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[Continued on next page]

(54) Title: TRAINING AN AT LEAST PARTIAL VOICE COMMAND SYSTEM

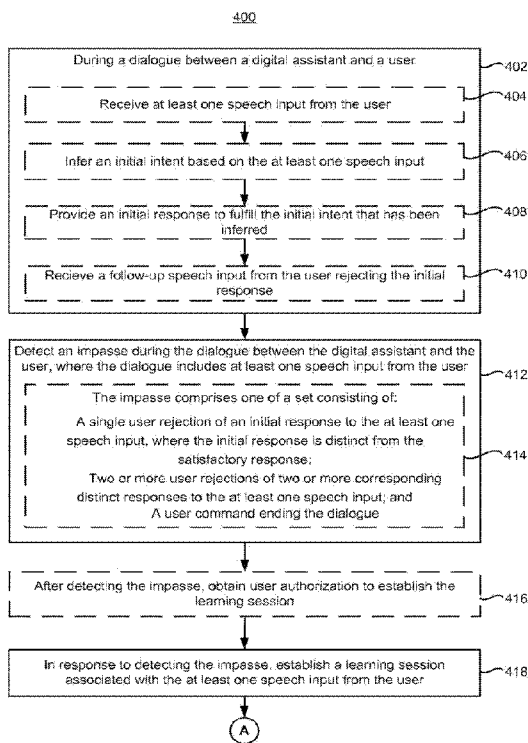


Figure 4A

(57) Abstract: An electronic device with one or more processors and memory includes a procedure for training a digital assistant. In some embodiments, the device detects an impasse in a dialogue between the digital assistant and a user including a speech input. During a learning session, the device utilizes a subsequent clarification input from the user to adjust intent inference or task execution associated with the speech input to produce a satisfactory response. In some embodiments, the device identifies a pattern of success or failure associated with an aspect previously used to complete a task and generates a hypothesis regarding a parameter used in speech recognition, intent inference or task execution as a cause for the pattern. Then, the device tests the hypothesis by altering the parameter for a subsequent completion of the task and adopts or rejects the hypothesis based on feedback information collected from the subsequent completion.

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TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. G10L15/22 H04M3/493
ADD.
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)
G10L H04M G01C

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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 725 197 B1 (WUPPERMANN FRIEDHELM [NL] ET AL) 20 April 2004 (2004-04-20) column 1, line 56 - column 2, line 33 column 2, line 63 - column 3, line 1 column 4, line 31 - line 61 column 5, line 38 - line 48 column 5, line 65 - column 6, line 54 claim 1	1-4,6,7, 11,14, 27-36, 38,39, 43,46
X	US 5 855 000 A (WAIBEL ALEXANDER [US] ET AL) 29 December 1998 (1998-12-29) column 2, line 60 - column 3, line 6 column 6, line 8 - line 46 ----- -/--	1-4, 27-36

Further documents are listed in the continuation of Box C.

See patent family 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 application or patent 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 9 September 2014	Date of mailing of the international search report 18/09/2014
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Geibler, Christian
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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/119587 A1 (ALLEN JAMES F [US] ET AL) 7 May 2009 (2009-05-07) paragraphs [0040] - [0042], [0047], [0054], [0057] - [0061], [0072], [0089], [0090] -----	1,5,9, 27-33, 37,41
X	US 2002/135618 A1 (MAES STEPHANE HERMAN [US] ET AL) 26 September 2002 (2002-09-26) paragraphs [0051], [0052], [0201], [0202] -----	1,8, 27-33,40
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X	US 2011/110502 A1 (DAYE SHERI G [US] ET AL) 12 May 2011 (2011-05-12) paragraph [0029] - paragraph [0032] -----	1,10,12, 13, 27-33, 42,44,45
X	US 2012/053945 A1 (GUPTA RAKESH [US] ET AL) 1 March 2012 (2012-03-01) paragraphs [0007], [0009], [0045], [0052], [0057], [0070], [0076] - [0078] figure 3 -----	15-19, 21-24, 27-32, 47-51, 53-56
X	US 2005/105712 A1 (WILLIAMS DAVID R [US] ET AL) 19 May 2005 (2005-05-19) paragraphs [0081], [0237], [0248], [0254], [0255], [0282], [0287], [0288], [0291] - [0297], [0313] - [0317] -----	15,20, 25-32, 47,52, 57,58
X	US 2008/126091 A1 (CLARK JASON W [US] ET AL) 29 May 2008 (2008-05-29) figures 3,4,5A,5B -----	15, 27-32,47
X	US 2002/072914 A1 (ALSHAWI HIYAN [US] ET AL) 13 June 2002 (2002-06-13) paragraphs [0067], [0068] figure 3 -----	15, 27-32,47
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/029562

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

see additional sheet

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 fees, this Authority did not invite payment of additional fees.

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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14, 33-46(completely); 27-32(partially)

Training a digital assistant with authorization of user for learning session

2. claims: 15-26, 47-58(completely); 27-32(partially)

Training a digital assistant with identification of source of dialog impasses

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2014/029562

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