

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 April 2004 (22.04.2004)

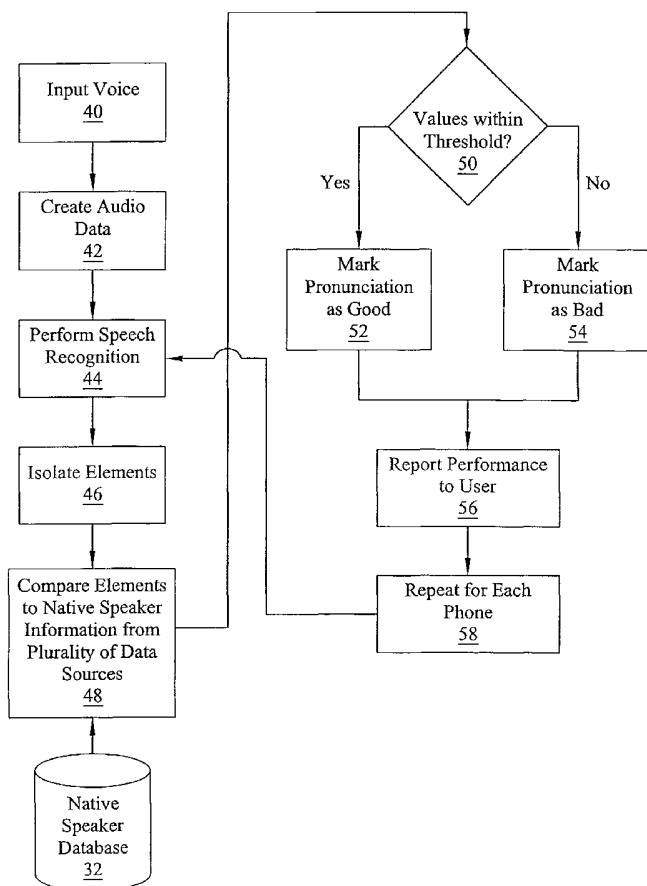
PCT

(10) International Publication Number  
**WO 2004/034355 A3**

- (51) International Patent Classification<sup>7</sup>: **G09B 19/06**, 19/04
- (21) International Application Number: PCT/US2003/029422
- (22) International Filing Date: 17 September 2003 (17.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 10/265,862 7 October 2002 (07.10.2002) US
- (71) Applicant: **CARNEGIE SPEECH** [US/US]; 700 Technology Drive, Suite 2105, Post Office Box: 2950, Pittsburgh, PA 15230 (US).
- (71) Applicant and  
(72) Inventor: **CARNEGIE MELLON UNIVERSITY** [US/US]; 5000 Forbes Avenue, Pittsburgh, PA 15213 (US).
- (72) Inventor: **ESKENAZI, Maxine**; 624 McCully Street, Pittsburgh, PA 15243 (US).
- (74) Agents: **PARKS, Jonathan, C.** et al.; Kirkpatrick & Lockhart LLP, Henry W. Oliver Building, 535 Smithfield Street, Pittsburgh, PA 15222-2312 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: SYSTEM AND METHODS FOR COMPARING SPEECH ELEMENTS



(57) Abstract: A method for comparing a first audio data source with a plurality of audio data sources, wherein the first audio data source has an utterance spoken by a first person and the plurality of audio data sources have the same utterance spoken by a second person. The method includes performing a speech recognition function on the first audio data source to isolate at least one element of the first audio data source. The method also includes comparing the isolated element with a corresponding element in the plurality of audio data sources and determining whether the utterance spoken by the first person contained an error based on the comparison.

WO 2004/034355 A3



(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) **Date of publication of the international search report:**

27 May 2004

**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 03/29422

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G09B19/06 G09B19/04

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

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G09B G10L

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	<p>US 2002/160341 A1 (MARKOV KONSTANTIN ET AL) 31 October 2002 (2002-10-31)</p> <p>paragraph '0006!</p> <p>paragraph '0008! - paragraph '0011!</p> <p>paragraph '0015!</p> <p>paragraph '0038!</p> <p>paragraph '0040!</p> <p>paragraph '0051! - paragraph '0052!</p> <p>paragraph '0084! - paragraph '0086!</p> <p>figures</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1-21

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

\*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

24 March 2004

Date of mailing of the international search report

01/04/2004

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

Königer, A

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No  
PCT/US 03/29422

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2002160341	A1	31-10-2002	JP	2001265211 A	28-09-2001
			WO	0152237 A1	19-07-2001
US 5487671	A	30-01-1996	AU	6093994 A	15-08-1994
			CN	1101446 A	12-04-1995
			WO	9417508 A1	04-08-1994
			US	RE37684 E1	30-04-2002
US 5766015	A	16-06-1998	AU	2403297 A	09-02-1998
			BR	9702341 A	24-10-2000
			CN	1197525 A	28-10-1998
			EP	0852782 A1	15-07-1998
			WO	9802862 A1	22-01-1998
			JP	11513144 T	09-11-1999
DE 10010232	A	26-10-2000	FR	2790586 A1	08-09-2000
			DE	10010232 A1	26-10-2000
EP 1089246	A	04-04-2001	DE	19947359 A1	03-05-2001
			EP	1089246 A2	04-04-2001
WO 0175862	A	11-10-2001	US	6490555 B1	03-12-2002
			AU	5057901 A	15-10-2001
			EP	1269464 A2	02-01-2003
			WO	0175862 A2	11-10-2001
EP 0805434	A	05-11-1997	US	5937384 A	10-08-1999
			CN	1171592 A ,B	28-01-1998
			DE	69719236 D1	03-04-2003
			DE	69719236 T2	18-09-2003
			EP	0805434 A2	05-11-1997
			JP	10063291 A	06-03-1998