



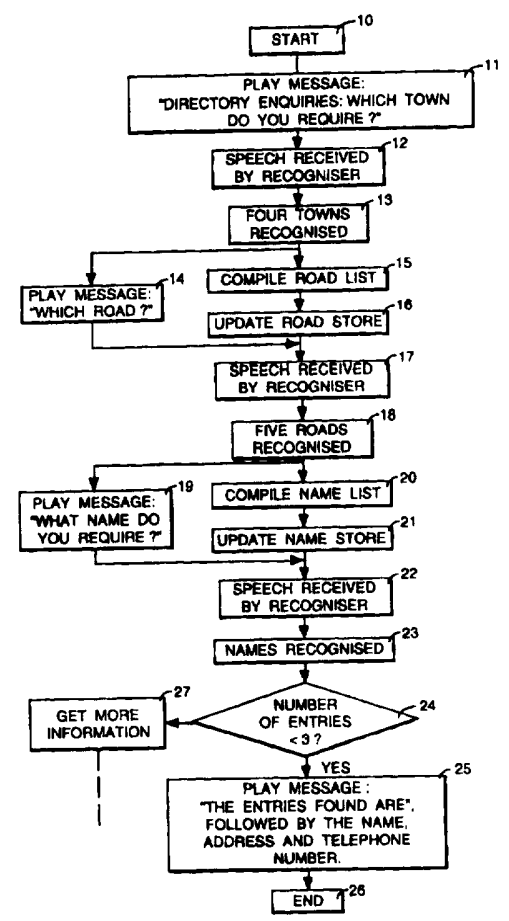
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>G10L 5/06</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 96/13030</b> (43) International Publication Date: <b>2 May 1996 (02.05.96)</b></p>
<p>(21) International Application Number: <b>PCT/GB95/02524</b> (22) International Filing Date: <b>25 October 1995 (25.10.95)</b> (30) Priority Data: <b>94307843.6</b>      <b>25 October 1994 (25.10.94)</b>      <b>AT</b> (71) Applicant (for all designated States except US): <b>BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY [GB/GB]; 81 Newgate Street, London, EC1A 7AJ (GB).</b> (72) Inventors; and (75) Inventors/Applicants (for US only): <b>ATTWATER, David, John [GB/GB]; 154 Cavendish Street, Ipswich, Suffolk IP3 8BG (GB). WHITTAKER, Steven, John [GB/GB]; 53 Bristol Road, Ipswich, Suffolk IP4 4LP (GB). SCAHILL, Francis, James [GB/GB]; 39 Manor Road, Martlesham Heath, Ipswich, Suffolk IP5 75X (GB). SIMONS, Alison, Diane [GB/GB]; 117 Faulkeners Way, Trimley St. Mary, Ipswich, Suffolk IP10 0FF (GB).</b> (74) Agent: <b>ROBERTS, Simon, Christopher; BT Group Legal Services, Intellectual Property Dept., 13th floor, 151 Gower Street, London, WC1E 6BA (GB).</b></p>	<p>(81) Designated States: <b>AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, LS, MW, SD, SZ, UG).</b>  <b>Published</b> <i>With international search report.</i>  (88) Date of publication of the international search report: <b>8 August 1996 (08.08.96)</b></p>	

(54) Title: **VOICE-OPERATED SERVICES**

(57) Abstract

A method and apparatus for accessing a database where entries are linked to at least two sets of patterns. Recognition means recognise within a received signal one or more patterns of a first set of patterns. The recognised patterns are used to identify entries and compile a list of patterns in a second set of patterns to which those entries are also linked. The list is then used to recognise a second received signal. The received signals may, for example, be voice signals or signals indicating the origin or destination of the received signals.



