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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/633,231	10/02/2012	Matthew Nicholas Stuttle	12-715	5104
98929 7590 05/21/2013 McDonnell Boehnen Hulbert & Berghoff LLP/Google Inc. 300 South Wacker Drive, Suite 3100 Chicago, IL 60606			EXAMINER JACKSON, JAKIEDA R	
			ART UNIT 2657	PAPER NUMBER
			MAIL DATE 05/21/2013	DELIVERY MODE PAPER

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

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 13/633,231	Applicant(s) STUTTLE ET AL.	
	Examiner JAKIEDA JACKSON	Art Unit 2657	AIA (First Inventor to File) Status No

-- 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) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 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 7 May 2013.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ 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

- 5) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- 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)).

* See the attached detailed Office action for a list of the certified copies not received.

Interim copies:

- a) ☐ All b) ☐ Some c) ☐ None of the: Interim copies of the priority documents have been received.

Attachment(s)

- | | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413) |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08) | Paper No(s)/Mail Date. ____. |
| Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

DETAILED ACTION

Response to Amendment

In response to the Office Action mailed March 13, 2013, applicant submitted an amendment filed on March 7, 2013, in which the applicant amended and requested reconsideration.

Response to Arguments

Applicants argue that the prior art cited does not specifically wherein determining the one or more speech parameters comprises determining the one or more speech parameters based on a first set of speech parameters determined for a substantially sound-free background environment, and a second set of speech parameters that includes Lombard parameters determined for a given environment with a previously determined background sound condition, wherein the Lombard parameters are determined such that the voice output is intelligible in the previously determined background sound condition. Applicants' arguments are persuasive, but are moot in view of new grounds of rejection.

Claim Rejections - 35 USC § 103

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.

Claims 1-3, 7, 9-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma (PGPUB 2007/0239444) in view of Chengalvarayan et al. (USPN 7,676,363), hereinafter referenced as Chengalvarayan.

Regarding **claims 1, 8, 14 and 17-18**, Ma discloses a method, apparatus and medium, comprising:

determining one or more characteristics of an environment of a device (environmental conditions; paragraph 0018), wherein the device includes a text-to-speech module (convert phonetic string into an acoustic speech signal; paragraph 0024), wherein the one or more characteristics of the environment are time-varying (paragraphs 0021-0032 with 0039-0043);

determining, based on the one or more characteristics of the environment, one or more speech parameters that characterize a voice output of the text-to-speech module (paragraphs 0024-0032);

processing, by the text-to-speech module, a text to obtain the voice output corresponding to the text based on the one or more speech parameters to account for the one or more characteristics of the environment (paragraphs 0024-0032), but does not specifically teach wherein determining the one or more speech parameters comprises determining the one or more speech parameters based on a first set of speech parameters determined for a substantially sound-free background environment, and a second set of speech parameters that includes Lombard parameters determined for a given environment with a previously determined background sound condition,

wherein the Lombard parameters are determined such that the voice output is intelligible in the previously determined background sound condition.

Chengalvarayan teach a method wherein determining the one or more speech parameters comprises determining the one or more speech parameters based on a first set of speech parameters determined for a substantially sound-free background environment (quiet, sound controlled environment (column 11, lines 7-14 and column 16, lines 11-24), and a second set of speech parameters that includes Lombard parameters (Lombard parameters) determined for a given environment with a previously determined background sound condition (store, track or record noises such as vehicle traversing, wind noise, air conditioning, etc.), wherein the Lombard parameters are determined such that the voice output is intelligible in the previously determined background sound condition (column 10, line 2 - column 13, line 54), to reduce variability of speech and noise signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ma's method as described above, to allow speech to be articulated in a way that varies in response to the changes in the background noise (abstract with column 1, lines 11-37), as taught by Chengalvarayan.

Regarding **claim 2**, Ma discloses a method wherein the one or more speech parameters include one or more of volume, duration, pitch, and spectrum (paragraphs 0024-0032).

Regarding **claims 3 and 20**, Ma discloses a method wherein the one or more characteristics include one or more characteristics of a background sound in the

environment, wherein the one or more characteristics of the background sound include one or more of (i) signal-to-noise ratio (SNR) relating to the background sound, and (ii) type of the background sound, and wherein the functions further comprise updating the one or more speech parameters in real-time to account for time-varying characteristics of the environment (paragraphs 0024-0032).

Regarding **claim 5**, Ma discloses a method wherein determining the one or more speech parameters comprises extrapolating or interpolating between the first set of speech parameters and the Lombard parameters, based on the one or more characteristics (paragraphs 0024-0032).

Regarding **claim 6**, Ma discloses a method wherein determining the one or more speech parameters comprises:

determining a transform to convert the first set of speech parameters to the Lombard parameters (paragraphs 0024-0032);

modifying, based on the one or more characteristics, the transform (paragraphs 0024-0032); and

applying the modified transform to one of (i) the first set of speech parameters, and (ii) the Lombard parameters to obtain the one or more speech parameters (paragraphs 0024-0032).

Regarding **claim 7**, Ma discloses a method wherein processing the text comprises:

synthesizing a voice signal from the text based on one or more speech waveforms pre- recorded in a given environment having one or more predetermined characteristics (paragraphs 0024-0032); and

modifying, using the one or more speech parameters, the voice signal to obtain the voice output of the text (paragraphs 0024-0032).

Regarding **claim 9**, Ma discloses a method wherein the voice output corresponding to the text differs from the synthesized voice signal in one or more of volume, duration, pitch, and spectrum to account for the one or more characteristics of the environment of the device (paragraphs 0024-0032).

Regarding **claim 10**, Ma discloses a method wherein modifying the synthesized voice signal comprises scaling, based on the one or more speech parameters, one or more signal parameters of the synthesized voice signal by a factor, wherein the one or more speech parameters include one or more of volume, duration, pitch, and spectrum (paragraphs 0024-0032).

Regarding **claim 11**, Ma discloses a method wherein processing the text comprises:

determining, using the one or more speech parameters, a Hidden Markov Model generated to model a parametric representation of spectral and excitation parameters of speech (HMM; paragraphs 0043-0048); and

synthesizing, using the Hidden Markov Model, a speech waveform to generate the voice output corresponding to the text (HMM; paragraphs 0043-0048).

Regarding **claim 12**, Ma discloses a method wherein the one or more speech parameters are time-varying (varying time; paragraph 0021).

Regarding **claim 13**, Ma discloses a method wherein determining the one or more speech parameters comprises determining the one or more speech parameters in real-time to account for the time-varying characteristics of the environment (varying time upon capture; paragraph 0021).

Regarding **claim 15**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 4.

Regarding **claim 16**, Ma discloses a method wherein determining the one or more speech parameters comprises:

determining a transform to convert the first set of speech parameters to the Lombard parameters (paragraphs 0024-0032);

modifying, based on the one or more characteristics, the transform (paragraphs 0024-0032); and

applying the modified transform to one of (i) the first set of speech parameters, and (ii) the Lombard parameters to obtain the one or more speech parameters (paragraphs 0024-0032).

Regarding **claim 19**, Ma discloses a method wherein modifying the synthesized voice signal comprises scaling, based on the one or more speech parameters, one or more signal parameters of the synthesized voice signal by a factor, wherein the one or more speech parameters include one or more of volume, duration, pitch, and spectrum (paragraphs 0024-0032).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This information has been detailed in the PTO 892 attached (Notice of References Cited).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAKIEDA JACKSON whose telephone number is (571)272-7619. The examiner can normally be reached on Monday-Friday from 5:30am-2:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jakieda R Jackson/
Primary Examiner, Art Unit 2657

Notice of References Cited	Application/Control No. 13/633,231	Applicant(s)/Patent Under Reexamination STUTTLE ET AL.	
	Examiner JAKIEDA JACKSON	Art Unit 2657	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2007/0239444	10-2007	Ma, Changxue C.	704/233
*	B	US-2013/0013304	01-2013	Murthy et al.	704/226
*	C	US-2007/0253578	11-2007	Verdecanna et al.	381/104
*	D	US-2007/0129022	06-2007	Boillot et al.	455/090.1
	E	US-			
	F	US-			
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	I	US-			
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	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
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	Q					
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	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.