Mail Room Date	Doc code	Doc Description	Pages
3/19/2019	TRNA	Transmittal of New Application	1
3/19/2019	WFEE	Fee Worksheet (SB06)	2
3/19/2019	N417	Electronic Filing System(EFS) Acknowledgment Receipt	3
3/19/2019	ADS	Application Data Sheet	9
3/19/2019	OATH	Oath or Declaration filed	2
3/19/2019	DRW.NONBW	Drawings-other than black and white line drawings	14
3/19/2019	PA..	Power of Attorney	2
3/19/2019	ABST	Abstract	1
3/19/2019	CLM	Claims	12
3/19/2019	SPEC	Specification	38
3/19/2019	A.PE	Preliminary Amendment	1
3/19/2019	SPEC	Specification	1
3/19/2019	CLM	Claims	7
3/19/2019	REM	Applicant Arguments/Remarks Made in an Amendment	1
3/19/2019	TRACK1.REQ	Track One Request	1
3/19/2019	SCORE	Placeholder sheet indicating presence of supplemental content in Supplemental Complex Repository for Examiners(SCORE)	1
3/21/2019	IDS	Information Disclosure Statement (IDS) Form (SB08)	4
3/21/2019	REF.OTHER	Other reference-Patent/Application/Search Documents	11
3/21/2019	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
3/28/2019	FRPR	Certified Copy of Foreign Priority Application	70
3/28/2019	TRAN.LET	Transmittal Letter	1
4/5/2019	APP.FILE.REC	Filing Receipt	3
4/5/2019	WFEE	Fee Worksheet (SB06)	1
4/8/2019	TRACK1.GRANT	Track One request Granted	2
6/7/2019	CTRS	Requirement for Restriction/Election	6
6/7/2019	FWCLM	Index of Claims	2
6/17/2019	ELC.	Response to Election / Restriction Filed	1
6/17/2019	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
7/11/2019	NTC.PUB	Notice of Publication	1
7/25/2019	CTNF	Non-Final Rejection	12
7/25/2019	892	List of references cited by examiner	1
7/25/2019	SRFW	Search information including classification, databases and other search related notes	1
7/25/2019	FWCLM	Index of Claims	2
7/25/2019	SRNT	Examiner's search strategy and results	3
7/25/2019	1449	List of References cited by applicant and considered by examiner	4
8/8/2019	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
8/8/2019	A...	Amendment/Request for Reconsideration-After Non-Final Rejection	1
8/8/2019	CLM	Claims	8
8/8/2019	REM	Applicant Arguments/Remarks Made in an Amendment	8

Mail Room Date	Doc code	Doc Description	Pages
11/14/2019	CTFR	Final Rejection	14
11/14/2019	892	List of references cited by examiner	1
11/14/2019	SRFW	Search information including classification, databases and other search related notes	1
11/14/2019	FWCLM	Index of Claims	2
11/14/2019	SRNT	Examiner's search strategy and results	5
12/29/2019	WFEE	Fee Worksheet (SB06)	1
12/29/2019	WFEE	Fee Worksheet (SB06)	1
12/29/2019	A.NE	Response After Final Action	1
12/29/2019	CLM	Claims	8
12/29/2019	REM	Applicant Arguments/Remarks Made in an Amendment	6
12/29/2019	LET.	Miscellaneous Incoming Letter	1
12/29/2019	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
1/27/2020	CTAV	Advisory Action (PTOL-303)	3
1/27/2020	ANE.I	Amendment After Final or under 37CFR 1.312, initialed by the examiner.	1
2/11/2020	WFEE	Fee Worksheet (SB06)	1
2/11/2020	RCEX	Request for Continued Examination (RCE)	3
2/11/2020	WFEE	Fee Worksheet (SB06)	2
2/11/2020	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
2/11/2020	AMSB	Amendment Submitted/Entered with Filing of Continued Prosecution Application (CPA)/Request for Continued Examination(RCE)	1
2/11/2020	CLM	Claims	6
2/11/2020	REM	Applicant Arguments/Remarks Made in an Amendment	8
3/30/2020	CTNF	Non-Final Rejection	17
3/30/2020	892	List of references cited by examiner	1
3/30/2020	FWCLM	Index of Claims	2
3/30/2020	SRFW	Search information including classification, databases and other search related notes	2
3/30/2020	SRNT	Examiner's search strategy and results	2
5/21/2020	M865E	Electronic Request for Interview with Examiner	1
6/9/2020	INTV.SUM.APP	Applicant Initiated Interview Summary (PTOL-413)	3
6/11/2020	WFEE	Fee Worksheet (SB06)	1
6/11/2020	WFEE	Fee Worksheet (SB06)	2
6/11/2020	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
6/11/2020	A...	Amendment/Request for Reconsideration-After Non-Final Rejection	1
6/11/2020	CLM	Claims	7
6/11/2020	REM	Applicant Arguments/Remarks Made in an Amendment	8
9/9/2020	NOA	Notice of Allowance and Fees Due (PTOL-85)	11
9/9/2020	INTV.SUM.EX	Examiner initiated interview summary (PTOL-413B)	1
9/9/2020	892	List of references cited by examiner	1
9/9/2020	IIFW	Issue Information including classification, examiner, name, claim, renumbering, etc.	3

Mail Room Date	Doc code	Doc Description	Pages
9/9/2020	FWCLM	Index of Claims	2
9/9/2020	SRFW	Search information including classification, databases and other search related notes	2
9/9/2020	SRNT	Examiner's search strategy and results	2
9/9/2020	SRNT	Examiner's search strategy and results	1
9/9/2020	SRNT	Examiner's search strategy and results	22
9/9/2020	BIB	Bibliographic Data Sheet	1
9/20/2020	IFEE	Issue Fee Payment (PTO-85B)	2
9/20/2020	WFEE	Fee Worksheet (SB06)	2
9/20/2020	N417	Electronic Filing System(EFS) Acknowledgment Receipt	2
10/7/2020	ISSUE.NTF	Issue Notification	1

PTO/AIA/15 (07-12)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	1179.0130 (583-6.3 NP)
First Inventor	N. Nahum
Title	Chat-Based Application Interface for Automation
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☑ **Fee Transmittal Form.** (PTO/SB/17 or equivalent)
2. ☐ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification.** [*Total Pages* 51] Both the claims and abstract must start on a new page *(For information on the preferred arrangement, see MPEP § 608.01(a))*
4. ☑ **Drawing(s).** (*35 U.S.C. 113*) [*Total Sheets* 14]
5. **Inventor's Oath or Declaration.** [*Total Sheets* 2] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☑ Newly executed (original or copy)
   b. ☐ A copy from a prior application (37 CFR 1.63(d))
6. ☑ **Application Data Sheet.** **See Note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
7. ☐ **CD-ROM or CD-R.** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission.** *(if applicable, items a. – c. are required)*
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450**

ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers.** (cover sheet & document(s)) Name of Assignee_____
10. ☐ **37 CFR 3.73(c) Statement.** *(when there is an assignee)* ☑ **Power of Attorney.**
11. ☐ **English Translation Document.** *(if applicable)*
12. ☐ **Information Disclosure Statement.** (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached
13. ☑ **Preliminary Amendment.**
14. ☐ **Return Receipt Postcard.** *(MPEP § 503) (Should be specifically itemized)*
15. ☐ **Certified Copy of Priority Document(s).** *(if foreign priority is claimed)*
16. ☐ **Nonpublication Request.** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☑ **Other:** Track 1 Request

***Note:** (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

18. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 106928 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Mark I. Koffsky/	Date	3/19/2019
Name (Print/Type)	Mark I. Koffsky	Registration No. (Attorney/Agent)	41906

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir Nahum
Filer:	MARK I KOFFSKY
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Filed as Large Entity	
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)	

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4000	4000
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	10	100	1000
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	460	460

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous-Filing:				
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**7320**

Electronic Acknowledgement Receipt	
EFS ID:	35471625
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir Nahum
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	19-MAR-2019
Filing Date:	
Time Stamp:	18:38:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$7320
RAM confirmation Number	032019INTEFSW18385800
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ADS.pdf	1823044 52c11e5c6a7e03f2663033a8d45570a4b1932305	no	9
Warnings:					
Information:					
2	Oath or Declaration filed	dec.pdf	3397909 cd5e2aa9ccca610870fc5ea22d00cb7b297e22b4	no	2
Warnings:					
Information:					
3	Drawings-other than black and white line drawings	Draw.pdf	406187 a29db70bb189f8816a41dc79c82653073ea0c22e	no	14
Warnings:					
Information:					
4	Power of Attorney	POA.pdf	740211 be857382eaf2bc8a37723f5518c2cc428886f7ca	no	2
Warnings:					
Information:					
5	Preliminary Amendment	Prelim.pdf	121190 265f57052e2c923044c2d4a6bf36cc62c8dc89c0	no	10
Warnings:					
Information:					
6		Spec.pdf	257703 0853e31c182131e380523f41c9dba16df284d016	yes	51
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	

	Abstract		51	51	
	Claims		39	50	
	Specification		1	38	
Warnings:					
Information:					
7	TrackOne Request	Track1.pdf	117838 cba23d5457333f5504fb622926094d04586 74331	no	1
Warnings:					
Information:					
8	Transmittal of New Application	Trans.pdf	101900 ae423e4a76e3051edd6113d8e8d79f59872 f09c5	no	1
Warnings:					
Information:					
9	Fee Worksheet (SB06)	fee-info.pdf	43354 39844e12c8e58f8cf21273c6315cd5a5067f 2211	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	7009336		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Nir		NAHUM	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Tel Aviv	Country of Residence i	IL

Mailing Address of Inventor:

Address 1	3 Marcel Janco St.
Address 2	
City	Tel Aviv
State/Province	
Postal Code	6941320
Country i	IL

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Shlomi		SASSON	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Givat Zeev	Country of Residence i	IL

Mailing Address of Inventor:

Address 1	12/1 Savion St.
Address 2	
City	Givat Zeev
State/Province	
Postal Code	90917
Country i	IL

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ **An Address is being provided for the correspondence Information of this application.**			
Customer Number	106928		
Email Address	patent@koffskyschwalb.com	Add Email	Remove Email
Email Address	mikuspto@gmail.com	Add Email	Remove Email

Application Information:

Title of the Invention	Chat-Based Application Interface for Automation		
Attorney Docket Number	1179.0130 (583-6.3 NP)	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information **should** be provided for all practitioners **having** a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

Customer Number	106928

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	PCT/IL2018/051168	2018-11-04
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/IL2018/051168	Claims benefit of provisional	62581714	2017-11-05

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

PTO/AIA/14 (11-15)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	WalkMe LTD.		
Mailing Address Information For Applicant:			
Address 1	3 Kremenetski St.		
Address 2			
City	Tel Aviv	**State/Province**	
Country	IL	Postal Code	6789903
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. — Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Mark I. Koffsky/			Date (YYYY-MM-DD)	2019-03-19
First Name	Mark	Last Name	Koffsky	Registration Number	41906

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1179.0130 (583-6.3 NP)
	Application Number	
Title of Invention	Chat-Based Application Interface for Automation	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Shlomi SASSON Date (Optional): 12/3/19

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention: CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Nir NAHUM Date (Optional): Mar 17, 2019

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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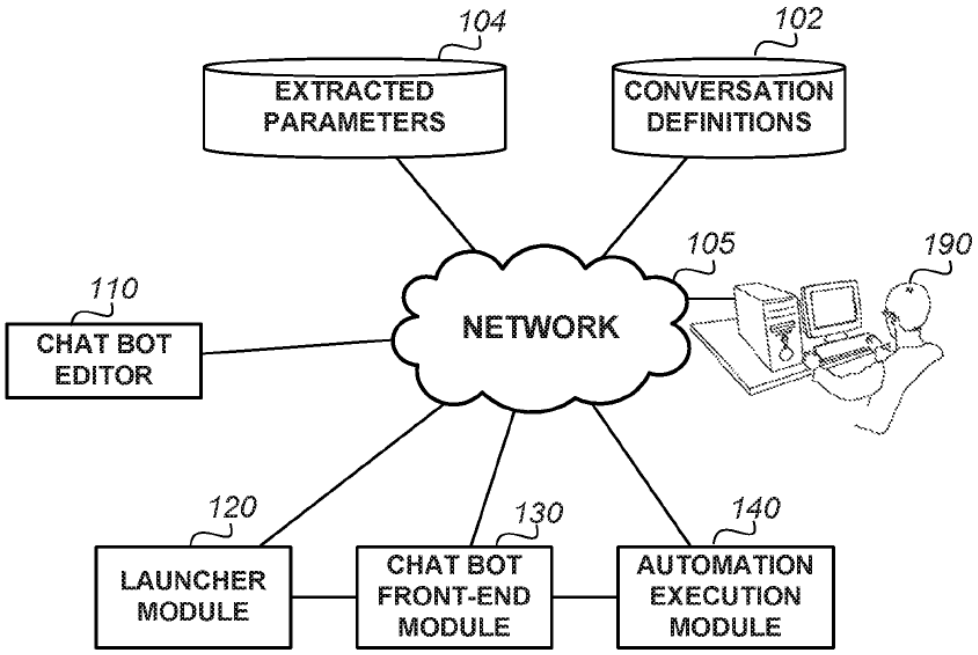

104
EXTRACTED PARAMETERS
102
CONVERSATION DEFINITIONS
105
190
110
CHAT BOT EDITOR
NETWORK
120
LAUNCHER MODULE
130
CHAT BOT FRONT-END MODULE
140
AUTOMATION EXECUTION MODULE

FIG. 1

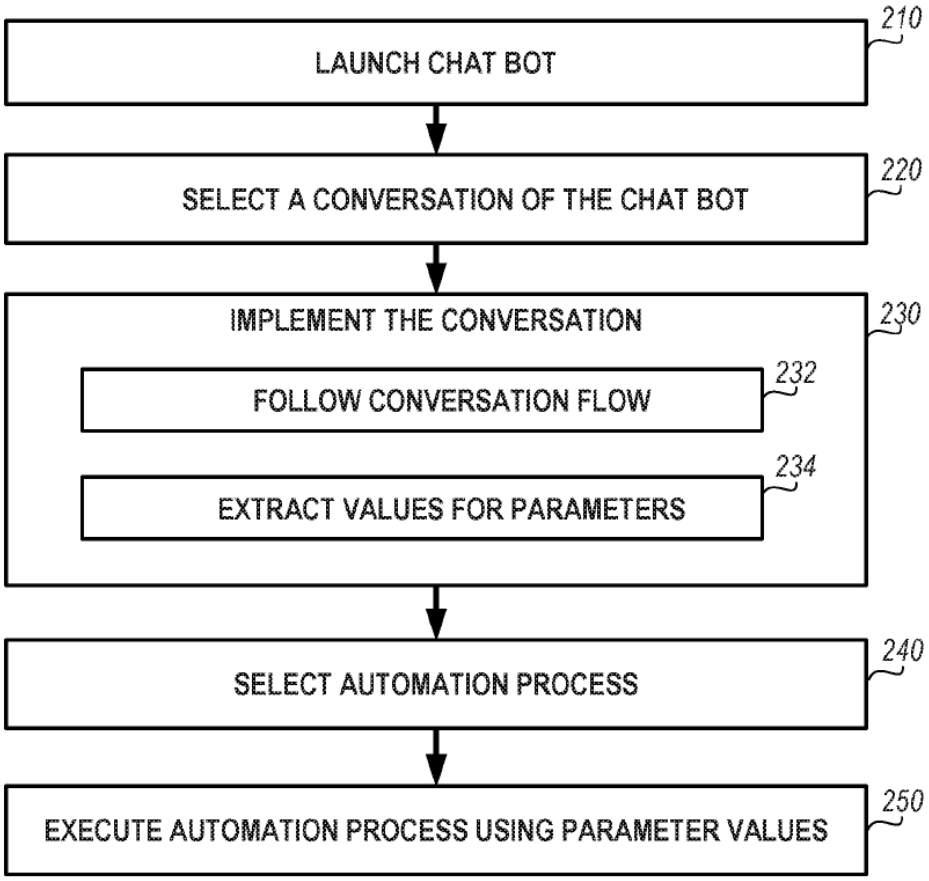

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
FOLLOW CONVERSATION FLOW
232
EXTRACT VALUES FOR PARAMETERS
234
SELECT AUTOMATION PROCESS
240
EXECUTE AUTOMATION PROCESS USING PARAMETER VALUES
250

FIG. 2A

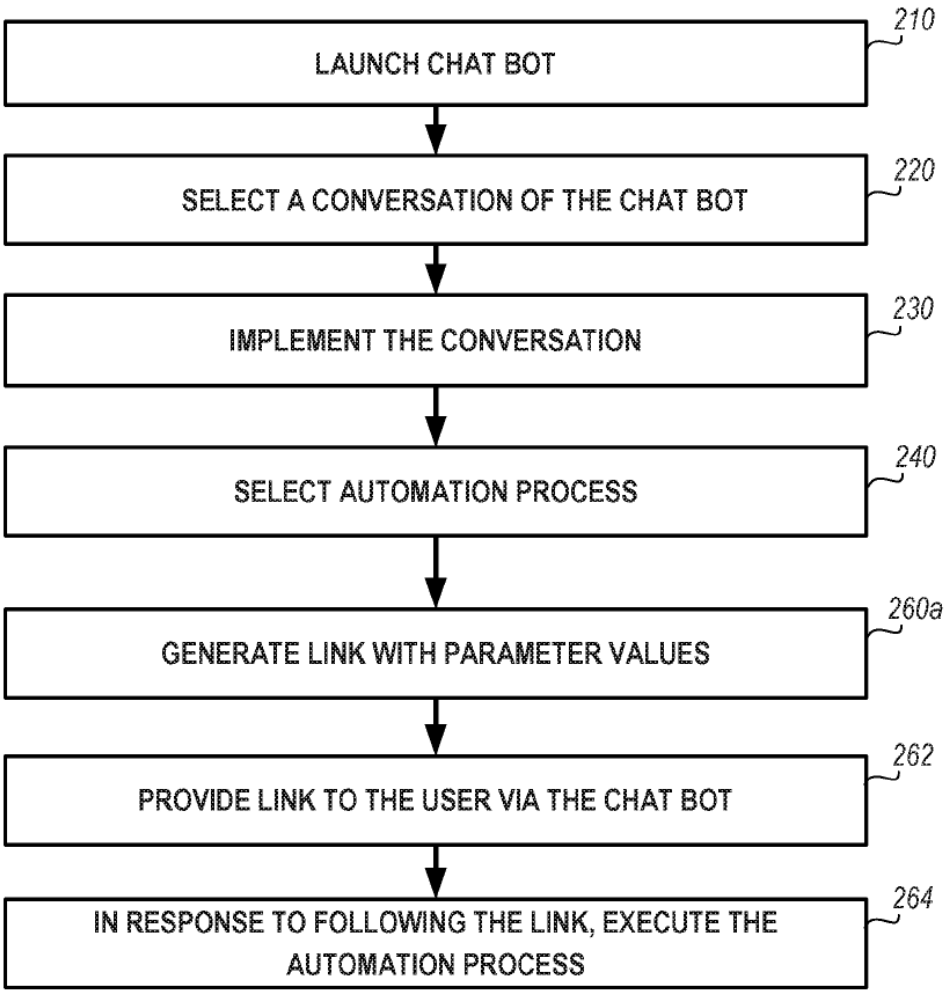

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
SELECT AUTOMATION PROCESS
240
GENERATE LINK WITH PARAMETER VALUES
260a
PROVIDE LINK TO THE USER VIA THE CHAT BOT
262
IN RESPONSE TO FOLLOWING THE LINK, EXECUTE THE AUTOMATION PROCESS
264

FIG. 2B

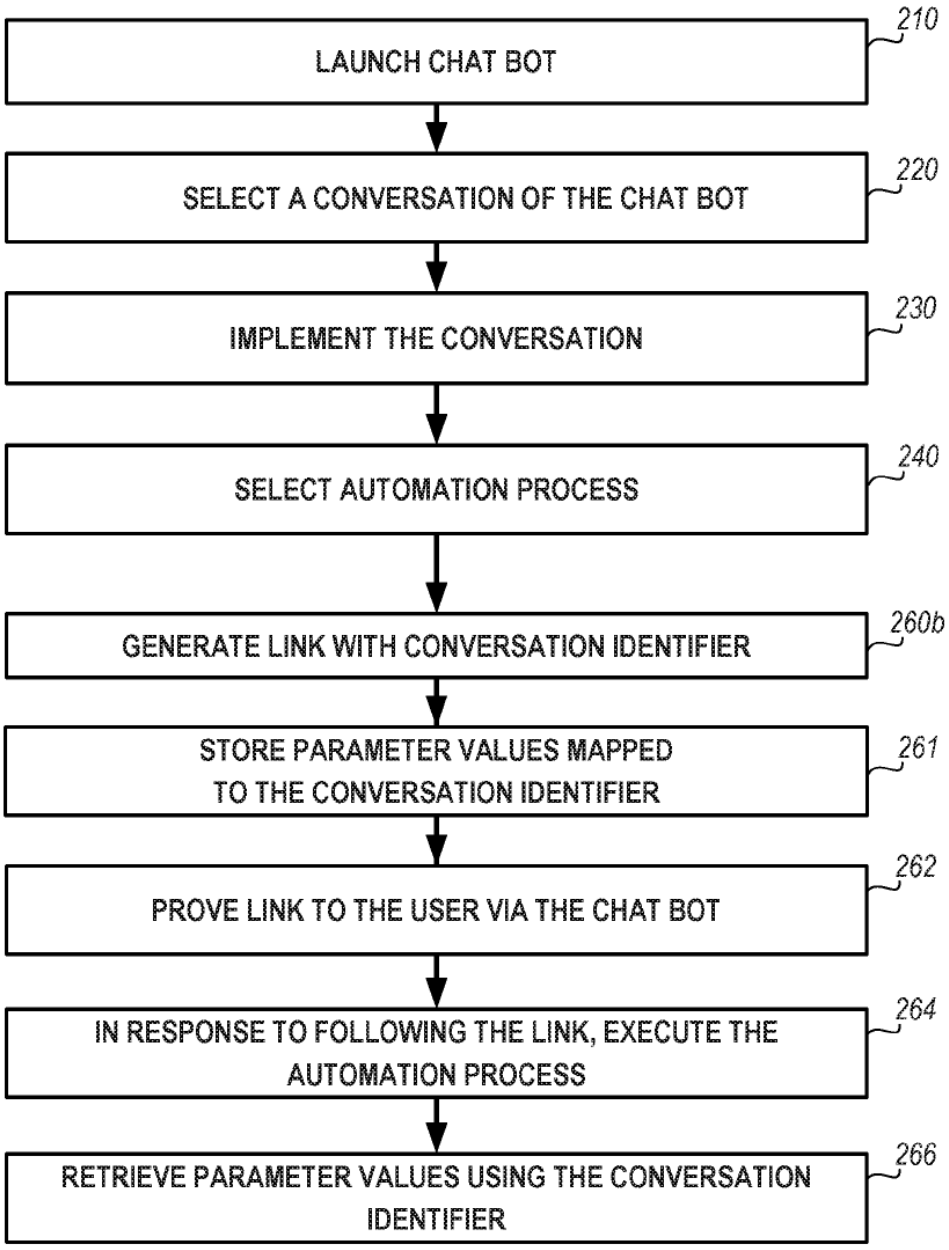

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
SELECT AUTOMATION PROCESS
240
GENERATE LINK WITH CONVERSATION IDENTIFIER
260b
STORE PARAMETER VALUES MAPPED TO THE CONVERSATION IDENTIFIER
261
PROVE LINK TO THE USER VIA THE CHAT BOT
262
IN RESPONSE TO FOLLOWING THE LINK, EXECUTE THE AUTOMATION PROCESS
264
RETRIEVE PARAMETER VALUES USING THE CONVERSATION IDENTIFIER
266

FIG. 2C

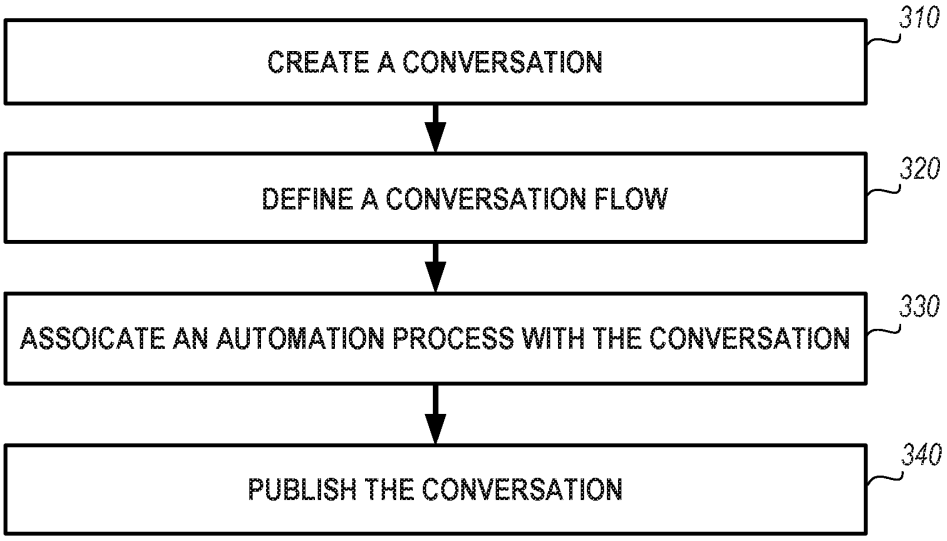

CREATE A CONVERSATION
310
DEFINE A CONVERSATION FLOW
320
ASSOICATE AN AUTOMATION PROCESS WITH THE CONVERSATION
330
PUBLISH THE CONVERSATION
340

FIG. 3

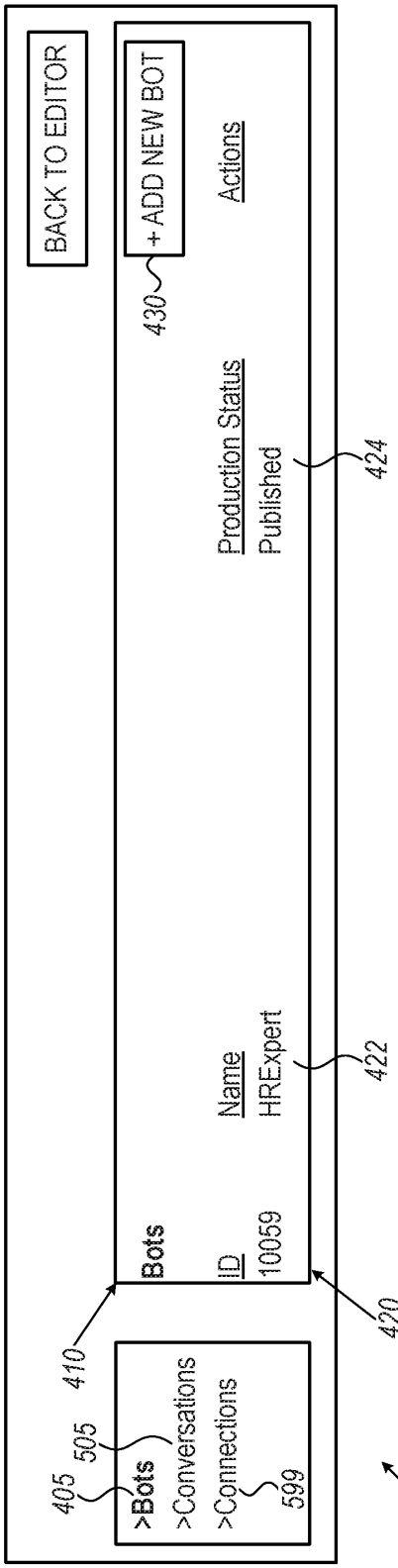

BACK TO EDITOR
+ ADD NEW BOT
430
Actions
Production Status
Published
424
Bots
ID
Name
10059
HRExpert
422
420
410
405
505
>Bots
>Conversations
>Connections
599
400

Fig. 4A

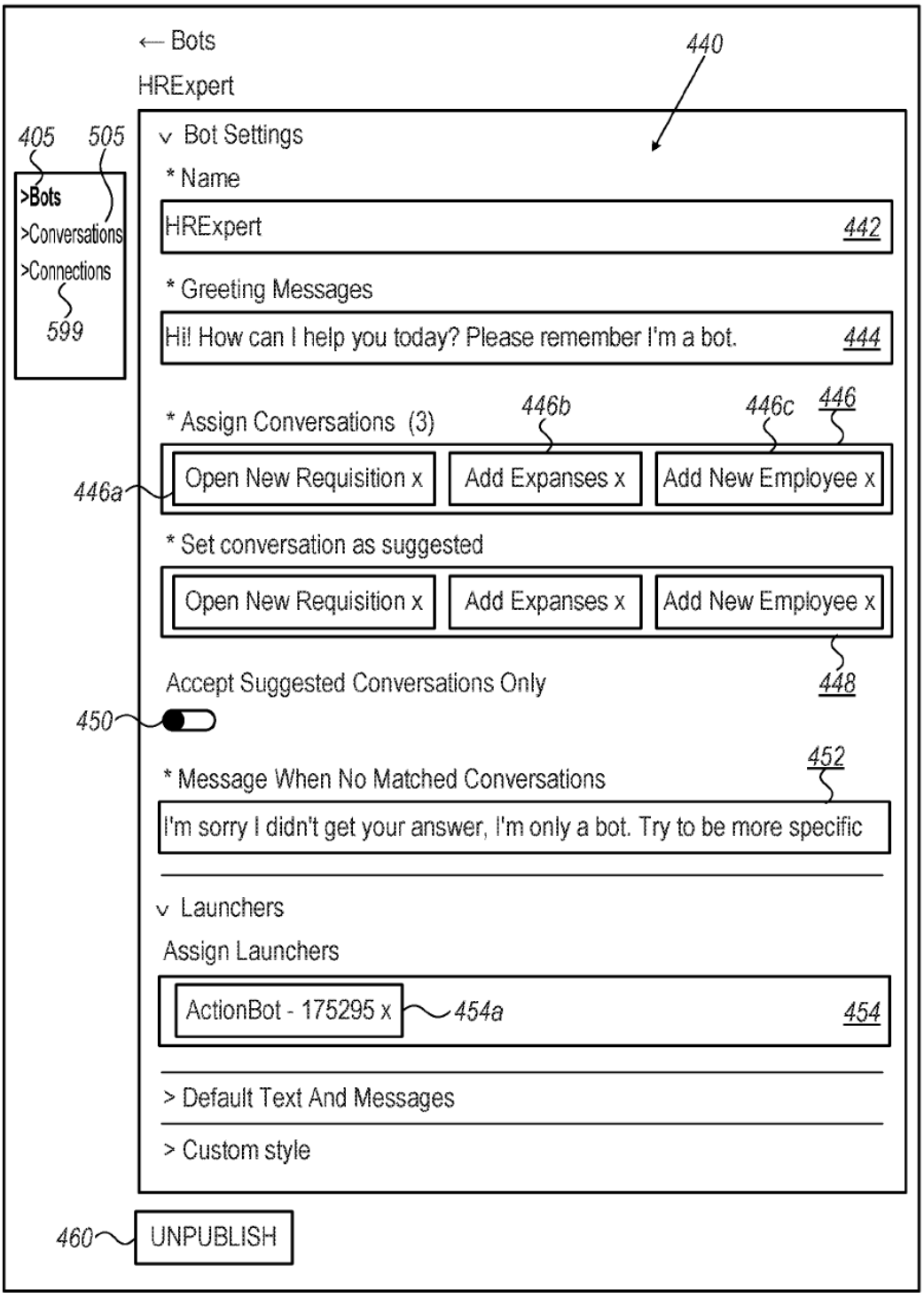

← Bots
HRExpert
440
405
505
>Bots
>Conversations
>Connections
599
Bot Settings
* Name
HRExpert
442
* Greeting Messages
Hi! How can I help you today? Please remember I'm a bot.
444
* Assign Conversations (3)
446b
446c
446
446a
Open New Requisition x
Add Expanses x
Add New Employee x
* Set conversation as suggested
Open New Requisition x
Add Expanses x
Add New Employee x
448
Accept Suggested Conversations Only
450
452
* Message When No Matched Conversations
I'm sorry I didn't get your answer, I'm only a bot. Try to be more specific
Launchers
Assign Launchers
ActionBot - 175295 x
454a
454
> Default Text And Messages
> Custom style
460
UNPUBLISH

Fig. 4B

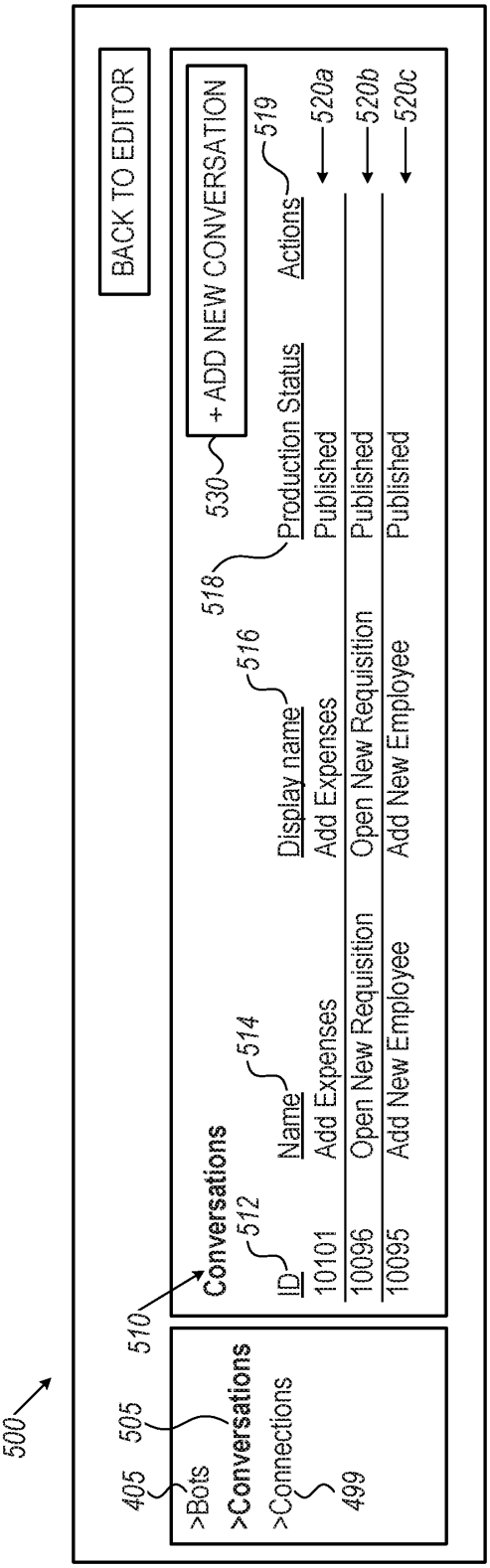

500
405
505
510
>Bots
>Conversations
>Connections
499
Conversations
512
514
516
518
530
519
520a
520b
520c
ID
Name
Display name
Production Status
Actions
10101
Add Expenses
Add Expenses
Published
10096
Open New Requisition
Open New Requisition
Published
10095
Add New Employee
Add New Employee
Published
+ ADD NEW CONVERSATION
BACK TO EDITOR

Fig. 5A

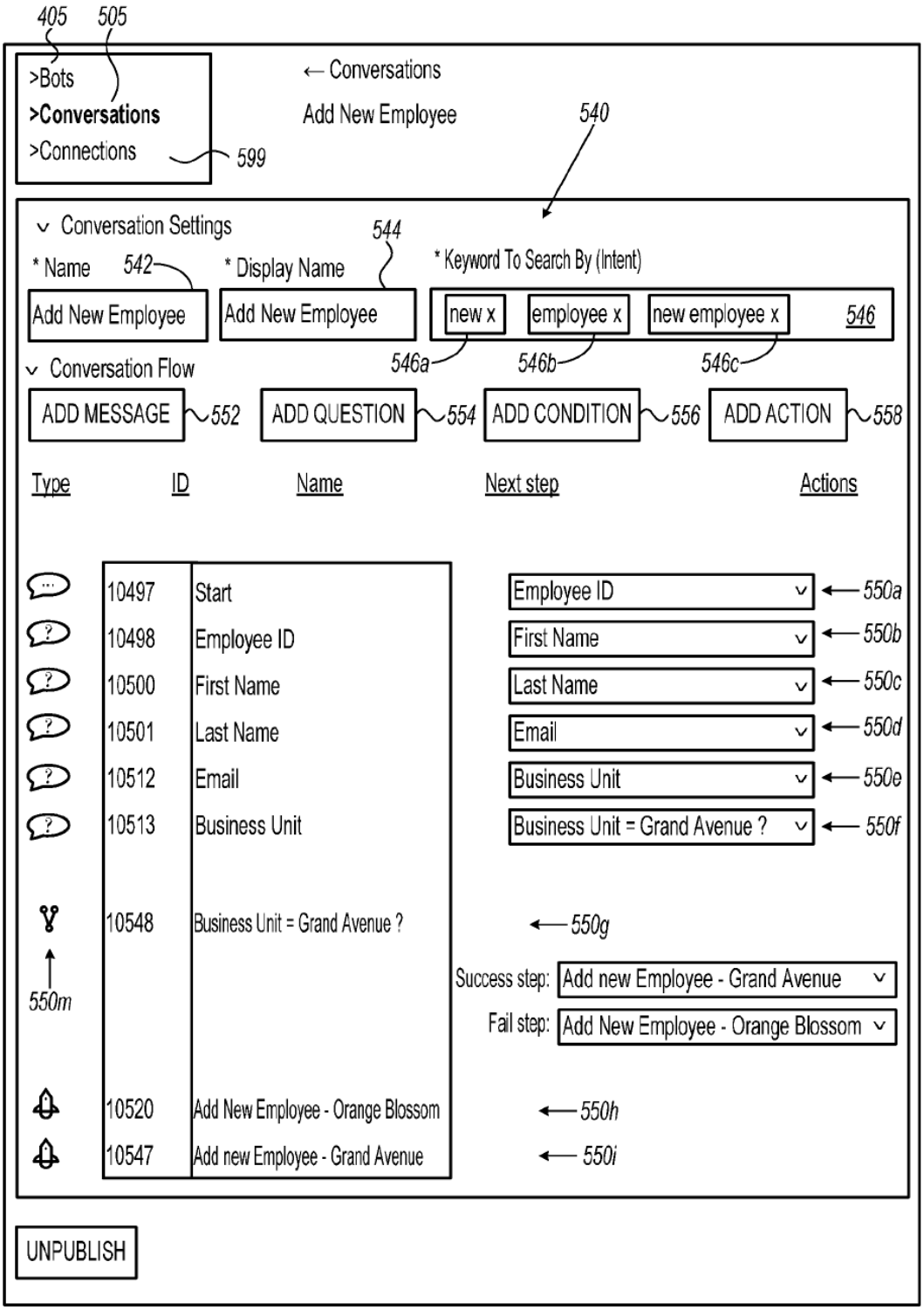

405
505
>Bots
>Conversations
>Connections
599
← Conversations
Add New Employee
540
Conversation Settings
544
* Name
542
* Display Name
* Keyword To Search By (Intent)
Add New Employee
Add New Employee
new x
employee x
new employee x
546
546a
546b
546c
Conversation Flow
ADD MESSAGE
552
ADD QUESTION
554
ADD CONDITION
556
ADD ACTION
558
Type
ID
Name
Next step
Actions
10497
Start
Employee ID
550a
10498
Employee ID
First Name
550b
10500
First Name
Last Name
550c
10501
Last Name
Email
550d
10512
Email
Business Unit
550e
10513
Business Unit
Business Unit = Grand Avenue ?
550f
10548
Business Unit = Grand Avenue ?
550g
550m
Success step:
Add new Employee - Grand Avenue
Fail step:
Add New Employee - Orange Blossom
10520
Add New Employee - Orange Blossom
550h
10547
Add new Employee - Grand Avenue
550i
UNPUBLISH

Fig. 5B

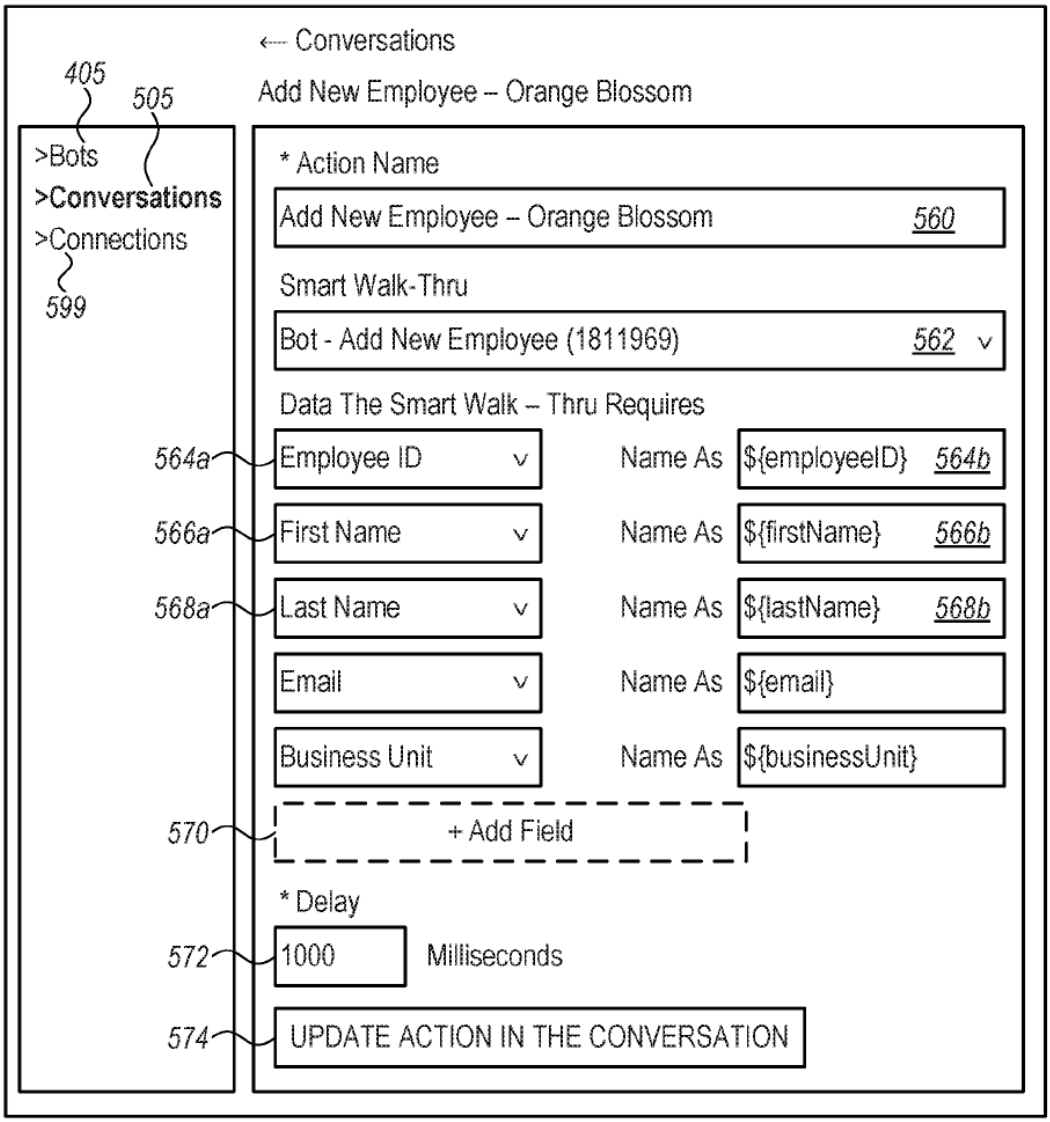

← Conversations
405
505
Add New Employee – Orange Blossom
>Bots
>Conversations
>Connections
599
* Action Name
Add New Employee – Orange Blossom
560
Smart Walk-Thru
Bot - Add New Employee (1811969)
562
Data The Smart Walk – Thru Requires
564a
Employee ID
Name As
${employeeID}
564b
566a
First Name
Name As
${firstName}
566b
568a
Last Name
Name As
${lastName}
568b
Email
Name As
${email}
Business Unit
Name As
${businessUnit}
570
+ Add Field
* Delay
572
1000
Milliseconds
574
UPDATE ACTION IN THE CONVERSATION

Fig. 5C

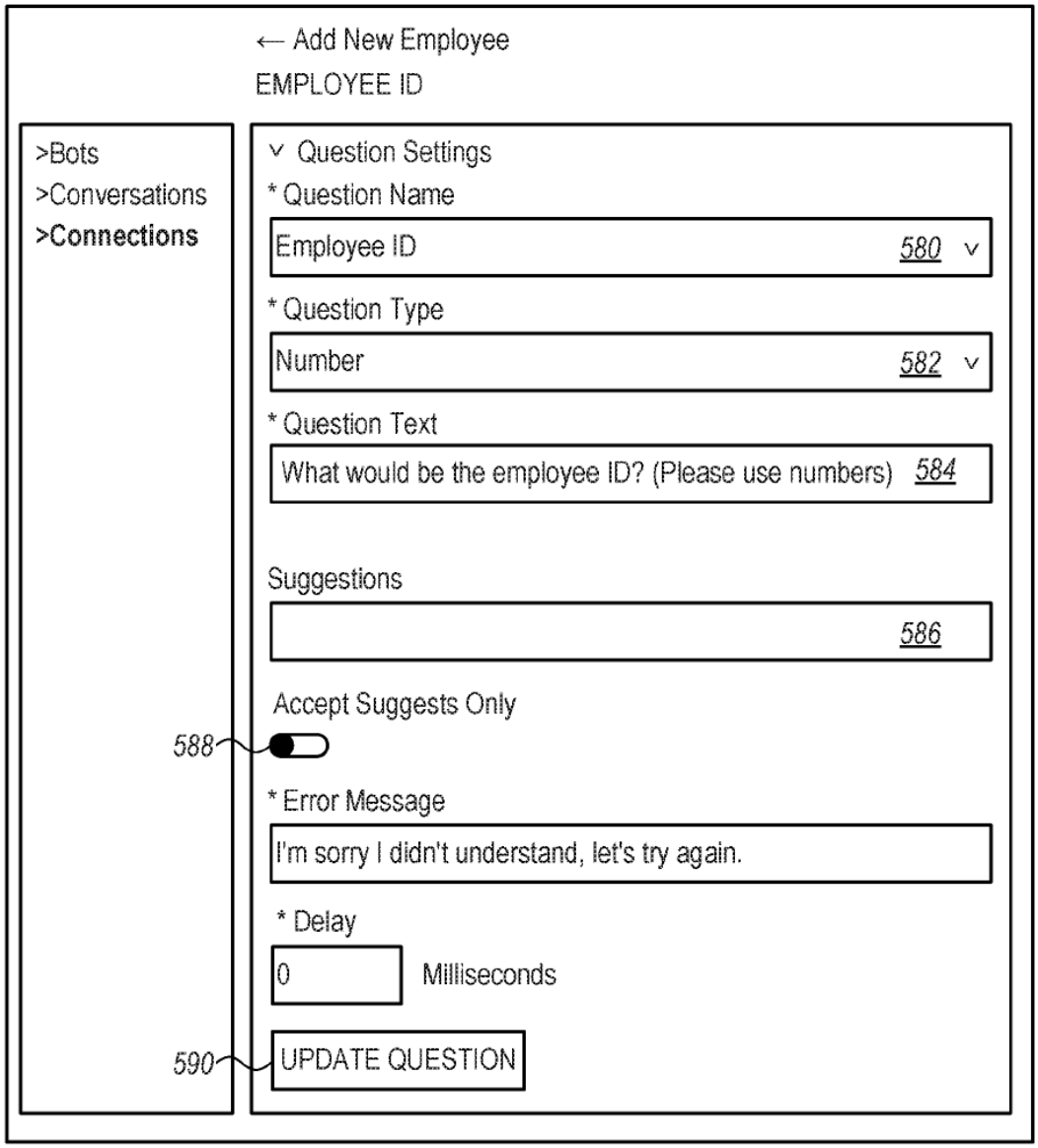

← Add New Employee
EMPLOYEE ID
>Bots
>Conversations
>Connections
Question Settings
* Question Name
Employee ID
580
* Question Type
Number
582
* Question Text
What would be the employee ID? (Please use numbers)
584
Suggestions
586
Accept Suggests Only
588
* Error Message
I'm sorry I didn't understand, let's try again.
* Delay
0
Milliseconds
590
UPDATE QUESTION

Fig. 5D

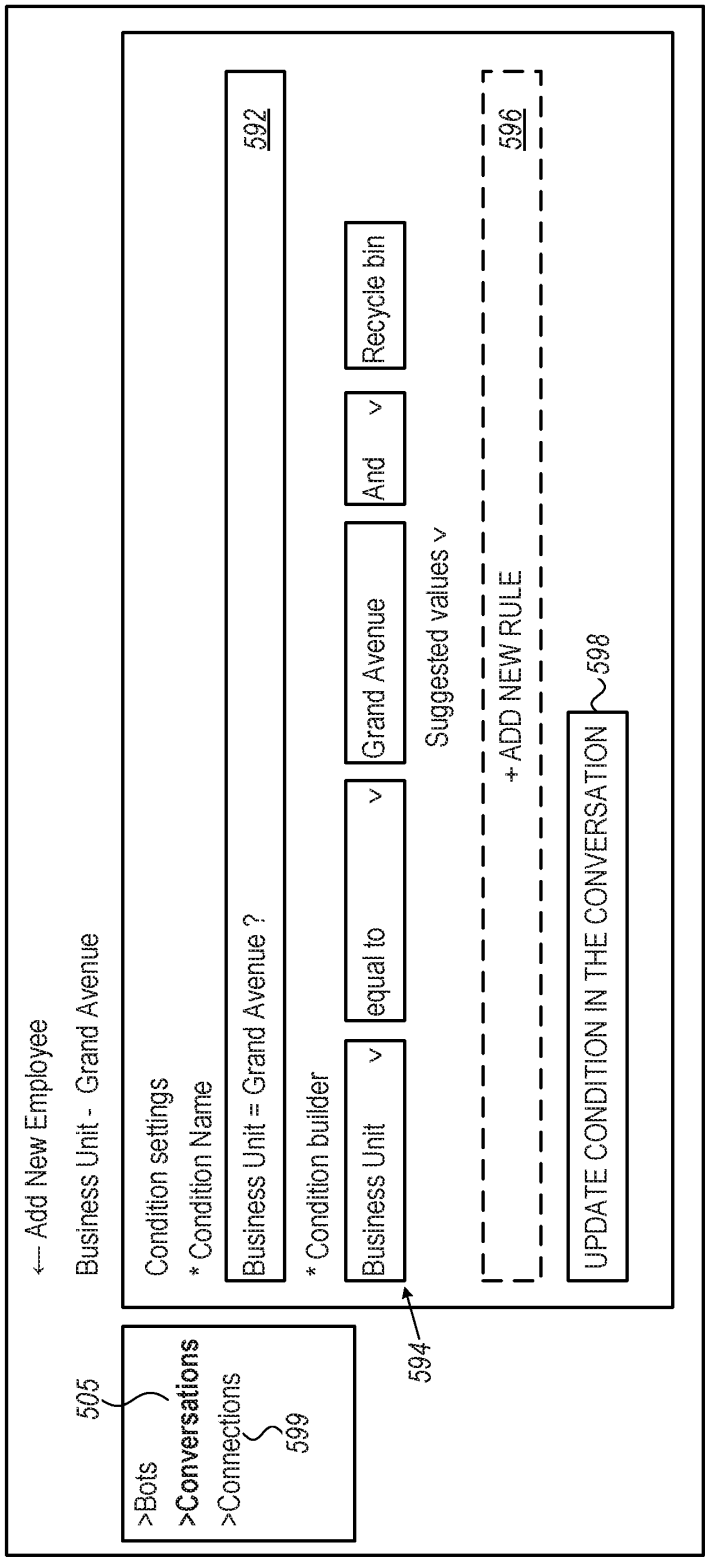

← Add New Employee
Business Unit - Grand Avenue
505
>Bots
>Conversations
>Connections
599
Condition settings
* Condition Name
Business Unit = Grand Avenue ?
592
* Condition builder
Business Unit
equal to
Grand Avenue
And
Recycle bin
Suggested values
+ ADD NEW RULE
596
UPDATE CONDITION IN THE CONVERSATION
598
594

Fig. 5E

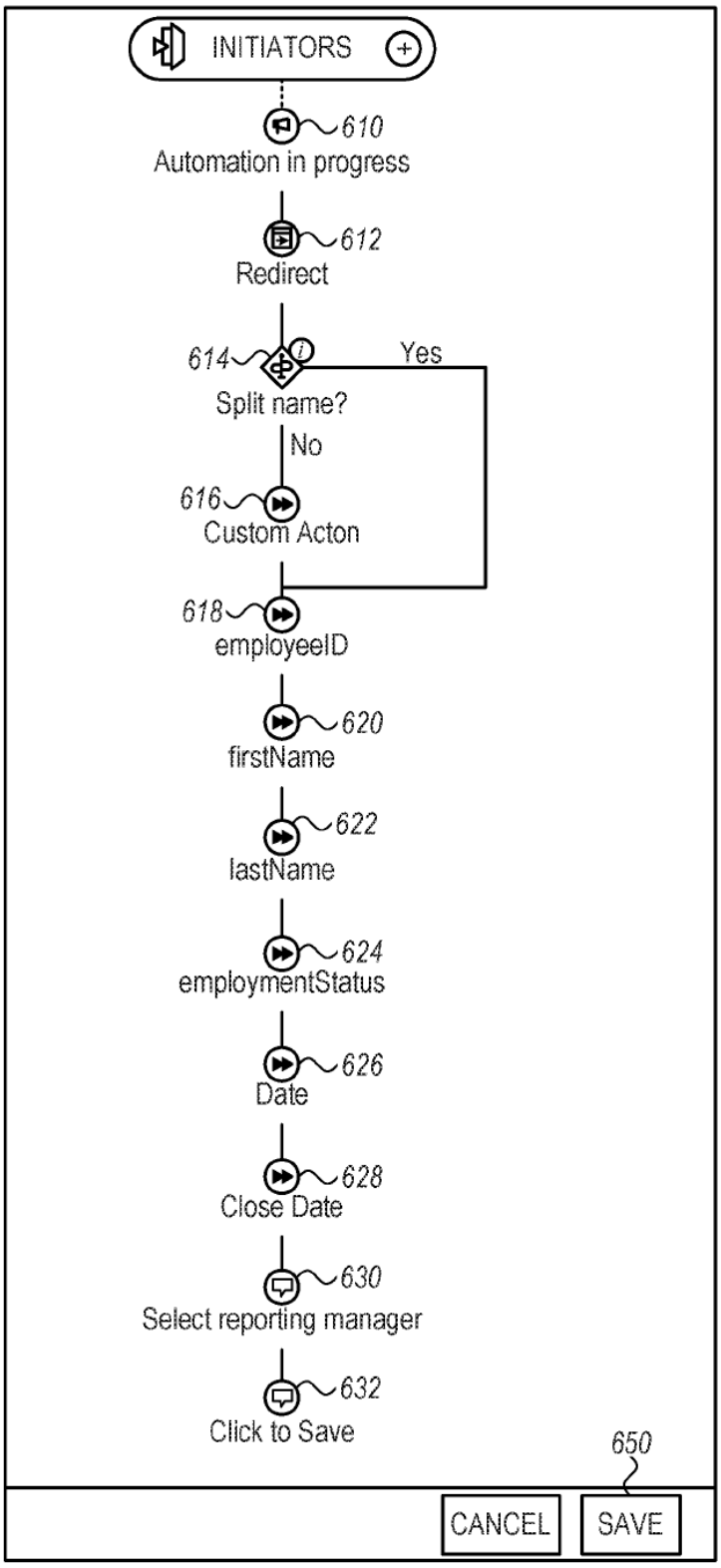

INITIATORS
610
Automation in progress
612
Redirect
614
Split name?
Yes
No
616
Custom Acton
618
employeeID
620
firstName
622
lastName
624
employmentStatus
626
Date
628
Close Date
630
Select reporting manager
632
Click to Save
650
CANCEL
SAVE

Fig. 6

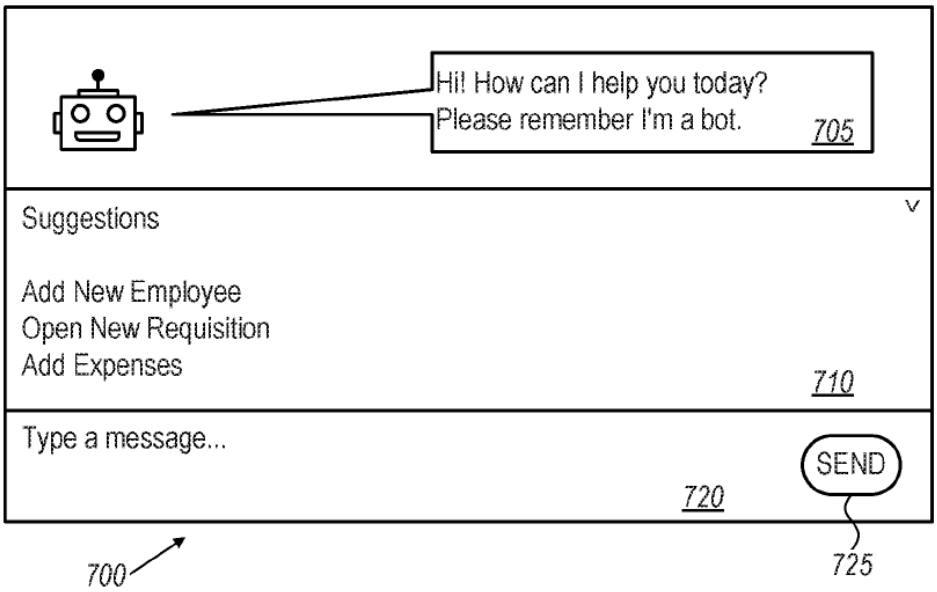

Hi! How can I help you today?
Please remember I'm a bot.
705
Suggestions
Add New Employee
Open New Requisition
Add Expenses
710
Type a message...
720
SEND
725
700

Fig. 7A

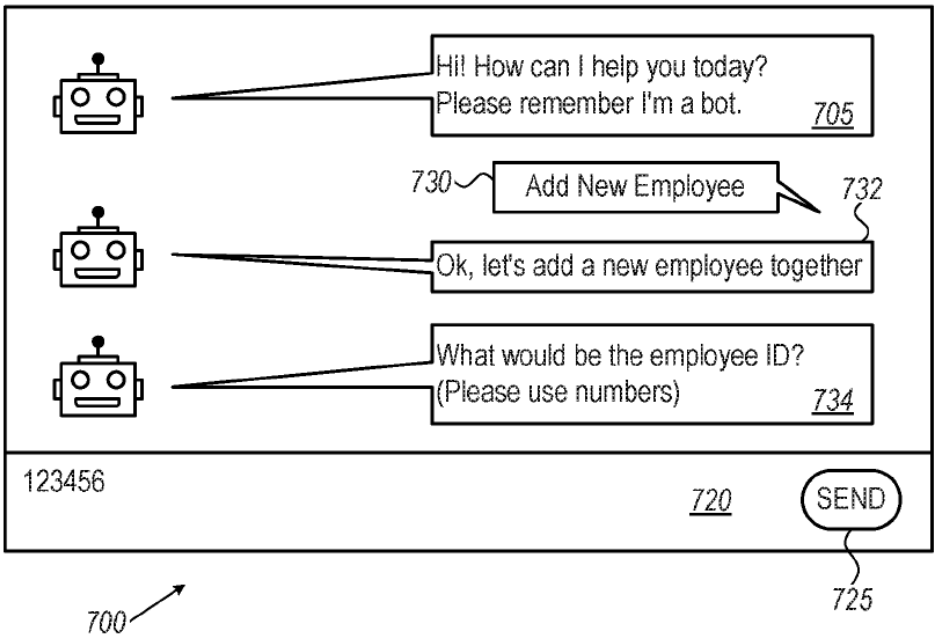

Hi! How can I help you today?
Please remember I'm a bot.
705
730
Add New Employee
732
Ok, let's add a new employee together
What would be the employee ID?
(Please use numbers)
734
123456
720
SEND
725
700

Fig. 7B

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Application Number	Herewith
Filing Date	March 19, 2019
First Named Inventor	Nir Nahum
Title	Chat-Based Application Interface for Automation
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	1179.0130 (583-6.3 NP)

SIGNATURE of Applicant or Patent Practitioner

Signature	/Mark I. Koffsky/	Date (Optional)	
Name	Mark I. Koffsky	Registration Number	41906
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

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SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	12/03/2019
Name	David Sussely		
Title	VP Finance		

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ABSTRACT

A method, apparatus and product for chat-based application interface for automation. Using a natural language interface, receiving user input. Based on the user input, determining an automation process of a computer program having a user interface (UI), to be executed. The automation process is executed by utilizing the UI to input data thereto or execute functionality thereof. Additionally or alternatively, a conversation to be implemented by a natural language interface may be defined. The conversation is configured to obtain from the user one or more values corresponding to one or more parameters. The conversation is associated with a parameterized automation process depending on the one or more parameters. The parameterized automation process is invoked automatically by a natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

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CLAIMS

What is claimed is:

1. A method comprising:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

2. The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. The method of Claim 1, wherein the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of:

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a page redirect step;

a click element step;

a hovering over element step;

a set focus to element step;

a select value from list step;

a fill input field with value step;

a prompt user step;

a time-wait step; and

a condition-wait step.

8. The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. The method of Claim 1, wherein the computer program is one of: a web-based application, a native mobile application, or a desktop program.

11. The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

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12. The method of Claim 11, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

13. The method of Claim 1, wherein said executing is performed on a client device of the user.

14. The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15. A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

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16. The method of Claim 15, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

17. The method of Claim 16, wherein the conversation elements comprise at least one of: a message element and a condition element.

18. The method of Claim 16, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

19. The method of Claim 15, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

20. The method of Claim 15, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

21. The method of Claim 20, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

22. The method of Claim 20, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

23. A computerized apparatus having a processor and coupled memory, the processor being adapted to perform:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

24. The computerized apparatus of Claim 23, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

25. The computerized apparatus of Claim 23, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

26. The computerized apparatus of Claim 23, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

27. The computerized apparatus of Claim 23, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

28. The computerized apparatus of Claim 23, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more

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users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

29. The computerized apparatus of Claim 23, wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

30. The computerized apparatus of Claim 23 wherein said processor is further adapted to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

31. The computerized apparatus of Claim 30, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

32. The computerized apparatus of Claim 23, wherein said executing is performed on a client device of the user.

33. A computerized apparatus for defining an automation process to be invoked in response to a conversation of a user with a natural language interface , wherein said

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computerized apparatus comprising a processor and coupled memory, the processor being adapted to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

34. The computerized apparatus of Claim 33, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

35. The computerized apparatus of Claim 34, wherein the conversation elements comprise at least one of: a message element and a condition element.

36. The computerized apparatus of Claim 34, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

37. The computerized apparatus of Claim 33, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations

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comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

38. The computerized apparatus of Claim 33, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

39. The computerized apparatus of Claim 38, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

40. The computerized apparatus of Claim 38, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

41. A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

42. The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the

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natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. The non-transitory computer readable medium of Claim 41, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

47. The non-transitory computer readable medium of Claim 41,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

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48. The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49. The non-transitory computer readable medium of Claim 48, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

50. The non-transitory computer readable medium of Claim 41, wherein said executing is performed on a client device of the user.

51. A non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language

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interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

52. The non-transitory computer readable medium of Claim 51, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

53. The non-transitory computer readable medium of Claim 52, wherein the conversation elements comprise at least one of: a message element and a condition element.

54. The non-transitory computer readable medium of Claim 52, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

55. The non-transitory computer readable medium of Claim 51, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

56. The non-transitory computer readable medium of Claim 51, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

57. The non-transitory computer readable medium of Claim 56, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

58. The non-transitory computer readable medium of Claim 56, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

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CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of provisional patent application No. 62/581,714 filed November 5, 2017, which is hereby incorporated by reference in its entirety without giving rise to disavowment.

TECHNICAL FIELD

[0001] The present disclosure relates to user interfaces in computerized system in general, and to user-interfaces for automation processes that utilize chat bots, in particular.

BACKGROUND

[0002] A Chat bot is a computer program implementing natural language interface to conduct a conversation via auditory or textual methods with the user. Chat bots are typically used in dialog systems for various practical purposes including customer service or information acquisition. Some chatterbots use sophisticated natural language processing systems, but many simpler systems scan for keywords within the input, then pull a reply with the most matching keywords, or the most similar wording pattern, from a database.

[0003] Nowadays, chat bots are starting to appear everywhere. From providing functionality via known communication services, such as FACEBOOK™, TELEGRAM™, or the like, to manipulating Internet of Things (IoT) devices via voice commands, such as using a smart speaker (e.g., GOOGLE HOME™, AMAZON ECHO™, or the like).

[0004] Implementing a new functionality via a chat bot may be a complicated task. For example, in the AMAZON ECHO™ ecosystem, developers can develop new "skills" using dedicated Application Programming Interface (API). A new skill for the smart speaker is a cloud-based service that is programmed to handle requests when invoked by the program of the smart speaker.

BRIEF SUMMARY

[0005] One exemplary embodiment of the disclosed subject matter is a method comprising: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0006] Optionally, the natural language interface is a chat bot service operable to converse with the user in natural language.

[0007] Optionally, the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0008] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0009] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0010] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0011] Optionally, the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of: a page redirect step; a click element step; a hovering over element step; a set focus to element step; a select value from list step; a fill input field with value step; a prompt user step; a time-wait step; and a condition-wait step.

[0012] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database

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is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

[0013] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0014] Optionally, the computer program is one of: a web-based application, a native mobile application, or a desktop program.

[0015] Optionally, the method comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0016] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0017] Optionally, said executing is performed on a client device of the user.

[0018] Optionally, the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

[0019] Another exemplary embodiment of the disclosed subject matter is a method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to

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obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0020] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0021] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0022] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0023] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0024] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

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[0025] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

[0026] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

[0027] Yet another exemplary embodiment of the disclosed subject matter is a computerized apparatus having a processor and coupled memory, the processor being adapted to perform: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0028] Optionally, the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0029] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0030] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0031] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0032] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of

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defining new automation processes and updating existing automation processes retained therein.

[0033] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0034] Optionally, said processor is further adapted to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0035] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0036] Optionally, said executing is performed on a client device of the user.

[0037] Yet another exemplary embodiment of the disclosed subject matter is a computerized apparatus for defining an automation process to be invoked in response to a conversation of a user with a natural language interface , wherein said computerized apparatus comprising a processor and coupled memory, the processor being adapted to perform: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

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publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0038] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0039] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0040] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0041] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0042] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

[0043] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

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[0044] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

[0045] Yet another exemplary embodiment of the disclosed subject matter is a non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0046] Optionally, the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0047] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0048] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0049] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0050] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

[0051] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the

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element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0052] Optionally, the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0053] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0054] Optionally, said executing is performed on a client device of the user.

[0055] Yet another exemplary embodiment of the disclosed subject matter is a non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked

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automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0056] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0057] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0058] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0059] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0060] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

[0061] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

[0062] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

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THE BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0063] The present disclosed subject matter will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which corresponding or like numerals or characters indicate corresponding or like components. Unless indicated otherwise, the drawings provide exemplary embodiments or aspects of the disclosure and do not limit the scope of the disclosure. In the drawings:

[0064] Figure 1 shows an illustration of an environment, in accordance with some exemplary embodiments of the disclosed subject matter;

[0065] Figures 2A-2C show flowcharts of methods, in accordance with some exemplary embodiments of the disclosed subject matter;

[0066] Figure 3 shows a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter;

[0067] Figures 4A-4B show schematic illustrations of user interfaces, in accordance with the disclosed subject matter;

[0068] Figures 5A-5E show schematic illustrations of user interfaces, in accordance with the disclosed subject matter;

[0069] Figure 6 shows a schematic illustration of a user interface, in accordance with the disclosed subject matter; and

[0070] Figures 7A-7B show schematic illustrations of user interfaces, in accordance with the disclosed subject matter.

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DETAILED DESCRIPTION

[0071] One technical problem dealt with by the disclosed subject matter is to provide for a user-friendly manner of defining functionality of chat bots. In particular, defining automation processes to be invoked by chat bots, either dedicated chat bots, such as implemented on a target system where the functionality is invoked, or even using third-party services, such as FACEBOOK MESSENGER™ are the communication platform for the chat bot service, which later invokes the automation process itself on the target system.

[0072] The chat bot may be a service that simplifies the end-user experience by collecting data from him and executing a predefined automation flow on the target system. The chat bot may implement a natural language interface, such as a text-based conversation, an oral conversation, or the like. The target system, generally referred to as the computer program, may be a website, a web-based system, a native mobile application (e.g., executed in a protected sandbox), a desktop application (e.g., executed in a process of a non-sandbox-based operating system), or the like. The target system may have a user interface, such as a Graphical User Interface (GUI), that the user may utilize in order to activate the functionalities of the target system.

[0073] As an example, if the user wishes to buy stocks on his bank account, he can use the website of the bank. Alternatively, the user may converse with a chat bot that is provided on the bank's website that is capable of asking her all the relevant information for filling the online stock purchase form and then run a predefined automation on top of the bank's website.

[0074] As yet another example, a third-party messaging service may be used to converse with a chat bot service. For example, SLAKC™ and TELEGRAM™ allow defining chat bot services as users in the chat service. Users can communicate with such non-human users in the same manner they communicate with other human users. For example, the user may chat with a chat bot named "HR Bot" who may provide Human Resources (HR)-related functionality.

[0075] It may be desired to enable defining the chat bots without the need of using dedicated APIs, programming languages, or the like. It may be desired that non-programmers may be able to define the automations that are invoked by the chat bots.

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[0076] In some cases, adoption of new software may be a challenge to companies. Enterprises may use many different software tools for different purposes, such as HR, Customer Relation Management (CRM), Finance, Task Management, Project planning, or the like. Integration of a new system into an organization may be a challenge as it may require migrating large amounts of employees to new platforms, requiring that the users be trained in using the new system. A chat bot, on the other hand, may abstract away the actual system. Instead of relying on the user's familiarity with the system, the automation process may be in charge of the actual use of the system. The chat bot may simply extract the user's intention, identify the relevant action to be performed, and extract relevant information to be used as part of the automation process.

[0077] Another technical problem may be to enable defining automation processes in a manner that enables them to be implemented even if changes are performed to the underlying platform. For example, it may be desired that the automation process will continue working even in the face of layout modifications of the front-end of the program or website. In some cases, it may be desired to be able to identify elements selected during the definition of the automation process during execution thereof. The identification may be a non-trivial task if no unique identifier exists, as may be the case in many instances. Still, it may be desired to be able to identify such element correctly so as to apply the actions defined by the automation process.

[0078] One technical solution provided by the disclosed subject matter may be to use a natural language interface to receive input from the user, and based thereon, select an automation process to be executed. The automation process may be executed in a manner that manipulates the GUI of the target system, in a similar manner to the manner in which the user operates. As a result, definition of the automation process may be defined by non-programmers.

[0079] Defining the automation process based on performing actions in the GUI enables the automation process to perform any functionality that the user can perform, without relying on dedicated APIs and without requiring any line of code. The parameters of the conversation, as well as the flow of the automation process, may be defined using a point and click editor, or other user interface that can be used by any non-programmer users.

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[0080] In some cases, if the target system is replaced, the same chat bot conversation may be used to gather the relevant information and the automation process that is invoked may be replaced. The underlying system may be abstracted away and the user may use the simple and convenient chat bot service as the only user interface.

[0081] Additionally or alternatively, different functionalities may be implemented and there may be no limit to what the chat bot can invoke, except for the limitations of the target system's own capabilities. A novice user may define in a simple manner the parameters of the conversation that the chat bot implements, and the automation process that would be executed based thereon. Using this seemingly simple techniques, a fast and efficient manner of providing chat bot functionalities is enabled.

[0082] In some exemplary embodiments, the chat bot may be implemented on a different system than the target system itself, such as a third-party messaging service. As a result, it may be desired to enable third-party messaging service to invoke the automation process in a simple manner and without relying on coding or on dedicated APIs. In some exemplary embodiments, the chat bot service may generate a link, such as a web link (e.g., a link to a website), a deeplink to a mobile application (e.g., waze:// link to the WAZE™ mobile application), a link to a local desktop agent (e.g., walkme:// link to the WALKME™ desktop agent), or the like. The link may be presented to the user in the messaging service and the user may click the link. In response to the link being clicked, the target system may be opened and the automation process may be executed.

[0083] In some exemplary embodiments, the chat bot may collect information to be used as part of the automation process, such as values to be inputted in input fields, selections to be made in the GUI of the target system, or the like. The information may be provided to the automation process via the link. In some cases, the link may comprise a query string indicating a conversation identifier. The conversation identifier may be a unique identifier of the chat bot session with the user. Before generating the link, the information gathered by the chat bot may be stored in a database with a record whose key is the conversation identifier. After the link is traversed, the conversation identifier is obtained from the query string, and the record is retrieved from the database using the conversation identifier. The collected information itself may be used by the client device when executing the automation process. Additionally or alternatively, the link may

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comprise the values of the parameters themselves explicitly in the link, enabling to avoid using a database to indirectly pass the information and instead pass it directly via the link.

[0084] In some exemplary embodiments, a chat bot service may be associated with different conversation flows. Each conversation flow may be associated with one or more automation processes that can be invoked. A non-programmer user may define the association therebetween and define when each conversation flow is selected, and in which conditions, each automation process is invoked.

[0085] An automation process may be a dynamically adaptable tutorial, such as described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials", which is hereby incorporated by reference in its entirety for all purposes without giving rise to disavowment. The automation process may define a sequence of steps to be performed. In some exemplary embodiments, some steps may be associated with control flow of the sequence, such as a branching step. Additionally or alternatively, some steps may be associated with performing an action on a GUI element, also referred to as widget. Additionally or alternatively, some steps may be associated with a condition that is based on content of a GUI element.

[0086] In some exemplary embodiments, there may be a unique identifier for the widget. For example, a unique id for each element, A Cascading Style Sheet (CSS) selector in a web application, a path to a mobile element, or the like. Selection may be implemented using such unique identifier.

[0087] In some exemplary embodiments, there may not be any unique identifier for the widget. For example, the widget may be a button, having a text label "SET", a color parameter, a length parameter, a height parameter, an associated URL that is activated upon clicking thereon, or the like. None of the parameters may be unique to the widget itself. Still, it may be desired to provide for an identification manner of a widget. Additionally or alternatively, the widget may be modified in the GUI, such as its color may be changed, its text may be modified, it may be enlarged or shrinked and the URL may be switched.

[0088] In some exemplary embodiments, the identification may be performed in a probabilistic manner. Each widget of the same target type appearing in the relevant screen of the GUI may be examined. Each of the parameters used for identifying the widget-of-

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interest is compared to the parameter of the examined widget and a similarity score may be computed. The examined widget having the highest similarity score may be determined to be the widget-of-interest. In some exemplary embodiments, in case the highest similarity score is below a predetermined threshold, it may be determined that the widget-of-interest was not located. It is noted that the parameters used for identification of the widget-of-interest may be a subset of the available parameters thereof. Additionally or alternatively, existing parameters in the examined widget that are not part of the parameters of widget-of-interest may reduce the similarity score. Consider, for example, a button widget which does not have a URL to be followed upon click. A button widget that does comprise such URL is less likely to be the same widget-of-interest than another widget that does not have a URL. Additionally or alternatively, the parameters may comprise relative parameters indicating relations to other widgets, such as encapsulated within another element, located in a relative location to another widget, or the like. As the overall layout may expect to remain similar in different version of the target system, such relative parameters may be useful as a hint to indicate whether the examined widget is indeed the widget-of-interest. The relative parameters may refer to other elements, who may be also be identified in a probabilistic manner themselves. Additionally or alternatively, the other elements may be identified using a unique identifier, or using another method.

[0089] One technical effect of the disclosed subject matter may be to provide abstraction of the way users, such as employees in an organization and clients of an enterprise, use different platforms and simplify complicated processes for them with a unified, and simple, conversational-based user interface.

[0090] Another technical effect may be to provide a chat bot designing process that does not require coding or using designated API. This may allow to bypass the requirement of having the target system expose an API for each potential functionality. Instead, the GUI itself, which already exists in the target system, is used as the API-substitute. Exposing an API may be time-consuming task in some cases, but in many cases it may not be feasible as the target system may be owned by a third-party who may not wish to expose an API and who may not wish to allow external automation.

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[0091] Yet another technical effect may be to avoid security issues. With API calls, there may be potential security issues, if the API is manipulated. Instead, the disclosed subject matter uses the GUI itself, and the actions may be performed behalf of a logged-in user, under her authority. No additional security issues are created due to the use of the disclosed subject matter, as opposed to potential vulnerabilities that may be introduced when an API is published and made available.

[0092] Yet another technical effect may be enabling abstraction of the interface of the target system. Modifications to the target system's interface may be transparent to the automation process, which may continue to function as before, due to its dynamic capabilities. Additionally or alternatively, even extensive changes in the UI and even replacing the target system altogether may be handled quickly and simply using the disclosed subject matter by modifying the automation process accordingly and adjusting the chat bot to invoke the modified automation process instead of the original one. The conversation itself may still follow the same flow and the user may be unaware of the extensive modifications to the underlying target system.

[0093] The disclosed subject matter may provide for one or more technical improvements over any pre-existing technique and any technique that has previously become routine or conventional in the art.

[0094] Additional technical problem, solution and effects may be apparent to a person of ordinary skill in the art in view of the present disclosure.

[0095] Referring now to Figure 1 showing a computerized environment in accordance with some exemplary embodiments of the disclosed subject matter.

[0096] A Chat Bot Editor 110. Editor 110 may enable a non-programmer user (not shown) to define a flow of conversation for a chat bot. The user may define which questions the bot would ask, which remarks it will make, flow control operations that may be based on evaluated conditions, such as branching operations, or the like. Additionally or alternatively, the user may define for a conversation flow which automation process is invoked thereby and which parameters are passed thereto. Additionally or alternatively, the user may define that a conversation is associated with multiple automation processes, one of which may be selected based on the interaction with the user. Additionally or alternatively, Editor 110 may define several different

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conversation for a single chat bot (e.g., HR Bot). The bot may be defined to select the correct conversation to follow based on user input, such as explicit selection, implicit identified intent, or the like.

[0097] In some exemplary embodiments, Editor 110 may be configured to store the definitions of the conversation in a database, such as Conversation Definitions 102. Conversation Definitions 102 can be accessed at runtime when the chat bot service is being executed.

[0098] Launcher Module 120 may be configured to provide a launcher widget in the target system. For example, a bot-icon may be presented in a corner of the screen of the GUI. Pressing on the bot-icon may launch the Chat Bot Front-End Module 130.

[0099] Chat Bot Front-End Module 130 may be configured to enable a User 190 to interact with a chat bot. User 190 may converse with the chat bot using natural language, such as using written text in a messenger-like UI, using oral conversation such as by providing oral instructions that may be translated to text using speech-to-text methods, or the like. Chat Bot Front-End Module 130 may be a front-end of the chat bot that may be implemented by a dialog processor service (not shown) that may be executed, for example, by a cloud-based platform. In some exemplary embodiments, the dialog processor service may be a microservice. The dialog processor service may access Conversation Definitions 102 to determine the flow of conversation, to determine which question to ask the user, what to do with the provided answer, match values to parameters, or the like.

[0100] In some exemplary embodiments, Chat Bot Front-End Module 130 may be a front-end of a third-party communication service that enables integration of a chat bot service, such as using a non-human user representing the chat bot.

[0101] Upon a determination of an automation process to be invoked, as may be determined by the dialog processor service based on the Conversation Definitions 102 of the executed conversation, an Automation Execution Module 140 may be invoked. Automation Execution Module 140 may be configured to execute, on the client-side, the automation process. In some cases, the automation process may be a dynamically adaptable tutorial that is invoked. Additionally or alternatively, the automation process may be a dynamically adaptable process that is not a tutorial per se, as the process may

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not require that each step be shown and explained to the user. In some cases, the process may be performed automatically or semi-automatically. For example, consider a vacation request from an HR bot. The process may be performed automatically to prepare the vacation request by filling a relevant online form. The automation process may request that the user validate the content of the form before its submission, and hence it may require some user assistance.

[0102] In some exemplary embodiments, Automation Execution Module 140 may utilize client-side code for website target systems. For example, a JavaScript library running on the website itself and executed by the browser may be utilized. The JavaScript library may be embedded in the code of the website. Additionally or alternatively, the JavaScript library may be imported into the code of the website. Additionally or alternatively, the JavaScript library may be injected to the HTML code using a browser extension on the fly, to provide a solution that need not cooperation of the owner of the website. The client-side code (e.g., JavaScript library) may have access to read and write the entire HTML code of each web page. Thus, the automation may be able to find elements in the HTML, check their values and manipulate them. The automation may also change the page's URL and create new elements on the page (for example: popup balloons).

[0103] In some exemplary embodiments, Automation Execution Module 140 may utilize a native library which runs in the host application in case of mobile applications. Mobile applications may be executed on a sandboxed-based operating system, such as iOS™ or ANDROID™, where each application is executed in a separate sandbox. A Software Development Kit (SDK) of the native library can be compiled with the host application if the owner of the host application cooperates. Additionally or alternatively, the SDK may be injected from outside, obliviating the need cooperation of the owner of the application. In such a case, the cooperation of the User 190 may be required, such as by installing a program for injecting the SDK to the host application. As the SDK is injected to the host application, the automation may access the UI elements of the application and this is able to find elements, check their values and manipulate them. New elements may also be created, as needed, on the fly.

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[0104] In some exemplary embodiments, Automation Execution Module 140 may execute automation process on a desktop application that is executed on a non-sandboxed operating system, such as WINDOWS™ or LINUX™. An agent may be installed on the user device. The agent may access other applications, including their UI elements, manipulate such elements and create new elements.

[0105] One or more of the above-mentioned components may be connected to a Network 105, such as intranet, Local Area Network (LAN), the Internet, or the like.

[0106] Referring now to Figure 2A showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0107] On Step 210, a chat bot is launched. The chat bot may be launched in response to a user clicking on a launch icon, in response to a user command, in response to a user clicking on a physical button, in response to a vocal command (e.g., "OK Siri", "Hey Google"), or the like. In some exemplary embodiments, the user may launch a third-party communication service, such as WHATSAPP™, TELEGRAM™, SLACK™, or the like, and select to converse with a non-human user, representing a chat bot.

[0108] On Step 220, a conversation of the chat bot is selected. The conversation may be selected based on explicit selection by the user, based on implicit selection inferred from the user's intent, or the like. The chat bot may be associated with a plurality of potential conversations, defined in a definitions database, such as 102 of Figure 1. Based on processing of the user's interaction with the chat bot, such as using Natural Language Processing (NLP) techniques, it may be determined which conversation is the most likely conversation and such a conversation may be suggested to the user for confirmation.

[0109] On Step 230, the conversation may be implemented. The chat bot service may execute the conversation flow by following the flow defined for the conversation (232). The flow may define announcements that the chat bot service would provide to the user. The announcements may appear as part of a conversation that the chat bot provides, either in written or vocal communication, depending on the modality of the chat bot. The announcements may be fixed and predetermined. Additionally or alternatively, the announcements may be parameterized and be modified based on previous answers by the user, previous messages provided by the user, based on user-related data, contextual information, or the like. The flow may define conditions for evaluation and branching

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instructions or other control flow instructions that rely on the evaluated value. The flow may define questions configured to extract information from the human user (234). The questions may define a name of a parameter to which the information would be assigned and a type and/or a domain thereof (e.g., text, text matching a predetermined pattern, an integer, an integer within a range, or the like). The values of the parameters may be utilized for setting values of parameters in a parameterized automation process, thereby adjusting the parameterized automation process based on the answers of the user. The adjustment may comprise causing the automation process to input user-defined values to input texts, select different elements, set different conditions, or the like.

[0110] On Step 240, an automation process may be selected. The automation process may be selected based on the flow of the conversation. In some exemplary embodiments, a conversation may be associated with several automation processes that are selected based on the user's interaction with the chat bot. Additionally or alternatively, the conversation may be associated with a single conversation that is selected upon reaching the end of the flow of the conversation.

[0111] On Step 250, the automation process may be executed. In some exemplary embodiments, the automation process may be a parameterized automation process that is executed using the values of the parameters obtained during the conversation session (e.g., Step 234). The automation process may be executed on the client device. In some exemplary embodiments, the user may a-priori install a computer program product on her client device, such as a desktop agent, a browser extension, or the like, to enable execution of automation processes for target programs and systems that do provide direct support for the disclosed subject matter. Additionally or alternatively, in case of a target program that is supported by the disclosed subject matter, such as a website already having embedded therein the relevant client-side code, no installation of an additional client-side program may be required.

[0112] The automation process may be defined by a user of an editor, such as system operator. The definitions of the automation process may be stored in a database and retrieved on the client-side for execution. The automation may be a flow that comprises steps in a predefined order. The flow may comprise control flow steps, such as branching

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steps that depend on conditions. After a step is executed, a succeeding step in the flow may be executed.

[0113] In some exemplary embodiments, the following actions can be defined in the editor and will then cause the corresponding steps to occur in an automation:

[0114] A split step may comprise a parameter of type "Rules". Upon execution of the split step, the parameter of the steps may be evaluated. If the rule is evaluated to true, a true branch is traversed to reach to a next step (e.g. "then step"). If the rule is evaluated to false, a false branch is traversed to reach to a different step (e.g., "else step).

[0115] A redirect to a URL step may comprise a String parameter named URL and a Boolean parameter named "Don't redirect if URL is identical". If the "Don't redirect if URL is identical" parameter is false or if the current URL of the browser does not equal the URL parameter, the browser is redirected to the URL parameter.

[0116] Clicking on screen elements step may comprise an element description of the element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a click action thereon. As an example, the element-of-interest may be a clickable object, a button, or the like.

[0117] Hovering on screen elements step may comprise an element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a mouse hover event over the element-of-interest. As an example, the element-of-interest may be a menu element, an element having a tooltip, or the like.

[0118] Focusing on screen elements step may comprise an element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates an element focus event for the element-of-interest. For example, the element-of-interest may be a text input field which may be manipulated to receive focus, enabling the inputting of texts thereto.

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[0119] Select list value of on-screen elements step may comprise an element-of-interest and a String value. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a selection of the value from the list defined in the element-of-interest.

[0120] Filling an input field step may comprise an element-of-interest, a String text, a parameter name, or the like. The value to be inputted to the element-of-interest can be a fixed value (the String text parameter). Additionally or alternatively, the value may be retrieved from a parameter, whose value is set during the conversation. The name of the parameter may be provided as a parameter to the step (e.g., parameter name). The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a user filling input to the element-of-interest, either a fixed value or a value of the parameter.

[0121] Prompting the user step. The automation process may prompt the user, such as using a popup, a balloon, a tooltip, or the like. As an example, if the user is required to enter her password, this step may be used. The step may comprise a String variable named "prompt text" providing the content of the prompt itself, a parameter defining a type of prompt, or the like. In some exemplary embodiments, the step may comprise an element-to-bound which may be used as an anchor point to which the prompt is tied. The element-to-bound may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like.

[0122] Wait for a predefined time step may comprise an integer variable named "seconds". The step may be executed by starting a timer for the number of seconds defined in the step. After the time elapses, the automation process continues execution.

[0123] Wait for a condition step may comprise a wait condition provided in the form of a variable of type "Rules". For example, a wait step may be defined to wait for an on-screen element to appear.

[0124] Show a message step may be a step for presenting a message to the user. The message may be used for indicating, for example, success of the automation. A message content may be defined for the message step.

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[0125] Variables of type "Rules" may comprise one or more Boolean statements that are connected using logical operators, such as OR, AND, XOR, IFF, or the like. The disclosed subject matter may support a plurality of statements. Non-limiting examples are described: an on screen element exists, does not exist, visible, hidden, or the like; a statement regarding a text label of an on screen element (e.g., String conditions such as contains, length, or the like); a statement regarding a text of the current URL (e.g., String conditions such as contains, length, substring, etc.); checking values of in-app variables; checking an in-app storage value (e.g., cookies, etc.); checking browser type; checking operating system type; checking current date/time; or the like.

[0126] Referring now to Figure 2B showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0127] In Figure 2B, a chat bot implemented using a third-party platform is utilized. The chat bot conversation is performed in the user interface of the platform, which may not have a configurable interface, let alone one that does not require programming and using of APIs, to the target system.

[0128] On Step 260a, after the automation process to be executed is selected (240), a link is generated. The link comprises all the information needed for the automation process. For example, if the automation process is a parameterized automation process, the link may comprise the values of the parameters. In some exemplary embodiments, the link may comprise a query string indicating the values of each parameter of the parameterized automation process. Additionally or alternatively, the link may be defined to invoke a GET HTTP request, a POST HTTP request, or the like, to pass the values of the parameters to the invoked location. As an example, a link for an automation process in the mobile application WAZE™ may be: waze:///?automationFlowId=123&param1=abc&param2=def, defining the values of two parameters (param1, param2).

[0129] On Step 262, the link is provided to the user via the chat bot session. As an example, the chat bot may provide a message stating: "Click here and I'll do what you asked: [URL]", where URL is replaced with the generated link.

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[0130] On Step 264, after the user clicked on the link, the automation process may be executed. In case of a parameterized automation process, the values of the parameters may be retrieved from the link.

[0131] In some exemplary embodiments, the invocation of the automation process in a desktop application may comprise a link in Uniform Resource Identifier (URI) scheme to the local desktop agent may be provided. After the link is traversed, the local desktop agent may launch the target desktop application. If the agent determines that the target desktop application is already operating, it may avoid re-launching it.

[0132] Referring now to Figure 2C showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0133] On Step 260b, a link with a conversation identifier may be generated. Similarly to the link of Step 260a, the link provides the values of the parameters. However, instead of explicitly providing the values in the link, a unique conversation session identifier is allocated and used to identify the conversation session. Consider again the example of the WAZE™ mobile application, the link may be: waze://?conversationResultId=123, wherein the conversationResultId is the conversation session identifier.

[0134] On Step 261, the values of the parameters, as determined during the implementation of the conversation based on the user's responses (Step 230), are stored in a database accessible from the target system. The parameters are stored in a record retrievable using the conversation session identifier (e.g., conversationResultId).

[0135] On Step 266, the parameters values may be retrieved from the record using the conversation session identifier. In some exemplary embodiments, after retrieval thereof, the record may be deleted and the unique session identifier may be released to be reused for other sessions. Additionally or alternatively, the client device may store in its local storage the information retrieved from the server.

[0136] Referring now to Figure 3 showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0137] On Step 310, a new conversation is created. The new conversation is to be defined by the administrator user. Additionally or alternatively, the conversation may be an existing conversation that is being updated. In some exemplary embodiments, the

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conversation may have a name, keywords useful for matching user's response to the conversation, or the like.

[0138] On Step 320, a conversation flow may be defined. The conversation flow may define the announcements of the chat bot, the questions the chat bot asks, the parameters that the chat bot asks for and attempts to retrieve from the user's responses, which may be provided in natural language, the control flow conditions on the conversation flow and the like.

[0139] On Step 330, one or more automation processes may be associated with the conversation. The user may define, for example, using a click-and-point GUI, which automation process would be invoked and when, with respect to the conversation flow. Conversation flows having branch operations may be associated with more than a single automation process. Additionally or alternatively, a plurality of automation processes may be performed sequentially (either immediately one after the other, or with intermediate questions therebetween).

[0140] On Step 340, the conversation may be published and made available to be implemented by a chat bot service. In some exemplary embodiments, the publication may assign the conversation to a specific bot. For example, HR Bot may be assigned several conversations that are different from those of a CRM Bot.

[0141] Referring now to Figure 4A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0142] Screen 400 exemplifies a bot editor GUI. Bots 405 is selected and in Bots Pane 410, all defined bots are listed. Bot 420 is named HRExpert (422), has an assigned identifier and is already active (Published Status 424). Bot 420 may be edited, modified, or made unpublished. Additionally or alternatively, a new bot may be defined using the Add Button 430.

[0143] A published bot may be accessible via a launcher defined to be able to launch it. In some exemplary embodiments, the publication is implemented by updating a database to cause the launcher to be able to launch the bot. Additionally or alternatively, publication through third-party platforms may include creation of a non-human user and assigning conversation therewith to be processed by a chat bot conversation microprocess

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that is configured to access a database to determine parameters of the conversations of the bot. The publication may include updating the databases accordingly. In some exemplary embodiments, a publication of a bot may comprise publishing all (previously unpublished) conversations used by the bot.

[0144] Referring now to Figure 4B showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0145] In Bot Details Editor 440, the details of Bot 420 of Figure 4A are shown. Name 442 may be modified to a user-defined name. A Greeting Message 444 of Bot 420 may also be defined. A set of Conversations 446 that Bot 420 can implemented are selected. The user may add or remove conversations. Currently, Conversations 446 comprise three different conversations: Open New Requisition (446a), Add Expanses (446b), and Add New Employee (446c). In some cases, Bot 420 may indicate, upon activation, suggested conversations, and such conversations are indicated in List 448. Additionally or alternatively, Toggle 450 may be turned on to indicate that the conversations are only selected from a list and are not inferred from the user's intent as determined from conversation in natural language. An Error Message 452 is defined in case no conversation can be matched.

[0146] In some exemplary embodiments, a list of Launchers 454, such as Launcher 454a, indicate launchers that are defined to launch Bot 420. Additionally or alternatively, Launchers 454 may also include a launcher representing a non-human-user in a platform, such as a SLACK™ user representing the HR Bot, Bot 420.

[0147] Modifications to the bot may be saved or discarded. In some cases, the user may decide to make a bot unavailable for use of the users, using Unpublish Button 460.

[0148] Referring now to Figure 5A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0149] Screen 500 exemplifies a conversation editor GUI, after Conversations widget 505 is selected. Conversations Pane 510 lists existing conversations (520a, 520b, 520c), indicating for each their identifier, name, display name, production status (512, 514, 516, 518). In some exemplary embodiments, actions of each conversation may be listed under an Actions Column 519. Each conversation may be edited, modified, made unpublished,

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or the like. Additionally, or alternatively, a new conversation may be defined using the Add Button 530.

[0150] Conversations 520a, 520b, 520c are available through Bot 420, as is illustrated in Conversations 446 in Figure 4B. However, some conversations may be made available by other bots. Additionally or alternatively, the same conversation may be made available by several different bots.

[0151] A conversation that is made published may be updated in a database that provides the information of the conversation for implementation by bots that are determined to be able to perform said conversation.

[0152] Referring now to Figure 5B showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0153] In Conversation Details Editor 540, the details of Conversation 520c of Figure 5A are shown. Name 542 and Display Name 544 may be modified to user-defined names. Keywords Field 546 lists keywords that may be used to match the conversation to the user. In some exemplary embodiments, the user's intent may be extracted from her input, that is provided in natural language. Matching the terms, directly or indirectly, to the terms in Keywords Field 546 may indicate an intent of the user, which may be used to select Conversation 420c for implementation. In the illustrated example, the terms are "new", "employee" and "new employee" (546a, 546b, 546c).

[0154] In some exemplary embodiments, a conversation flow may be defined by the user, using the GUI and without requiring coding capabilities or API invocations. The user may add new steps to Conversation 420c using Buttons 552, 554, 556, 558. Add Message Button 552 may be configured to add a message step, in which a message to be provided by the chat bot to the user is defined. The definition may be explicit (e.g., fixed text). Additionally, or alternatively, the definition may provide leeway for the chat bot to personalize and implement based on the user's information and the context of the conversation. Add Question Button 554 may be configured to add a question step, in which the chat bot may attempt to retrieve information from the user. The question step may define the type of input to be gathered and a name of a parameter for referring to the user-provided value thereof. Add Condition Button 556 may be configured to add a condition step, in which a condition is evaluated and two alternative flows are selected

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based thereon. The user may define the condition, as well as the selected next steps for each possibility. Add Action Button 558 may be configured to add an action step, in which an automation process is executed. The user may define how to execute a parameterized automation process and may match the parameters provided during the conversation with the parameters to be provided to the automation process. In some cases, the user may also define how environment variables, user-associated data, or other available data sources not gathered by the natural language interface of the chat bot, may be used as parameters of the parameterized automation process.

[0155] Step 550a may be a message step, in which the bot acknowledges that the conversation commences and tells the user that the bot would assist her in adding a new employee to the system. The step indicates a next step, which may be selected from a dropdown list of the steps already defined for Conversation 520c.

[0156] Step 550b may be a question step, in which the bot attempt to obtain an employee identifier of the new employee. Similarly, Steps 550c, 550d, 550e, 550f are questions steps in which the name of the employee, email address and his business unit are obtained from the user.

[0157] Step 550g, which may be defined as the step following Step 550f, may be a condition step. The condition step may define a condition to be evaluated and based thereon the flow could continue in different paths. In case the condition is true, a success-next step is used (defined as Step 550i in the illustrated example). In case the condition is evaluated to false, a fail-next step is followed (defined in the illustrated example as Step 550h).

[0158] Steps 550h and 550i are action steps in which an automation process is executed. In the illustrated example, the conversation could end in an execution of one of two automation processes. However, it is noted that a conversation may be configured to end in a specific (single) automation process. Additionally or alternatively, in some cases, a conversation may execute a plurality of automation processes in sequence, one after the other. In such a case, after a first automation process is executed, a second phase of questions may be implemented before executing the second automation process. In some embodiments, the second automation process may be executed directly after the first automation process finishes, and without intervening steps in between.

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[0159] Referring now to Figure 5C showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5C illustrates an editor of an action step for Action Step 550h of Figure 5B.

[0160] The action step editor enables modification to the various parameters of the action step. The name of the action step may be provided in Step Name Field 560. The user may select an automation process in Automation Selector 562. Selector 562 may enable selection from existing automation processes created by the user, or by other users. The automation process may be a dynamically adaptable tutorial, such as described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials". The illustrated embodiment refers to the automation processes as Smart Walk-Thru. However, it is noted that the automation process may be completely automatic, a semi-automatic process requiring user's validation, or a walkthrough illustrating for the user how the GUI of the target system can be used to perform the action on a step-by-step basis.

[0161] In some exemplary embodiments, the automation process may be a parameterized automation process that can be provided with values to its parameters. In some exemplary embodiments, parameter values may be mandatory. The user may associate parameters gathered by the conversation (e.g., by Question Step 550b, 550c, 550d, 550e of Figure 5B). Additionally, or alternatively, the user may associate parameters available to the chat bot, such as based on the user credentials, environment variables, or the like.

[0162] In some exemplary embodiments, Parameter 564a may be selected to refer to Employee ID, gathered by Question Step 550b of Figure 5B. Parameter 564a may be matched to Automation Parameter 564b, ${employeeID}. As another example, Parameter 566a may be selected to refer to First Name, gathered by Question Step 550c of Figure 5B. Parameter 566a may be matched to Automation Parameter 566b, ${firstName}. As yet another example, Parameter 568a may be selected to refer to Last Name, gathered by Question Step 550d of Figure 5B. Parameter 568a may be matched to Automation Parameter 568b, ${lastName}. In some exemplary embodiments, the user may select an automation parameter from a list instead of or in addition to identifying the parameter using its explicit name, as is exemplified by the illustrated embodiment.

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[0163] Add Field Button 570 may be configured to add a new matching entry for matching an additional parameter to another automation parameter.

[0164] In some exemplary embodiments, the user may define Delay 572, indicating a delay after the step is evaluated and before it is executed. This may be useful for ensuring the user is able to see the end of the conversation in the chat bot user interface.

[0165] In some exemplary embodiments, Update Button 574 may be configured to update the action based on the user's input in the illustrated screen.

[0166] Referring now to Figure 5D showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5D illustrates an editor of a question step for Question Step 550b of Figure 5B.

[0167] The name of the question step, used for the designer of the conversation, may be provided in Step Name Field 580. The text of the question – either fixed or modifiable based on the conversation's context – may be defined in Text Field 584.

[0168] In some exemplary embodiments, the type of variable to be obtained may be defined in Type Field 582. In some exemplary embodiments, the type may be an integer, a real number, a string, a date, or the like. The designer may define any type of variable, may define a domain thereof, may define constraints on the allowed values, such as using conditions, domains, excluded patterns, acceptable patterns, or the like.

[0169] In some exemplary embodiments, suggested values may be defined using Suggestions List 586. The suggestions may be fixed values, values determined based on the context of the conversation, information associated with the user conversing with the chat bot, or the like.

[0170] Additionally or alternatively, Toggle 588 may be turned on to indicate that the values of the answer can only be selected from Suggestions List 586. If Toggle 588 is turned off, other values may be acceptable as well. In some exemplary embodiments, constraints on acceptable values may be defined using conditions, domains, patterns, or the like.

[0171] Upon completing of designing the question, Update Question Button 590 may be pressed to save the new definitions.

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[0172] Referring now to Figure 5E showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5E illustrates an editor of a condition step for Condition Step 550g of Figure 5B.

[0173] A Step Name Field 592 may be used to define a name of the condition step by the designer.

[0174] Condition Builder 594 pane may enable the designer to construct a complex condition. Atomic rules on parameters, such as values obtained during question steps, may be evaluated. As is exemplified in the figure, a rule which examines the value of Business Unit (extracted in Step 550f) is defined. The rule determines whether the value is equal to a fixed value. Additionally or alternatively, other operators can be used instead of "equal to". Additionally or alternatively, the comparison may be with a value of another parameter, a string created based thereon, such as a substring thereof or application of a pattern thereon, or the like. Additional rules may be defined and they may be used to create a complex condition, comprised of logical evaluation of several rules, connected by logical operators such as AND, OR, XOR, NOT, or the like.

[0175] Button 598 may be used to update the condition step in the conversation.

[0176] In some exemplary embodiments, Connections 599 may be used to retrieve field information from external systems, such as for example, SALESFORCE™. As an example, the SALESFORCE™ platform may comprise a field that contains the list of countries. The chat bot may be enabled to retrieve this list and allow the user to select a value from the list. In some exemplary embodiments, Connections 599 may be used as an alternative to manually creating a copy of the same information in definitions of the conversation of the chat bot. Connections 599 may also enable automatically synchronizing potential values to be inputted via the natural language user interface with values of lists, fields, sets, enumerators, or the like, that are already maintained and potentially updated from time to time, in a third-party platforms already used by the organization.

[0177] Referring now to Figure 6 showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 6 illustrates an editor of an automation process. The automation process may be presented in a similar manner to the manner showing a flow of a conversation, or vise versa. In some exemplary

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embodiments, the automation process may be defined exclusively for being performed by a bot. Additionally or alternatively, the automation process may be defined also as for tutorial purposes. The same automation process may be modified and be used for dual purposes – walkthrough and bot-operation. Walkthrough messages to the user and call for actions may be matched by automatic rules for performing the action using parameters provided by the chat bot. In some exemplary embodiments, a parameterized automation process may be defined. If a value of a parameter of the automation process is not provided to the entity implementing the automation process, a default callout message may be provided and the user may be asked to provide the information by herself. Hence, the default callout message may be the message used by the tutorial as a call for action for the user.

[0178] Step 610 may be a message step, providing a message to the user, such as a message indicating an automation is in progress.

[0179] Step 612 may be a page redirect step, where a browser is redirected to a URL.

[0180] Step 614 may be a condition step, where a condition is evaluated. Based on the value of the condition, a "YES" branch or a "NO" branch may be taken. As an example, if a "NO" branch is taken, an additional step, Step 616, may be performed to set the state of the browser at a desired state (which was examined in Step 614).

[0181] Steps 618, 620, 622 may be used to input employee identifier, first name and last name, respectively. The GUI of the target system, such as the HTML pages used by the website to allow the user to interact with the web-based system, may be manipulated to input the information gathered by the chat bot and associated with automation parameters (e.g., in Figure 5C).

[0182] Steps 624, 626, 628 may input additional information, such as defined automatically based on current context, based on user information, or the like. In some exemplary embodiments, the additional information may be predetermined and fixed. For example, "employmentStatus" may be set of "Employee" as the automation process is that of adding a new employee.

[0183] Step 630 may select a reporting manager for the new employee from a list of potential managers. The selection may be made based on user provided input in the

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conversation, based on automatically determined operation during the automation, or the like.

[0184] On Step 632, a save button in the GUI of the target system may be pressed to save the newly inputted information.

[0185] Save Button 650 may be pressed to save any updated made to the automation process, such as adding new steps, modifying existing steps, removing steps, changing order in the steps, or the like.

[0186] Additional manners of defining and updating an automation process are described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials".

[0187] Referring now to Figure 7A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0188] Screen 700 shows a user interface of the user with a chat bot. The chat bot may have already been launched using a launcher (not shown), such as a button on the button-right corner of the screen. The bot may provide a greeting message upon launching (Message 705). The greeting message may be based on the definition of the chat bot (e.g., 444 of Figure 4A).

[0189] The user may converse with the chat bot using a chat-like interface. A message in free text may be entered into Text Field 720 and provided upon the user pressing enter or the Send Button 725. Additionally or alternatively, speech to text may be employed to analyze speech of the user and generate a text string based thereon. The text string may be entered to Text Field 720 and inputted (e.g., Send Button 725 may be pressed).

[0190] Additionally or alternatively, the user may select a conversation from suggested conversations of the bot (710). The user may select the conversation by pressing it or by stating in the Text Field 720 the name of the conversation.

[0191] Referring now to Figure 7B, where the user indicated in Message 730 that she wants to add a new employee. The chat bot may start to implemented the conversation flow of the selected conversation. For example, the flow shown in Editor 540 of Figure 5B. A Message 732 is shown as an outcome of Step 550a, then the chat bot follows Step

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550b and attempts to obtain from the user an employee id (Message 732). The user may reply using Text Field 720 and indicate an identifier (123456).

[0192] The present invention may be a system, a method, and/or a computer program product. The computer program product may include a computer readable storage medium (or media) having computer readable program instructions thereon for causing a processor to carry out aspects of the present invention.

[0193] The computer readable storage medium can be a tangible device that can retain and store instructions for use by an instruction execution device. The computer readable storage medium may be, for example, but is not limited to, an electronic storage device, a magnetic storage device, an optical storage device, an electromagnetic storage device, a semiconductor storage device, or any suitable combination of the foregoing. A non-exhaustive list of more specific examples of the computer readable storage medium includes the following: a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), a static random access memory (SRAM), a portable compact disc read-only memory (CD-ROM), a digital versatile disk (DVD), a memory stick, a floppy disk, a mechanically encoded device such as punch-cards or raised structures in a groove having instructions recorded thereon, and any suitable combination of the foregoing. A computer readable storage medium, as used herein, is not to be construed as being transitory signals per se, such as radio waves or other freely propagating electromagnetic waves, electromagnetic waves propagating through a waveguide or other transmission media (e.g., light pulses passing through a fiber-optic cable), or electrical signals transmitted through a wire.

[0194] Computer readable program instructions described herein can be downloaded to respective computing/processing devices from a computer readable storage medium or to an external computer or external storage device via a network, for example, the Internet, a local area network, a wide area network and/or a wireless network. The network may comprise copper transmission cables, optical transmission fibers, wireless transmission, routers, firewalls, switches, gateway computers and/or edge servers. A network adapter card or network interface in each computing/processing device receives computer readable program instructions from the network and forwards the computer

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readable program instructions for storage in a computer readable storage medium within the respective computing/processing device.

[0195] Computer readable program instructions for carrying out operations of the present invention may be assembler instructions, instruction-set-architecture (ISA) instructions, machine instructions, machine dependent instructions, microcode, firmware instructions, state-setting data, or either source code or object code written in any combination of one or more programming languages, including an object oriented programming language such as Smalltalk, C++ or the like, and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The computer readable program instructions may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider). In some embodiments, electronic circuitry including, for example, programmable logic circuitry, field-programmable gate arrays (FPGA), or programmable logic arrays (PLA) may execute the computer readable program instructions by utilizing state information of the computer readable program instructions to personalize the electronic circuitry, in order to perform aspects of the present invention.

[0196] Aspects of the present invention are described herein with reference to flowchart illustrations and/or block diagrams of methods, apparatus (systems), and computer program products according to embodiments of the invention. It will be understood that each block of the flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, can be implemented by computer readable program instructions.

[0197] These computer readable program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create

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means for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks. These computer readable program instructions may also be stored in a computer readable storage medium that can direct a computer, a programmable data processing apparatus, and/or other devices to function in a particular manner, such that the computer readable storage medium having instructions stored therein comprises an article of manufacture including instructions which implement aspects of the function/act specified in the flowchart and/or block diagram block or blocks.

[0198] The computer readable program instructions may also be loaded onto a computer, other programmable data processing apparatus, or other device to cause a series of operational steps to be performed on the computer, other programmable apparatus or other device to produce a computer implemented process, such that the instructions which execute on the computer, other programmable apparatus, or other device implement the functions/acts specified in the flowchart and/or block diagram block or blocks.

[0199] The flowchart and block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods, and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of instructions, which comprises one or more executable instructions for implementing the specified logical function(s). In some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts or carry out combinations of special purpose hardware and computer instructions.

[0200] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the

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singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0201] The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number:	Herewith
Filing Date:	March 19, 2019
First Named Inventor:	N. Nahum
Art Unit:	TBD
Examiner:	TBD
Title:	Chat-Based Application Interface for Automation
Attorney Docket No.:	1179.0130 (583-6.3 NP)

PRELIMINARY AMENDMENT

To the Director of the U.S. Patent and Trademark Office regarding the above-referenced application:

Prior to examination on the merits, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims begin on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0001] with the following amended paragraph:

[0001] This application is a continuation of PCT application PCT/IL2018/051168, filed on November 4, 2018, which claims the benefit of provisional patent application No. 62/581,714 filed November 5, 2017, which is hereby incorporated by reference in its entirety without giving rise to disavowment.

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AMENDMENTS TO THE CLAIMS:

1. (Original) A method comprising:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

2. (Original) The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. (Original) The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. (Original) The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

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7. (Original) The method of Claim 1, wherein the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. (Original) The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. (Original) The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. (Canceled)

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11. (Original) The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. (Original) The method of Claim 11, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

13. (Original) The method of Claim 1, wherein said executing is performed on a client device of the user.

14. (Original) The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15. (Original) A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in

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accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

16. (Original) The method of Claim 15, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

17. (Original) The method of Claim 16, wherein the conversation elements comprise at least one of: a message element and a condition element.

18. (Original) The method of Claim 16, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

19. (Original) The method of Claim 15, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

20. (Original) The method of Claim 15, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

21. (Original) The method of Claim 20, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and

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retrieved, using the conversation identifier, by a client device executing the automation process.

22. (Original) The method of Claim 20, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

23-40. (Canceled)

41. (Original) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

42. (Original) The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

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45. (Original) The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. (Canceled)

47. (Canceled)

48. (Original) The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49. (Canceled)

50. (Canceled)

51. (Original) A non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is

Whatfix Inc. