54] 109. (Amended) The computer program of claim [53] 108, wherein the deficiencies include unresolved words of the spoken request.

[55] 110. (Amended) The computer program of claim [53] 108, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken request.

[56] 111. (Amended) The computer program of claim [46] 101, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

[57] 112. (Amended) The computer program of claim [56] 111, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

[58] 113. (Amended) The computer program of claim [57] 112, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[59] 114. (Amended) The computer program of claim [46] 101, wherein code segment that solicits additional input displays an option menu.

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[60] 115. (Amended) The computer program of claim [59] 114, wherein the act of selecting from the displayed option menu is performed by speaking.

[61] 116. (Amended) The computer program of claim [46] 101, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

[62] 117. (Amended) The computer program of claim [46] 101, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken request.

[63] 118. (Amended) The computer program of claim [46] 101, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

[64] 119. (Amended) The computer program of claim [46] 101, wherein the additional input is solicited upon receiving a user-input statement that additional information is required.

[65] 120. (Amended) The computer program of claim [46] 101, wherein the code segment that solicits the additional input includes a code segment that presents a menu to the user on the client device of the user.

[66] 121. (Amended) The computer program of claim [46] 101, wherein the code segment that solicits the additional input includes a code segment that presents a textual request for the additional input.

[67] 122. (Amended) The computer program of claim [46] 101, wherein the code segment that solicits the additional input includes a code segment that produces an

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audible request for the additional input.

[68] 123. (Amended) The computer program of claim [46] 101, wherein the code segment that solicits the additional input includes a code segment that presents a list of portions of the electronic data source that match the navigational query.

[69] 124. (Amended) The computer program of claim [46] 101, wherein additional input received from the user is at least partially speech based.

[70] 125. (Amended) The computer program of claim [46] 101, wherein additional input received from the user includes no spoken input.

[71] 126. (Amended) The compute program of claim [46] 101, wherein code segments (d)-(e) are repeated until the navigational query is deemed adequate.

[72] 127. (Amended) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken natural language ("NL") request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and

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- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

[73] 128. (Amended) The method of claim [72] 127, wherein the step of rendering an interpretation further includes deriving linguistic information by using a speech recognition engine and an NL parser.

[74] 129. (Amended) The method of claim [72] 127, wherein the step of constructing a navigation query further includes the steps of extracting an input template for an online scripted interface to the data source, and using the input template to construct the navigation query.

[75] 130. (Amended) The method of claim [74] 129, wherein the step of extracting an input template includes dynamically scraping the online scripted interface.

[76] 131. (Amended) The method of claim [72] 127, wherein the navigation query is constructed in the format of a database query language.

[77] 132. (Amended) The method of claim [72] 127, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a computing device located locally with the user.

[78] 133. (Amended) The method of claim [72] 127, wherein the step of rendering an interpretation and the step of constructing a navigation query are performed, at least in part, on a network computing device located remotely from the user.

[79] 134. (Amended) The method of claim [72] 127, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered during the step of constructing a navigation query.

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[80] 135. (Amended) The method of claim [79] 134, wherein the deficiencies include unresolved words of the spoken NL request.

[81] 136. (Amended) The method of claim [79] 134, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

[82] 137. (Amended) The method of claim [72] 127, wherein the step of soliciting additional input is performed in response to one or more deficiencies encountered after a first navigation of the data source using the navigation query constructed in step (c).

[83] 138. (Amended) The method of claim [82] 137, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

[84] 139. (Amended) The method of claim [82] 137, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[85] 140. (Amended) The method of claim [72] 127, wherein the input modality of step (d) includes selecting from a displayed option menu.

[86] 141. (Amended) The method of claim [85] 140, wherein the act of selecting from the displayed option menu is performed by speaking.

[87] 142. (Amended) The method of claim [72] 127, wherein the method is performed with respect to a plurality of simultaneous users and corresponding client devices.

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[88] 143. (Amended) The method of claim [72] 127, further including the step of selecting the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

[89] 144. (Amended) The method of claim [72] 127, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

[90] 145. (Amended) A system for utilizing spoken natural language to navigate an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, the system comprising:

- (a) a portable microphone operable to receive a spoken natural language ("NL") request for desired information from the user;
- (b) spoken language processing logic, operable to render an interpretation of the spoken natural language request;
- (c) query construction logic, operable to construct a navigation query in response to the interpretation of the spoken natural language request;
- (d) user interaction logic, operable to solicit additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) query refining logic, operable to refine the navigation query, based upon the additional input;
- (f) navigation logic, operable to select a portion of the electronic data source using the navigation query; and
- (g) electronic communications infrastructure for transmitting the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

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[91] 146. (Amended) The system of claim [90] 145, wherein the spoken language processing logic includes speech recognition logic and an NL parsing logic for deriving linguistic information.

[92] 147. (Amended) The system of claim [90] 145, wherein the spoken language processing logic extracts an input template for an online scripted interface to the data source, and uses the input template to construct the navigation query.

[93] 148. (Amended) The system of claim [90] 145, wherein the spoken language processing logic dynamically scrapes the online scripted interface.

[94] 149. (Amended) The system of claim [90] 145, wherein the query construction logic constructs the query in the format of a database query language.

[95] 150. (Amended) The system of claim [90] 145, wherein at least a portion of the spoken language processing logic is hosted on a computing device located locally with the user, and wherein the portable microphone is electronically coupled to the local computing device.

[96] 151. (Amended) The system of claim [90] 145, wherein at least a portion of the spoken language processing logic is hosted on a network computing device located remotely from the user, and wherein the portable microphone sends data to the remote network computing device via the communications infrastructure.

[97] 152. (Amended) The system of claim [90] 145, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered during construction of the navigation query.

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[98] 153. (Amended) The system of claim [97] 152, wherein the deficiencies include unresolved words of the spoken NL request.

[99] 154. (Amended) The system of claim [97] 152, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

[100] 155. (Amended) The system of claim [90] 145, wherein the user interaction logic solicits additional input in response to one or more deficiencies encountered after a first navigation of the data source performed by the navigation logic.

[101] 156. (Amended) The system of claim [100] 155, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

[102] 157. (Amended) The system of claim [100] 155, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[103] 158. (Amended) The system of claim [100] 155, wherein the user interaction logic displays an option menu.

[104] 159. (Amended) The system of claim [103] 158, wherein the act of selecting from the displayed option menu is performed by speaking.

[105] 160. (Amended) The system of claim [90] 145, wherein the navigation logic selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

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[106] 161. (Amended) The system of claim [90] 145, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

[107] 162. (Amended) The system of claim [90] 145, wherein the display device receives data from the electronic data source on the network servers via a communications box.

[108] 163. (Amended) The system of claim [90] 145, wherein the electronic communication infrastructure is a two-way infrastructure and is selected from among one or more of the following group: {coaxial cable, DSL, satellite, wireless/cellular, fiber-optic}.

[109] 164. (Amended) A computer program embodied on a computer readable medium for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising:

- (a) a code segment that receives a spoken natural language ("NL") request for desired information from the user;
- (b) a code segment that renders an interpretation of the spoken natural language request;
- (c) a code segment that constructs at least part of a navigation query based upon the interpretation;
- (d) a code segment that solicits additional input from the user, including user interaction in a non-spoken modality different than the original request without requiring the user to request said non-spoken modality;
- (e) a code segment that refines the navigation query, based upon the additional inputs;

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- (f) a code segment that uses the refined navigation query to select a portion of the electronic data source; and
- (g) a code segment that transmits the selected portion of the electronic data source from the network server to a primarily stationary, display device located locally with the user.

[110] 165. (Amended) The computer program of claim [109] 164, further comprising a code segment that derives linguistic information by using a speech recognition engine and an NL parser.

[111] 166. (Amended) The computer program of claim [109] 164, further comprising a code segment that extract an input template for an online scripted interface to the data source, and a code segment that uses the input template to construct the navigation query.

[112] 167. (Amended) The computer program of claim [111] 166, further comprising a code segment that dynamically scrapes the online scripted interface.

[113] 168. (Amended) The computer program of claim [109] 164, wherein the navigation query is constructed in the format of a database query language.

[114] 169. (Amended) The computer program of claim [109] 164, wherein rendering of the interpretation and the construction of the navigation query are performed, at least in part, on a computing device located locally with the user.

[115] 170. (Amended) The computer program of claim [109] 164, wherein the rendering of the interpretation and the construction of a navigation query are performed, at least in part, on a network computing device located remotely from the user.

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[116] 171. (Amended) The computer program of claim [109] 164, wherein code segment that solicits additional input solicits the additional input in response to one or more deficiencies encountered during the constructing of the navigation query.

[117] 172. (Amended) The computer program of claim [116] 171, wherein the deficiencies include unresolved words of the spoken NL request.

[118] 173. (Amended) The computer program of claim [116] 171, wherein the deficiencies include one or more required elements of the navigational query not determinable from the interpretation of the spoken NL request.

[119] 174. (Amended) The computer program of claim [109] 164, wherein the code segment that solicits the additional input solicits the additional input in response to one or more deficiencies encountered after a first navigation of the data source.

[120] 175. (Amended) The computer program of claim [119] 174, wherein the deficiencies include existence of more than one data record within the data source responsive to the navigation query.

[121] 176. (Amended) The computer program of claim [119] 174, wherein the deficiencies include failure to identify a single data record within the data source responsive to the navigation query.

[122] 177. (Amended) The computer program of claim [109] 164, wherein code segment that solicits additional input displays an option menu.

[123] 178. (Amended) The computer program of claim [122] 177, wherein the act of selecting from the displayed option menu is performed by speaking.

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[124] 179. (Amended) The computer program of claim [109] 164, wherein the code segments of the computer program operate with respect to a plurality of simultaneous users and corresponding client devices.

[125] 180. (Amended) The computer program of claim [109] 164, further comprising a code segment that selects the data source from among a plurality of candidate electronic data sources, in response to the interpretation of the spoken NL request.

[126] 181. (Amended) The computer program of claim [109] 164, wherein the electronic data source stores multimedia content including at least one of video content and audio content.

182. (New) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken natural language ("NL") request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request, in accordance with results generated from said at least part of a navigation query;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

183. (New) The method of claim 182, wherein the input modality of step (d) includes

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selecting from a displayed option menu.

184. (New) The method of claim 183, wherein the act of selecting from the displayed option menu is performed by speaking.

185. (New) A method for utilizing spoken natural language for navigating an electronic data source, the electronic data source being located at one or more network servers located remotely from a user, comprising the steps of:

- (a) receiving a spoken natural language ("NL") request for desired information from the user;
- (b) rendering an interpretation of the spoken request;
- (c) constructing at least part of a navigation query based upon the interpretation;
- (d) soliciting additional input from the user, including user interaction in a non-spoken modality different than the original request, in response to one or more deficiencies encountered during the step of constructing said at least part of a navigation query;
- (e) refining the navigation query, based upon the additional input;
- (f) using the refined navigation query to select a portion of the electronic data source; and
- (g) transmitting the selected portion of the electronic data source from the network server to a client device of the user.

186. (New) The method of claim 185, wherein the input modality of step (d) includes selecting from a displayed option menu.

187. (New) The method of claim 186, wherein the act of selecting from the displayed option menu is performed by speaking.

D

TELEFAX COVER SHEET

MOSER, PATTERSON & SHERIDAN, LLP
ATTORNEYS AT LAW
595 SHREWSBURY AVENUE
FIRST FLOOR
SHREWSBURY, NJ 07702
TELEPHONE (732) 530-9404
TELEFAX (732) 530-9808

THIS TELEFAX MESSAGE IS ADDRESSED TO THE PERSON OR COMPANY LISTED BELOW.
IF IT WAS SENT OR RECEIVED INCORRECTLY, OR YOU ARE NOT THE INTENDED
RECIPIENT, PLEASE TAKE NOTICE THAT THIS MESSAGE MAY CONTAIN PRIVILEGED OR
CONFIDENTIAL MATERIAL, AND YOUR DUE REGARD FOR THIS INFORMATION IS
NECESSARY. YOU MAY ARRANGE TO RETURN THIS MATERIAL BY CALLING THE FIRM
LISTED ABOVE AT (732) 530-9404

THIS MESSAGE HAS 51 PAGES INCLUDING THIS SHEET

TO: Assistant Commissioner of Patents
FAX NO.: 703-746-7239
FROM: Kin-Wah Tong
DATE: August 5, 2002
MATTER: Serial No. 09/524,095 Filed: March 13, 2000
DOCKET NO.: SRI 1P037
APPLICANT: HALVERSON, et al

The following has been received in the U.S. Patent and Trademark Office on the date of this facsimile:

- Petition
Disclosure Statement & PTO-1449
Priority Document
Drawings (sheets) informal
X Response Under 37 CFR 1.111
X Transmittal Letter (2 copies)
Fee Transmittal (2 copies)
Deposit Account Transaction
X Facsimile Transmission Certificate dated AUGUST 5, 2002

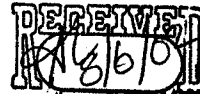
CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8

I hereby certify that this correspondence is being transmitted by facsimile to the Assistant Commissioner for Patents, Washington, DC 20231 on AUGUST 5, 2002, Facsimile No. 703-746-7239

Laura E. Crater
Name of person signing this certificate

Signature and date
AUGUST 5, 2002

Official



Please type a plus sign (+) inside this box →

Approved for use through 10/31/2002. OMB 0851-0031

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

Under the Paperwork Reduction Act of 1996, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/524,095	
	Filing Date	March 13, 2000	
	First Named Inventor	HALVERSON	
	Group Art Unit	2155	
	Examiner Name	F. BACKER	
Total Number of Pages in This Submission	9	Attorney Docket Number	SRI 1 P 037

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks	Please charge the \$138 additional claim fee (6 total claims at \$9 each; 2 independent claims at \$42 each) and any other fees due to Applicants' Attorneys' Deposit Account No. 20-0782. A duplicate copy of this transmittal is enclosed to facilitate the charge.	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	KIN-WAH TONG, REG. NO. 39,400
Signature	
Date	August 5, 2002

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

D

PTO/SB/21 (08-00)

Please type a plus sign (+) inside this box →

Approved for use through 10/31/2002. 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 displays a valid OMB control number.

TRANSMITTAL FORM <small>(to be used for all correspondence after initial filing)</small>	Application Number	09/524,095	
	Filing Date	March 13, 2000	
	First Named Inventor	HALVERSON	
	Group Art Unit	2155	
	Examiner Name	F. BACKER	
Total Number of Pages in This Submission	9	Attorney Docket Number	SRI 1 P 037

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks	Please charge the \$138 additional claim fee (6 total claims at \$9 each; 2 independent claims at \$42 each) and any other fees due to Applicants' Attorneys' Deposit Account No. 20-0782. A duplicate copy of this transmittal is enclosed to facilitate the charge.	

ED
 AUG - 5 2002
 Technology Center 2100

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	KIN-WAH TONG, REG. NO. 39,400
Signature	
Date	August 5, 2002

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

D

Notice of Allowability

Application No.

09/524,095

Examiner

Firmin Backer

Applicant(s)

HALVERSON ET AL.

Art Unit

3621

-- 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 August 7th, 2002.
- 2. The allowed claim(s) is/are 56-187.
- 3. The drawings filed on _____ are accepted by the Examiner.
- 4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - 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: _____.
- 5. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) The translation of the foreign language provisional application has been received.
- 6. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

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.**

- 7. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
- 8. CORRECTED DRAWINGS must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No. _____.
 - (b) including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

- 9. 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 Notice of Informal Patent Application (PTO-152)
- 3 Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 4 Interview Summary (PTO-413), Paper No. _____.
- 5 Information Disclosure Statements (PTO-1449), Paper No. 13.
- 6 Examiner's Amendment/Comment
- 7 Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 8 Examiner's Statement of Reasons for Allowance
- 9 Other

Response to Amendment

This is in response to an amendment file on August 7th, 2002. Claims 56, 82 and 101 have been amended and claims 127-187 have been added. Claims 56-187 are pending in the letter.

Allowable Subject Matter

1. Claims 56-187 are allowed.
2. The following is an examiner's statement of reasons for allowance:
 - a. Applicants teach an inventive concept for navigating network-based electronic data sources in response to spoken natural language input request. Applicants' inventive concept is novel and innovative in the sense that upon emerging of error or ambiguities in the interpretation of the spoken natural language, the system solicits additional input for the user in non-spoken modality that is different from the original request without requiring the user to request the non-spoken modality.

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."

Application/Control Number: 09/524,095

Page 3

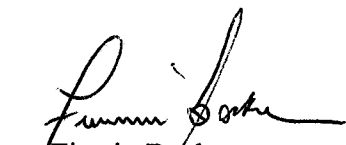
Art Unit: 3621

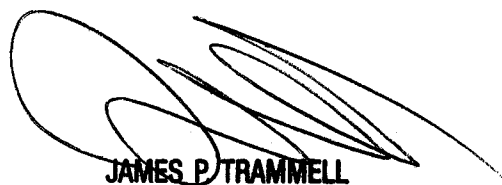
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is (703) 305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on (703) 305-9768. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


Firmin Backer
November 21, 2002


JAMES P. TRAMMELL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

#31

7590 12/16/2002

PERKINS COIE LLP
101 JEFFERSON DRIVE
MENLO PARK, CA 94025-1114

EXAMINER

BACKER, FIRMIN

Table with 2 columns: ART UNIT, CLASS-SUBCLASS. Values: 3621, 709-218000

DATE MAILED: 12/16/2002

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Values: 09/524,095, 03/13/2000, Christine Halverson, SR11P037, 6294

TITLE OF INVENTION: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK

Table with 6 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE, PUBLICATION FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, YES, \$640, \$0, \$640, 03/17/2003

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 REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
[] Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. 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.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Box ISSUE FEE**
Commissioner for Patents
Washington, D.C. 20231
Fax (703)746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 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: Legibly mark-up with any corrections or use Block 1)
 7590 12/16/2002

PERKINS COIE LLP
101 JEFFERSON DRIVE
MENLO PARK, CA 94025-1114

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 Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRIIP037	6294

TITLE OF INVENTION: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$640	\$0	\$640	03/17/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
BACKER, FIRMIN	3621	709-218000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (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. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.
 (A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) individual corporation or other private group entity government

4a. The following fee(s) are enclosed:
 Issue Fee
 Publication Fee
 Advance Order - # of Copies _____

4b. Payment of Fee(s):
 A check in the amount of the fee(s) is enclosed.
 Payment by credit card. Form PTO-2038 is attached.
 The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) _____ (Date) _____

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRI1P037	6294
	7590	12/16/2002	EXAMINER	
PERKINS COIE LLP 101 JEFFERSON DRIVE MENLO PARK, CA 94025-1114 UNITED STATES			BACKER, FIRMIN	
			ART UNIT	PAPER NUMBER
			3621	

DATE MAILED: 12/16/2002

Determination of Patent Term Extension under 35 U.S.C. 154 (b)
(application filed after June 7, 1995 but prior to May 29, 2000)

The patent term extension is 0 days. Any patent to issue from the above identified application will include an indication of the 0 day extension on the front page.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term extension 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) system. (<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 (703)305-1383.



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

09/524,095

03/13/2000

Christine Halverson

SRI1P037

6294

7590

12/16/2002

EXAMINER

BACKER, FIRMIN

PERKINS COIE LLP
101 JEFFERSON DRIVE
MENLO PARK, CA 94025-1114
UNITED STATES

ART UNIT

PAPER NUMBER

3621

DATE MAILED: 12/16/2002

Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003: Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: http://www.uspto.gov/main/howtofees.htm.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

09/524,095

(2)

W



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE
PATENT APPLICATION

#32
CA
4-25-03

Applicant: Halverson et al.

Case: SRI1P037

Serial No.: 09/524,095

Filed: March 13, 2000

Group Art Unit: 3621

Examiner: Firmin Backer

Title: **NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
FEEDBACK**

ASSISTANT COMMISSIONER FOR PATENTS
Box Issue Fee
Washington, D. C. 20231

S I R:

Comments on Statement of Reasons for Allowance

This response addresses the Notice of Allowance dated December 16, 2002.

REMARKS

Applicants' representative would like to thank Examiner Firmin Backer for kindly allowing claims 56-187 of the present application. However, Applicants have reviewed the Examiner's Reasons for Allowance and have the following comments:

1. The Examiner stated that:

"Applicants teach an inventive concept for navigating network-based electronic data sources in response to spoken natural language input request. Applicants' inventive concept [if] is novel and innovative in the sense that upon emerging of error or ambiguities in the interpretation of the spoken natural language, the system solicits additional input for the user in non-spoken modality that is different from the original request without requiring the user to request the non-spoken modality." (Emphasis and correction added)

09/524,095

It appears that there is a typographical error in the second sentence where the Examiner used the term "if" instead of "is". It is Applicants' interpretation that the Examiner intended to use the term "is". If the Examiner disagrees, it is respectfully requested that the Examiner resolve the ambiguity of the sentence.

Conclusion

Thus, the Applicants submit the present comments solely to clarify various issues raised by the Notice of Allowance. Once again, Applicants' representative would like to thank Firmin Backer for kindly allowing claims 56-187 of the present application.

If, however, the Examiner believes that there are any unresolved issues, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

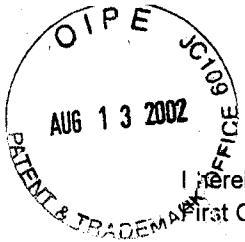
Respectfully submitted,



Kin-Wah Tong, Attorney
Reg. No. 39,400
(732) 530-9404

3/17/03

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
First Floor, Suite 100
Shrewsbury, New Jersey 07702



Attorney Docket # 59501-8037 US01

Handwritten notes: 2/5 S, # 3303, 5-2-03, mel

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Date: August 6, 2002

By: Jamie L. Hughes
Jamie L. Hughes

Match and Return

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Halverson

APPLICATION No.: 09/524,095

FILED: 03/13/2000

FOR: NAVIGATING NETWORK-BASED
ELECTRONIC INFORMATION USING
SPOKEN NATURAL LANGUAGE INPUT
WITH MULTIMODAL ERROR FEEDBACK

EXAMINER: BACKER

ART UNIT: 2155

RECEIVED
AUG 15 2002
Technology Center 2100

Information Disclosure Statement After First Office Action but Before Final Action or Notice of Allowance – 37 CFR 1.97(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

1. Timing of Submission

The information transmitted herewith is being filed *after* three months of the filing date of this application or after the mailing date of the first Office action on the merits, whichever occurred last, but *before* the mailing date of either a final action under 37 CFR 1.113 or a Notice of Allowance under 37 CFR 1.311, whichever occurs first. The references listed on the enclosed Form PTO/SB/08A may be material to the examination of this application; the Examiner is requested to make them of record in the application.

08/14/2002 SMINASS1 00000008 502207 09524095
01 FC:126 180.00 CH

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2. Cited Information

- Copies of the following references are enclosed:
 - All cited references

3. Effect of Information Disclosure Statement (37 CFR 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

4. Fee Payment (37 CFR 1.97(c)) or Certification (37 CFR 1.97(e))

- Applicant elects to pay the fee under 37 CFR 1.17(p) \$180.00.
 - Check enclosed for \$
 - Please charge the above fee(s) to Deposit Account No. 50-2207 this paper is provided in triplicate.

Date:

6 Aug 2002

Respectfully submitted,
Perkins Coie LLP



Brian R. Coleman
Registration No. 39,145

Correspondence Address:

Customer No. 22918
Perkins Coie LLP
P.O. Box 2168
Menlo Park, California 94026
(650) 838-4300

O I P E
AUG 13 2002
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
Form PTO-1449 (Modified)
(Use several sheets if necessary)

COMPLE		KNOWN
Application Number	09/542,092	
Confirmation Number		
Filing Date	March 13, 2000	
First Named Inventor	Halverson	
Group Art Unit	2155	
Examiner Name	Backer	
Attorney Docket No.	59501-8037.US01	

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Sheet 1 of 3

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear
		NUMBER	Kind Code (if known)			
F.b	1	5,197,005		Schwartz et al.	3/23/93	
	2	5,386,556		Hedin et al.	1/31/95	
	3	5,434,777		Luciw	7/18/95	
	4	5,519,608		Kupiec	5/21/96	
	5	5,608,624		Luciw	3/4/97	
	6	5,721,938		Stuckey	2/24/98	
	7	5,729,659		Potteh	3/17/98	
	8	5,748,974		Johnson	5/5/98	
	9	5,774,859		Houser et al.	6/30/98	
F.b	10	5,794,050		Dahlgren et al.	8/14/98	

FOREIGN PATENT DOCUMENTS

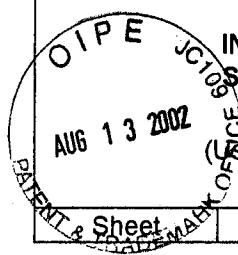
Examiner Initial	Cite No.	Foreign Patent or Application			Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear	T
		Office	NUMBER	Kind Code (if known)				
F.b	11	WO	00/11869		Ellis et al.	3/2/00		
F.b	12	EP	0 803 826 A2		Lindblad et al.	10/29/97		

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	T
F.b	13	Dowding, John et al., "Gemini: A Natural Language System For Spoken-Language Understanding", SRI International	
	14	http://www.ai.sri.com/~oaa/infowiz.html , "InfoWiz: An Animated Voice Interactive Information System, May 8, 2000	
	15	Dowding, John, "Interleaving Syntax and Semantics in an Efficient Bottom-up Parser", SRI International	
F.b	16	Moore, Robert et al., "Combining Linguistic and Statistical Knowledge Sources in a Natural-Language Processing for ATIS", SRI International	

EXAMINER *[Signature]* DATE CONSIDERED 8/30/02

*EXAMINER Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).



INFORMATION DISCLOSURE STATEMENT BY APPLICANT
 Form PTO-1449 (Modified)
 (Use several sheets if necessary)

COMPLETE IF KNOWN

Application Number	09/342,095
Confirmation Number	
Filing Date	March 13, 2000
First Named Inventor	Halverson
Group Art Unit	2155
Examiner Name	Backer
Attorney Docket No.	59501-8037.US01

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Sheet 2 of 3

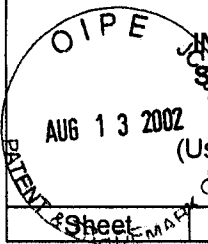
U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear
		NUMBER	Kind Code (if known)			
F.H.	17	5,802,526		Fawcett et al.	9/1/98	
	18	6,192,338		Haszto et al.	2/2001	
	19	6,173,279		Levin et al.	1/2001	
	20	5,805,775		Eberman et al.	9/8/98	
	21	5,855,002		Armstrong	12/29/98	
	22	5,890,123		Brown et al.	3/30/99	
	23	5,963,940		Liddy et al.	10/5/99	
	24	6,003,072		Gerritsen et al.	12/14/99	
	25	6,012,030		French-St. George et al.	1/4/00	
	26	6,026,388		Liddy et al.	2/15/00	
	27	6,080,202		Strickland et al.	6/27/00	
F.H.	28	6,021,427		Spagna et al.	1/1/00	

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

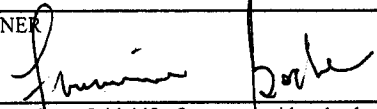
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	T
F.H.	29	Stent, Amanda et al., "The CommandTalk Spoken Dialog System", SRI International	
	30	Moore, Robert et al., "CommandTalk: A Spoken-Language Interface for Battlefield Simulations:", October 23, 1997, SRI International	
	31	Dowding, John et al., "Interpreting Language in Context in CommandTalk", February 5, 1999, SRI International	
	32	Moran, Douglas B. et al., "Intelligent Agent-based User Interfaces", Article Intelligence center, SRI International	
F.H.	33	Martin, David L. et al., "Building Distributed Software Systems with the Open Agent Architecture"	

EXAMINER <i>[Signature]</i>	DATE CONSIDERED 8/30/02
*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).	

 <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT Form PTO-1449 (Modified) (Use several sheets if necessary)</p>	DELETE IF KNOWN		
	Application Number	6,42,095	
	Confirmation Number		
	Filing Date	March 13, 2000	
	First Named Inventor	Halverson	
	Group Art Unit	2155	
	Examiner Name	Backer	
Attorney Docket No.	59501-8037.US01		
Sheet	3	of	3

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear
		NUMBER	Kind Code (if known)			
F.B.	34	6,338,081		Furusawa et al.	1/8/02	
	35	6,144,989		Hodjat et al.	11/7/00	
F.B.	36	6,226,666		Chang et al.	5/1/01	

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	T
F.B.	37	Julia, Luc. et al., "Cooperative Agents and Recognition System (CARS) for Drivers and Passengers", SRI International	
	38	Moran, Douglas et al., "Multimodal User Interfaces in the Open Agent Architecture"	
	39	Cheyser, Adam et al., "Multimodal Maps: An Agent-based Approach", SRI International	
	40	Cutkosky, Mark R. et al., "An Experiment in Integrating Concurrent Engineering Systems"	
	41	Martin, David et al., "Development Tools for the Open Agent Architecture", The Practical Application of Intelligent Agents and Multi-Agent Technology (PAAM96), London, April 1996	
	42	Cheyser, Adam et al., "The Open Agent Architecture™", SRI International, AI center	
	43	Dejima, Inc., http://www.dejima.com/	
	44	Cohen, Philip et al., "An Open Agent Architecture", AAAI Spring Symposium, pp1-8, March 1994	
F.B.	45	Martin, David et al., "Information Brokering in an Agent Architecture", Proceeding of the 2 nd Int'l Conference on Practical Application of Intelligent Agents & Multi-Agent Technology, London, April 1997	

EXAMINER 	DATE CONSIDERED 8/30/02
*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).	



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#35m

In re application of: Halverson, et al.
 Serial No.: 09/524,095 Art Unit: 3621
 Filing Date: March 13, 2000 Examiner: Backer, Firmin
 For: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING
 SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR
 FEEDBACK
 Docket No. SR 4116-3

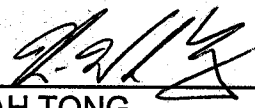
Assistant Commissioner for Patents
 Washington, D.C. 20231
 S I R:

SUBMISSION OF FORMAL DRAWINGS

The Applicants submit herewith 7 sheets of formal drawings (FIGS. 1 through 6), properly labeled, in connection with the above-captioned application. The Examiner is requested to substitute these formal drawings for the informal drawings previously submitted.

Respectfully submitted,

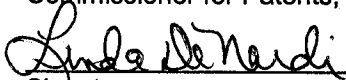
Dated: March 17, 2003


 KIN-WAH TONG
 Reg. No. 39,400
 (732) 530-9404

Moser, Patterson & Sheridan, LLP
 595 Shrewsbury Avenue
 Suite 100
 Shrewsbury, NJ 07702

CERTIFICATE OF MAILING under 37 C.F.R. 1.8(a)

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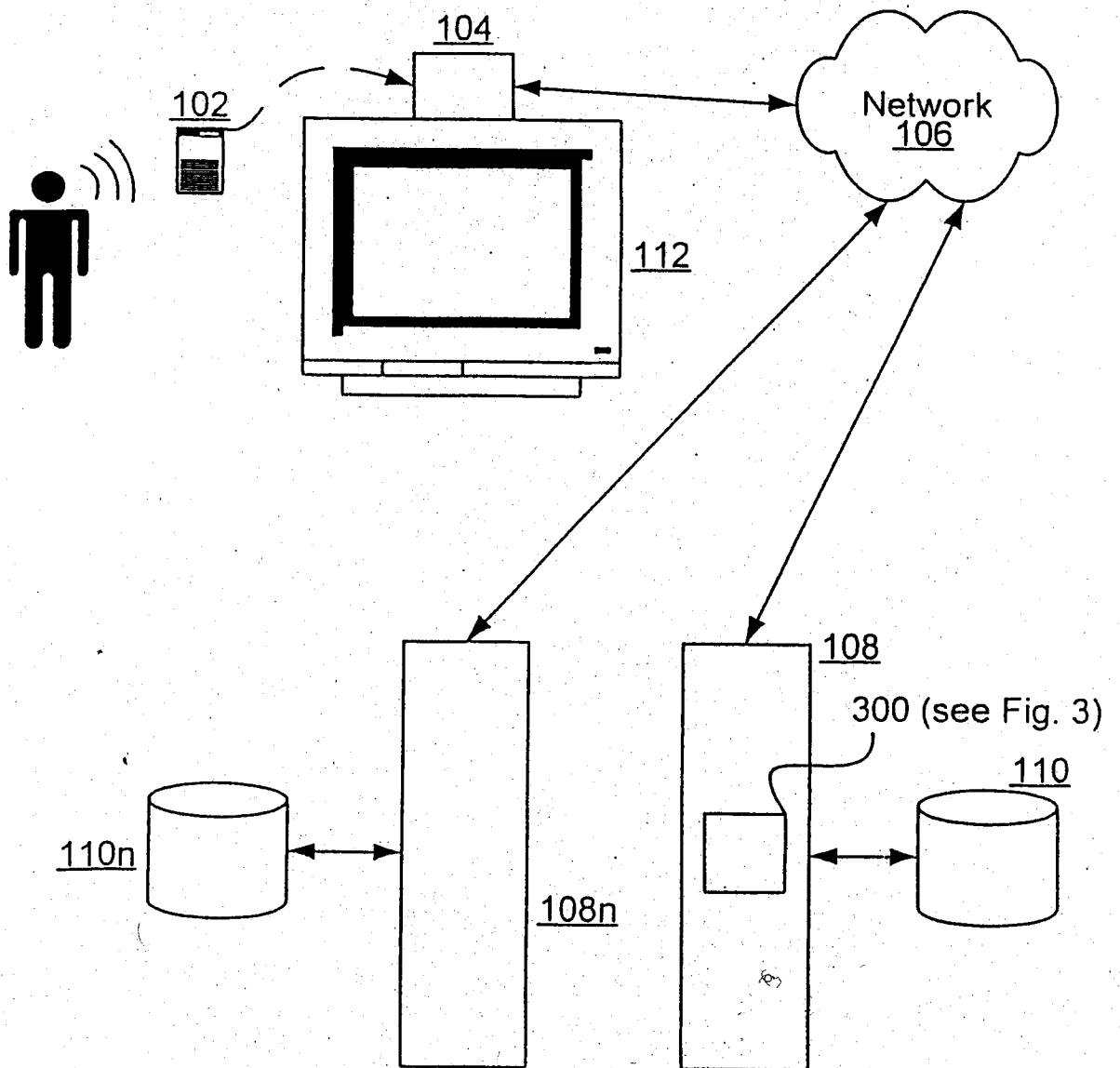


Fig. 1a

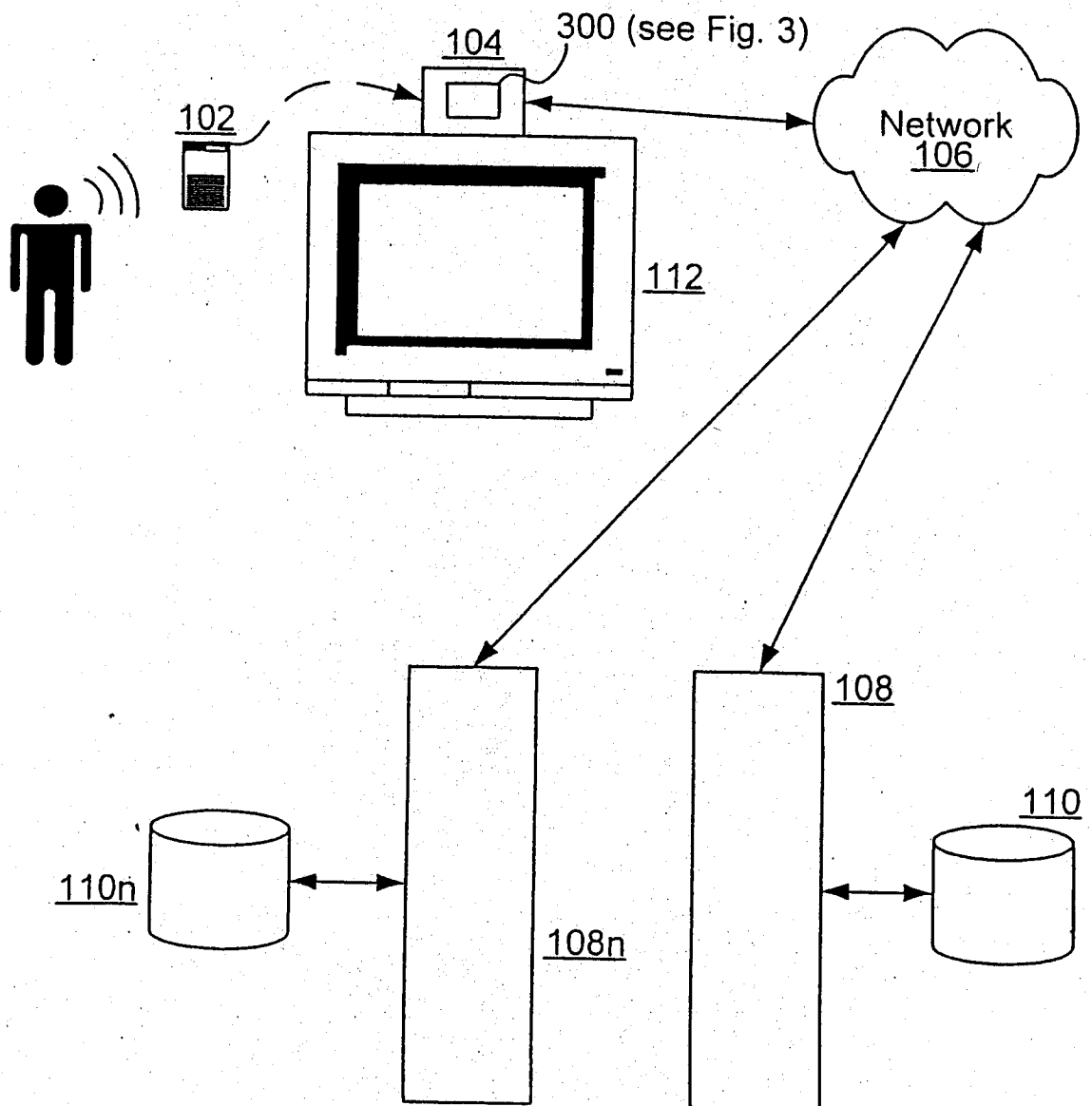
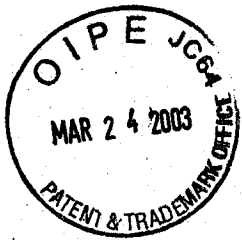


Fig. 1b



3/7

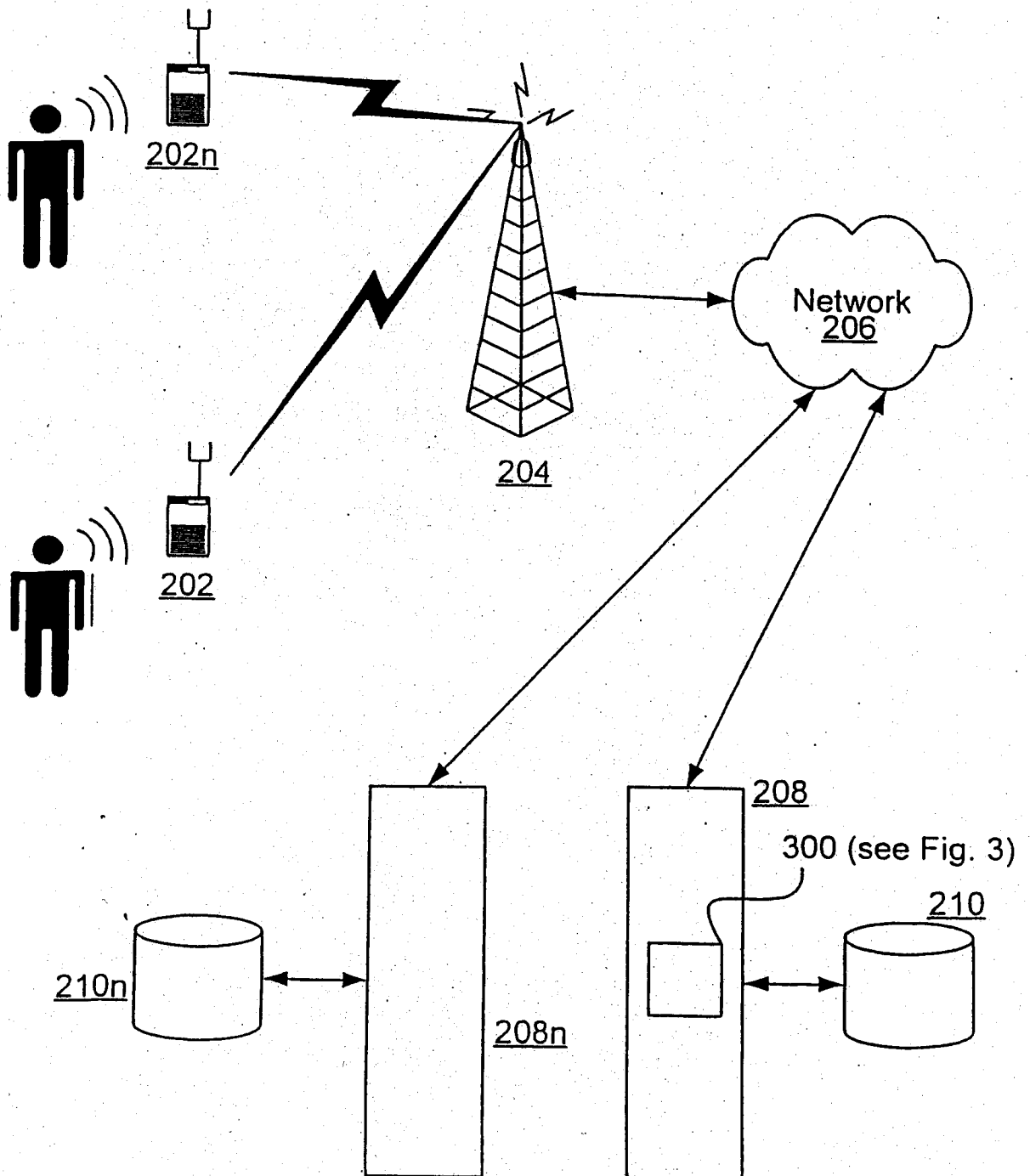
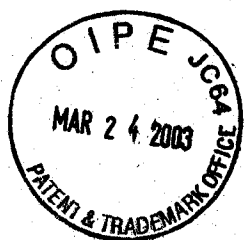


Fig. 2



REQUEST PROCESSING LOGIC 300

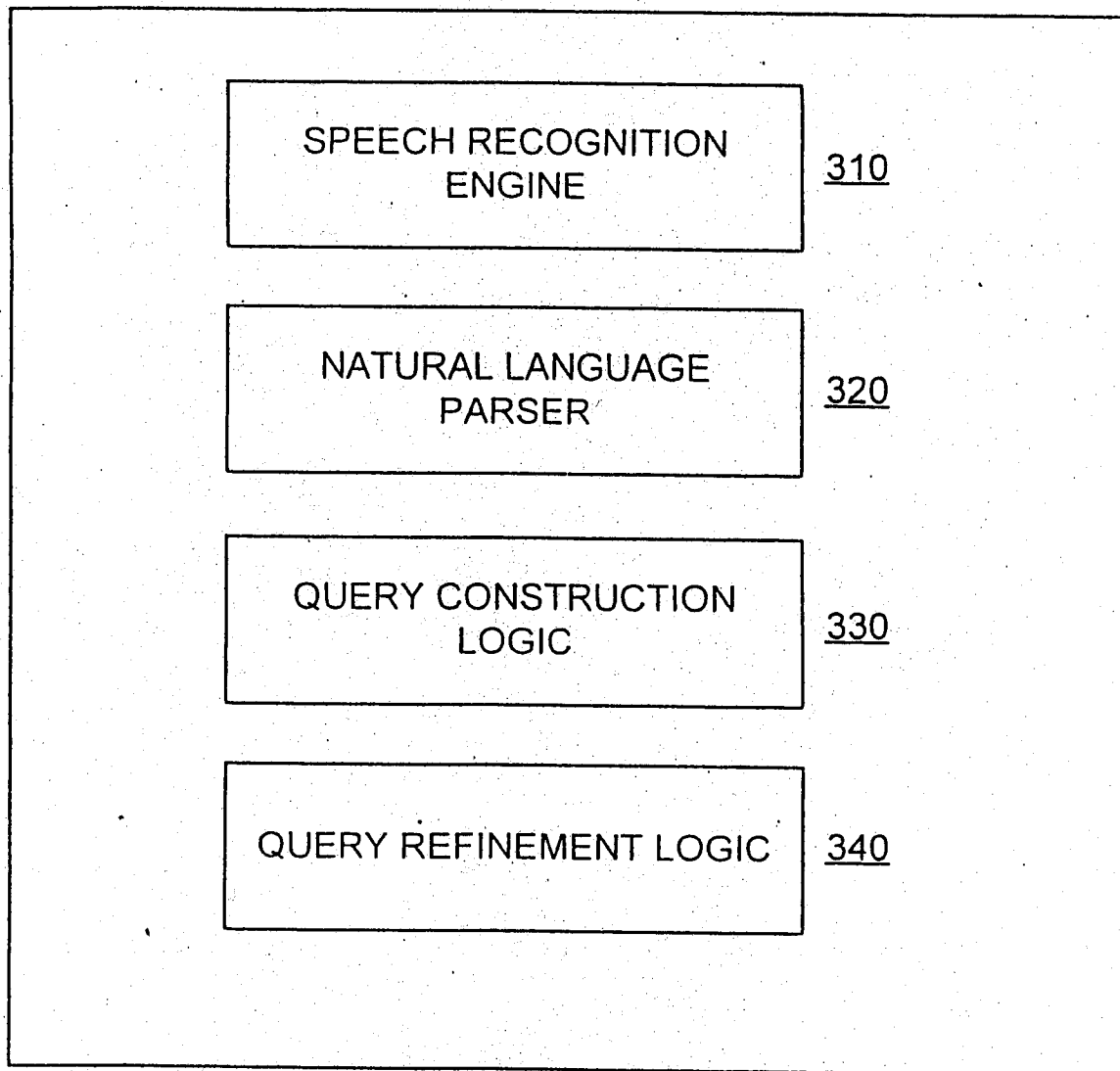


Fig. 3

5/7

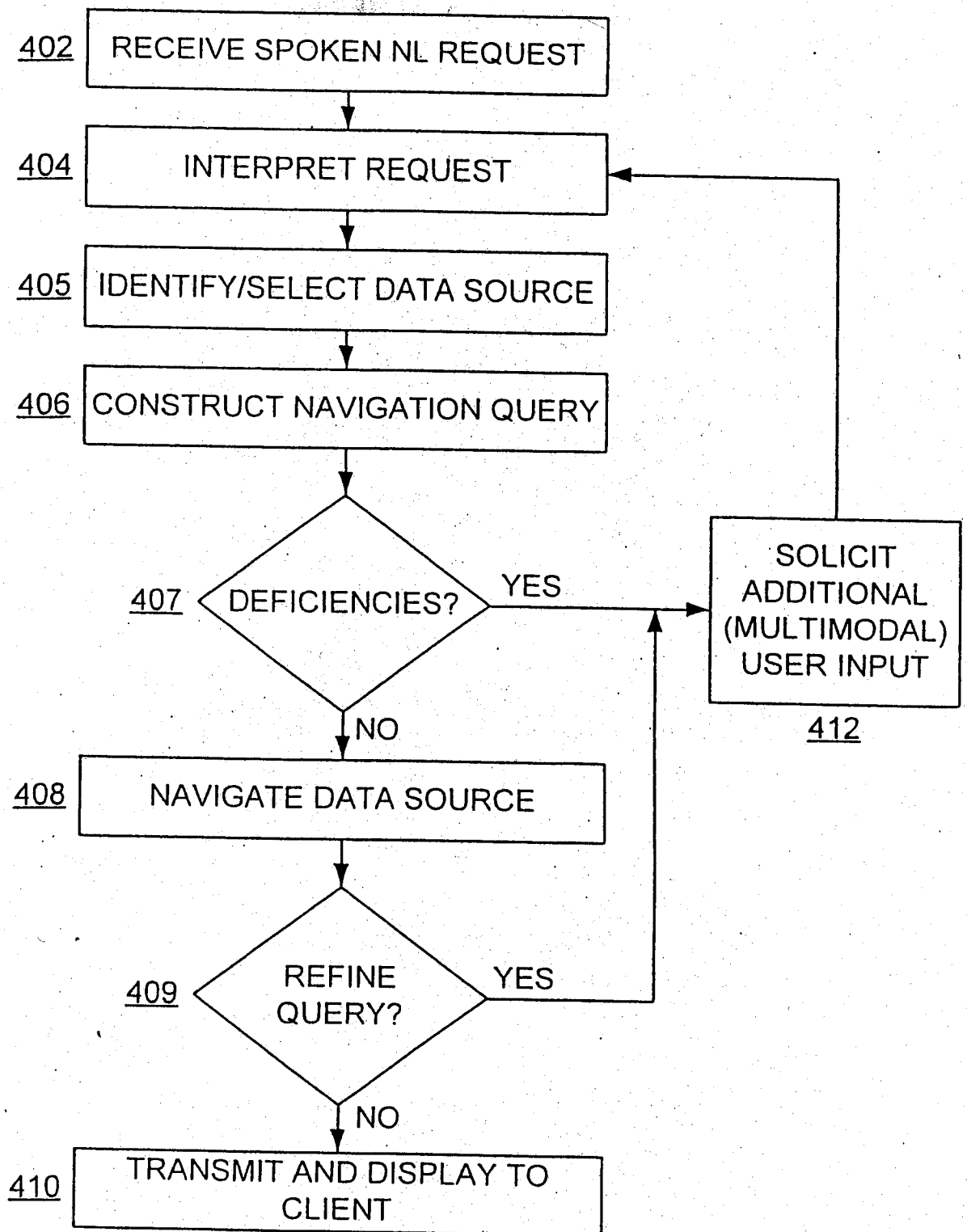


Fig. 4

Halverson, et al.

NAVIGATING . . . WORK-BASED ELECTRONIC INFORMATION USING SPOKEN
NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK

Serial No. 09/524,095 - SRI 4116-3/ KWT



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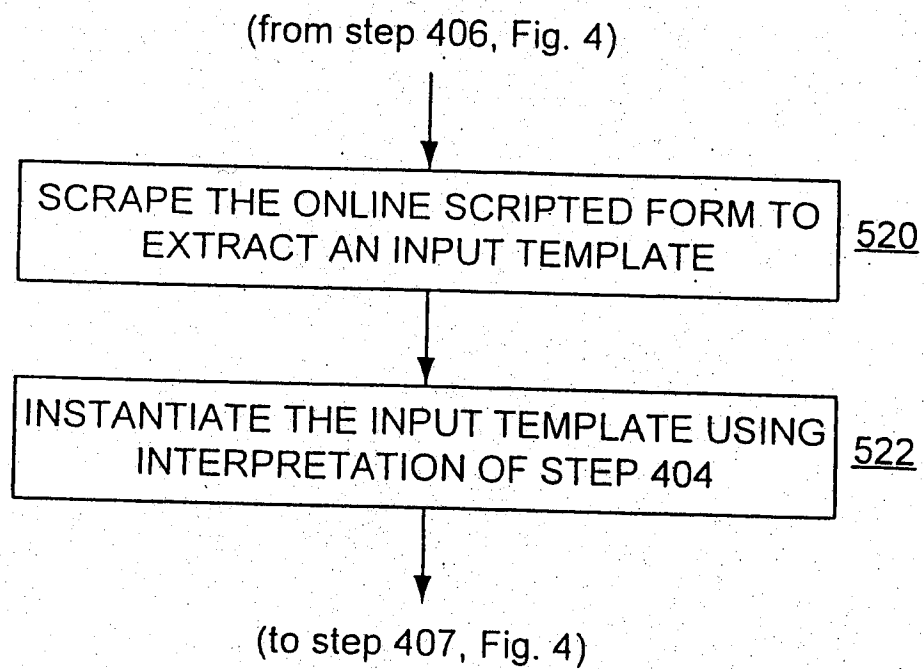


Fig. 5

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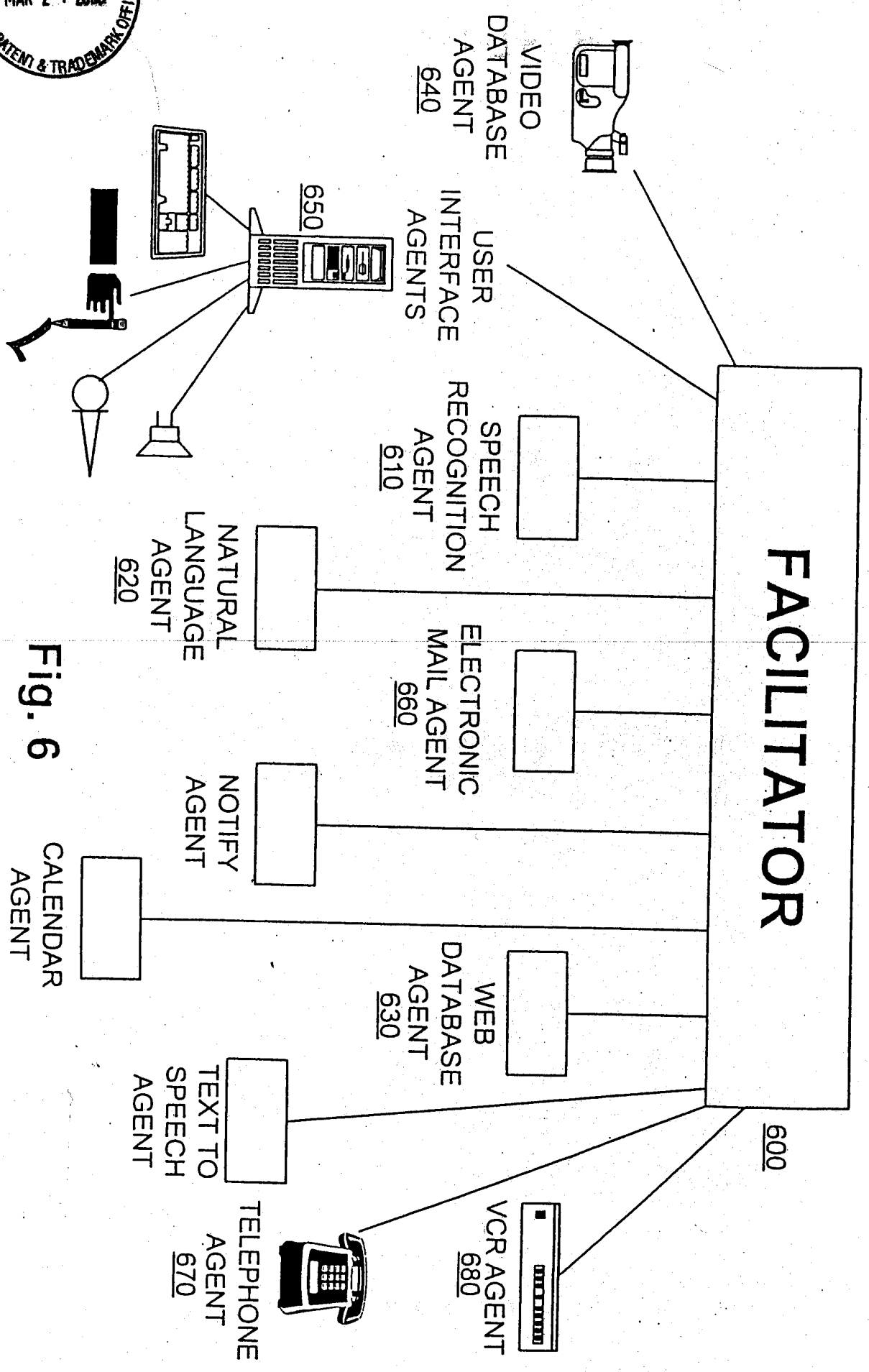
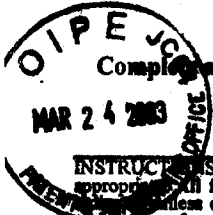


Fig. 6

cu

PART B - FEE(S) TRANSMITTAL



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7590 12/16/2002

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LINDA DENARDI (Depositor's name)
Linda Denardi (Signature)
MARCH 17, 2003 (Date)

03/28/2003 HMARZ12 00000050 200782 09524095
01 FC:2501 650.00 CH
02 FC:8001 3.00 CH

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,095	03/13/2000	Christine Halverson	SRI1P037	6294

TITLE OF INVENTION: NAVIGATING NETWORK-BASED ELECTRONIC INFORMATION USING SPOKEN NATURAL LANGUAGE INPUT WITH MULTIMODAL ERROR FEEDBACK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$640	\$0	\$640	03/17/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
BACKER, FIRMIN	3621	709-218000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (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.

Moser, Patterson & Sheridan, LLP.
Kin-Wah Tong, Esq.
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. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: SRI International, Inc.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): Menlo Park, CA

Please check the appropriate assignee category or categories (will not be printed on the patent) individual corporation or other private group entity government

4a. The following fee(s) are enclosed:

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 Publication Fee
 Advance Order - # of Copies 1

4b. Payment of Fee(s):

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Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) Kin-Wah Tong (Date) 3/17/03

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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MAINTENANCE FEE REMINDER

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Unless payment of the maintenance fee and the applicable surcharge is received in the USPTO within the six-month grace period, THE PATENT WILL EXPIRE AS OF THE END OF THE GRACE PERIOD. 35 U.S.C. 41(b).

The total payment due is the amount required on the date the fee is paid (and not necessarily the amount indicated below). All USPTO fees (including maintenance fees) are subject to change. Customers should refer to the USPTO Web site (www.uspto.gov) or call the Maintenance Fee Branch at 571-272-6500 for the most current fee amounts for the correct entity status before submitting payment. The total payment due indicated below is based on the entity status according to current Office records (shown below).

Timely payment of the total payment due is required in order to avoid expiration of the patent. A maintenance fee payment can be timely made using the certificate of mailing or transmission procedure set forth in 37 CFR 1.8.

PATENT FEE MAINT. U.S. PATENT APPL. PAY- TOTAL ATTORNEY
NUMBER AMT SURCHG NUMBER DATE DATE YEAR ENTITY? DUE DOCKET
NUMBER

[Redacted] 930 130 09524095 05/25/04 03/13/00 4 NO 1060 SR11P037

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NOTE: This notice was automatically generated based on the amount of time that elapsed since the date a patent was granted. It is possible that the patent term may have ended or been shortened due to a terminal disclaimer that was filed in the application. Also, for any patent that issued from an application filed on or after June 8, 1995 containing a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121, or 365(c), the patent term ends 20 years from the date on which the earliest such application was filed, unless the term was adjusted or extended under 35 U.S.C. 154 or 156. Patentee should determine the relevant patent term for a patent before paying the maintenance fee.

AO 120 (Rev. 3/04)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	--

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Delaware on the following Patents or Trademarks:

DOCKET NO. 16cv945-RGA	DATE FILED 10/13/2016	U.S. DISTRICT COURT DISTRICT OF DELAWARE
PLAINTIFF IPA Technologies, Inc.		DEFENDANT Acer America Corp.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA Technologies, Inc.
2 6,523,061	2/18/2003	IP A Technologies, Inc.
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT See attached Notice of Dismissal
--

CLERK JOHN A. CERINO, CLERK OF COURT	(BY) DEPUTY CLERK	DATE 10/28/2016
---	-------------------	--------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court District of Delaware on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 16cv00947	DATE FILED 10/13/2016	U.S. DISTRICT COURT District of Delaware
PLAINTIFF IPA Tech.		DEFENDANT Dell
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6742021		
2 6523061		
3		
4		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court District Court of Delaware on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 116cv00948	DATE FILED 10/13/2016	U.S. DISTRICT COURT District Court of Delaware
PLAINTIFF IPA Tech		DEFENDANT HP Inc
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6742021		
2 6523061		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 3/04)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Delaware on the following Patents or Trademarks:

DOCKET NO. 16cv949-RGA	DATE FILED 10/13/2016	U.S. DISTRICT COURT DISTRICT OF DELAWARE
PLAINTIFF IPA Technologies, Inc.		DEFENDANT Toshiba America, Inc., et al.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA Technologies, Inc.
2 6,523,061	2/18/2003	IP A Technologies, Inc.
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT See attached Notice of Dismissal
--

CLERK JOHN A. CERINO, CLERK OF COURT	(BY) DEPUTY CLERK	DATE 10/28/2016
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 3/04)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Delaware on the following Patents or Trademarks:

DOCKET NO. 16cv946-RGA	DATE FILED 10/13/2016	U.S. DISTRICT COURT DISTRICT OF DELAWARE
PLAINTIFF IPA Technologies, Inc.		DEFENDANT ASUS Computer Internationa, et al.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA Technologies, Inc.
2 6,523,061	2/18/2003	IP A Technologies, Inc.
3		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT See attached Notice of Dismissal
--

CLERK JOHN A. CERINO, CLERK OF COURT	(BY) DEPUTY CLERK	DATE 10/28/2016
---	-------------------	--------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 12/9/2016	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT ALCO ELECTRONICS LTD., ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	--

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 1/10/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT ZTE CORPORATION, ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 1/19/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT SONY CORPORATION, ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3 6,757,718	6/29/2004	IPA TECHNOLOGIES INC.
4		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 2/3/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT ACER INC., ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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DECISION/JUDGEMENT

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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO.	DATE FILED 2/3/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT ASUS COMPUTER INTERNATIONAL, ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO.	DATE FILED 2/3/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT LG ELECTRONICS INC., ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 3/17/2017	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF IPA TECHNOLOGIES INC.		DEFENDANT NVIDIA CORPORATION
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,742,021	5/25/2004	IPA TECHNOLOGIES INC.
2 6,523,061	2/18/2003	IPA TECHNOLOGIES INC.
3 6,757,718	6/29/2004	IPA TECHNOLOGIES INC.
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Claim		Date			
Final	Original				
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Claim		Date			
Final	Original				
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- SYMBOLS
- ✓ Rejected
 - Allowed
 - (Through numeral) Canceled
 - + Restricted
 - N Non-elected
 - I Interference
 - A Appeal
 - O Objected

101

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 29, 1999

Application or Docket Number
09/524095

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	55 minus 20= *	35
INDEPENDENT CLAIMS	3 minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT <i>N</i>		

SMALL ENTITY TYPE <input type="checkbox"/>		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
	345.00	OR		690.00
X\$ 9=		OR	X\$18=	630-
X39=		OR	X78=	-
+130=		OR	+260=	-
TOTAL		OR	TOTAL	1320-

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 71	Minus **	=
Independent	* 3	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 126	Minus ** 71	= 56
Independent	* 6	Minus *** 3	= 3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=	495	OR	X\$18=	
X39=	117	OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE	612	OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1)	(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 132	Minus ** 126	= 6
Independent	* 8	Minus *** 6	= 2
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=	54	OR	X\$18=	
X39=	84	OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE	138	OR	TOTAL ADDIT. 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 number found in the appropriate box in column 1.

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number

09/524,095

CLAIMS AS FILED - PART I

FOR	NUMBER FILED (Column 1)	NUMBER EXTRA (Column 2)
BASIC FEE		
TOTAL CLAIMS	minus 20 = *	
INDEPENDENT CLAIMS	minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT		

SMALL ENTITY TYPE OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
	\$355			\$740
X\$9=			X\$18=	
X40=			X84=	
+135=			280=	
TOTAL			TOTAL	740

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)
Total	*	Minus **	=
Independent	*	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$9=			X\$18=	
X40=			X84=	
+135=			280-	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)
Total	*	Minus **	=
Independent	*	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$9=			X\$18=	
X40=			X84	
+135=			+280=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT (Column 1)	HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)
Total	*	Minus **	=
Independent	*	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$9=			X\$18=	
X40=			X84	
+135=			+280	
TOTAL ADDIT. FEE			TOTAL ADDIT. 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 number found in the appropriate box in column 1.

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	SO	71058	3/21/02
O.I.P.E. CLASSIFIER	RSD		4-1-00
FORMALITY REVIEW		72476	5/12/02
RESPONSE FORMALITY REVIEW		72176	9/8/00

INDEX OF CLAIMS

- ✓ Rejected
- = Allowed
- (Through numeral)... Canceled
- ÷ Restricted
- N Non-elected
- I Interference
- A Appeal
- O Objected

Claim	Date
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If more than 150 claims or 10 actions
staple additional sheet here

SEARCHED

Class	Sub.	Date	Exmr.
709	218	4/6/01	F.B
707	5 4 102		
704	257 231		
709	218	11/21/02	F.B

SEARCH NOTES (INCLUDING SEARCH STRATEGY)

	Date	Exmr.
West SEARCH	4/6/01	F.B.
West SEARCH NPL SEARCH 264 on scene	4/28/02	F.B
West SEARCH NPL West	11/20/02 11/20/02 11/21/02	F.B

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
709	218	11/21/02	F.B
707	5 4	11	