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(71) Applicant: SRI INTERNATIONAL [US/US]; 333 Ravenswood Avenue, Menlo Park, CA 94025 (US).

(72) Inventors: APPELT, Douglas, E.; 425 Creekside Drive, Palo Alto, CA 94306 (US). ARNOLD, James, Frederick; 1484 Colorado Gulch, Helena, MT 59601 (US). BEAR, John, S.; 919 Colonel Way, Half Moon Bay, CA 94019 (US). HOBBS, Jerry, Robert; 1937 Alford Avenue, Los Altos, CA 94024 (US). ISRAEL, David, J.; 1961 Middlefield Road, Palo Alto, CA 94301 (US). KAMEYAMA, Megumi (deceased). MARTIN, David, L.; 167 Cronin Drive, Santa Clara, CA 95051 (US). MYERS, Karen, Louise; 165 Forest Avenue, #2A, Palo Alto, CA 94301 (US). RAVICHANDRAN, Gopalan; 1929 Crisanto Avenue, #1214, Mountain View, CA 94040 (US). STICKEL, Mark, Edward; 2368 Thompson Court, Mountain View, CA 94043 (US). TYSON, William, Mabry; 1345 Surise Court, Los Altos, CA 94024 (US).

- (74) Agent: ZILKA, Kevin, J.; Carlton, Fields, P.O.Box 721030, San Jose, CA 95172-1030 (US).
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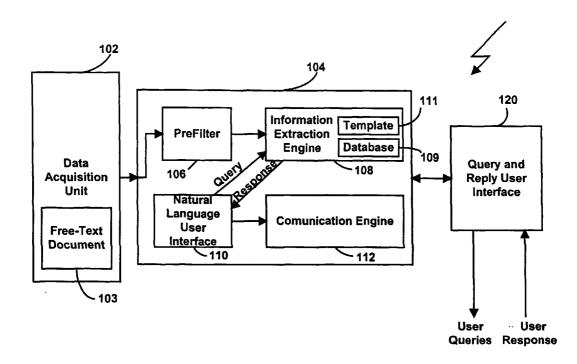
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(54) Title: INFORMATION RETRIEVAL BY NATURAL LANGUAGE QUERYING



(57) Abstract: A natural language information querying system includes an indexing facility configured to automatically generate indices of updated textual sources based on one or more predefined grammars and a database coupled to the indexing facility to store the indices for subsequent searching.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\label{lem:minimum} \begin{array}{ll} \mbox{Minimum documentation searched (classification system followed by classification symbols)} \\ \mbox{IPC 7} & \mbox{G06F} \end{array}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Υ	EP 0 609 517 A (IBM) 10 August 1994 (1994-08-10) abstract column 3, line 34 - line 36 column 5, line 13 -column 6, line 45 column 6, line 50 -column 7, line 8 column 12, line 12 - line 40	1-51
Y	US 5 748 974 A (JOHNSON DAVID EDWARD) 5 May 1998 (1998-05-05) abstract column 3, line 22 - line 27 column 3, line 63 -column 4, line 17 column 4, line 42 - line 46 column 5, line 23 -column 6, line 19 figure 2 -/	1-51

Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search 21 November 2003	Date of mailing of the international search report $02/12/2003$
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Authorized officer Rüschmann, F

INTERNATIONAL SEARCH REPORT

Internation Application No
PCT/US 00/25346

		PC1/US 00/25340		
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Х	US 5 742 816 A (HUSICK LAWRENCE A ET AL) 21 April 1998 (1998-04-21)	1-4,9, 18-20, 26,29-31		
	abstract column 8, line 50 -column 9, line 22 column 9, line 15 -column 10, line 24 column 11, line 37 - line 39 column 15, line 5 -column 20, line 22			
А	EP 0 895 396 A (TEXAS INSTRUMENTS INC) 3 February 1999 (1999-02-03) paragraph '0002! paragraph '0003! paragraph '0008! paragraph '0010! paragraph '0012! figure 1	12-24, 35-40		
Α	US 5 434 777 A (LUCIW WILLIAM W) 18 July 1995 (1995-07-18)	21-23, 28,38, 40,41		
	abstract column 1, line 52 -column 2, line 4 column 2, line 5 - line 11			
A	US 5 895 464 A (BHANDARI ARCHNA ET AL) 20 April 1999 (1999-04-20) the whole document	1–51		
A	EP 0 747 881 A (AT & T CORP) 11 December 1996 (1996-12-11) the whole document	1-51		
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INTERNATIONAL SEARCH REPORT

Information on patent family members

Internatio pplication No
PCT/US 00/25346

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0609517	A	10-08-1994	US EP JP	5630121 A 0609517 A2 6325104 A	13-05-1997 10-08-1994 25-11-1994
US 5748974	A	05-05-1998	JP	8235185 A	13-09-1996
US 5742816	Α	21-04-1998	AU WO	7202696 A 9710537 A2	01-04-1997 20-03-1997
EP 0895396	Α	03-02-1999	EP JP	0895396 A2 11149297 A	03-02-1999 02-06-1999
US 5434777	A	18-07-1995	US US US US US	5390281 A 5477447 A 5608624 A 5625814 A 5621903 A 5644735 A	14-02-1995 19-12-1995 04-03-1997 29-04-1997 15-04-1997 01-07-1997
US 5895464	A	20-04-1999	NONE		
EP 0747881	A	11-12-1996	US CA DE DE EP ES JP JP	5890123 A 2177865 A1 69618082 D1 69618082 T2 0747881 A2 2166427 T3 3432076 B2 8335160 A	30-03-1999 06-12-1996 31-01-2002 18-07-2002 11-12-1996 16-04-2002 28-07-2003 17-12-1996