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# INTERNATIONAL SEARCH REPORT

Int: onal Application No  
PCT/GB 95/02524

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 G10L5/06

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 6 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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP,A,0 299 572 (PHILIPS) 18 January 1989	1,2, 5-11, 20-22, 27-29
Y	see page 2 - page 3, column 4, line 14 ---	3
P,Y	EP,A,0 625 758 (IBM) 23 November 1994 see page 6, line 42 - page 7 ---	3
A	US,A,5 202 952 (GILLICK ET AL.) 13 April 1993 see column 5, line 21 - column 6, line 10 ---	4
A	GB,A,2 165 969 (BRITISH TELECOM) 23 April 1986 see page 1, line 33 - line 54 ---	1,20-22, 27,28
	-/--	

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
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- \* "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

5 March 1996

Date of mailing of the international search report

31.05.96

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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 95/02524

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 269 233 (SMITHS INDUSTRIES) 1 June 1988 see page 2 - page 3, column 4, line 4 ---	1,20-22, 27,28
A	EUROSPEECH 89, PARIS, FR, 26.-28. 9. 1989, vol.9, no.5-6, ISSN 0167-6393, SPEECH COMMUNICATION, DEC. 1990, NETHERLANDS pages 551 - 564, XP002000047 YOUNG 'Use of dialogue, pragmatics and semantics to enhance speech recognition' see paragraph 2.1 see paragraph 2.2 -----	1,20-22, 27,28

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB95/02524

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. CLAIMS : 1-11,20-25,27-32
2. CLAIMS : 12-19
3. CLAIMS : 26
4. CLAIMS : 33

For further information see form PCT/ISA/206 mailed 08.03.96

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11,20-25,27-32

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**International Patent Application PCT/GB/02524**

The claims of the present application do not fulfill the requirement of unity of invention (Rule 13 PCT). The reasons are as follows:

The document which is considered to be the closest prior art is EP299572 (D1). The independent claims 1, 12, 15, 16, 20, 21, 22, 26, 27 and 28 have in common the feature of an identification apparatus (in a broad sense) which uses additional information for limiting the space of possibilities to search.

This concept, however, is known from D1. Here, on page 2 and the left column of page 3, a speech recogniser is described which uses different lists to reduce the search space according to syntactic categories (= additional information).

The independent claim 21 does not have any special technical feature above the prior art because the broader term "pattern recogniser" does not add anything to the features described in claim 20 which are known from D1.

The independent claim 33 shares with the others only the vague feature of identification of any data which is also known e.g. from EP299572.

I. Therefore the independent claims can be grouped according to their special technical features apart from these known concepts.

**1. claims 1-11, 20-25, 27-32 :**

All the technical features from claims 1-2 are known from D1. So the technical problem in the light of this document is to construct a speech recogniser taking into account the number of syntactic connections between words (claim 3). This is solved by employing lists of connected words to restrict the search space and so providing additional syntactic information.

**2. claims 12-19 :**

deal with the problem to construct a speech recogniser resp. a speaker recogniser/verifier (cl. 15) using additional information to enhance the recognition rate. This is solved by using information about the origin of a telephone call.

**3. claim 26 :**

deals with the problem to provide a method of data retrieval using additional information to enhance the retrieval rate. This is solved by employing lists of connected data to restrict the search space and so providing additional syntactic information.

**4. claim 33 :**

The problem is to provide a method of speech recognition dealing with unreliable recognition results. The solution is to fall back to stored speech data and employing another recognition process therewith.

II. There is no feature common to two of the groups, which could be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence. Thus no technical relationship within the meaning of PCT Rule 13 between any two or more of the groups of inventions can be seen.

III. Consequently it appears that, a posteriori, the claims 1, 12, 15, 16, 20, 22, 26-28 and 33 do not fulfill the requirements of PCT rule 13.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No <b>PCT/GB 95/02524</b>
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0299572	18-01-89	DE-A- 3723078	19-01-89
		DE-D- 3886111	20-01-94
		JP-A- 1078299	23-03-89
		US-A- 4947438	07-08-90
EP-A-0625758	23-11-94	GB-A- 2277387	26-10-94
		JP-A- 7093372	07-04-95
US-A-5202952	13-04-93	CA-A- 2085895	23-12-91
		EP-A- 0535146	07-04-93
		JP-T- 6501319	10-02-94
		WO-A- 9200585	09-01-92
GB-A-2165969	23-04-86	NONE	
EP-A-0269233	01-06-88	GB-A- 2198572	15-06-88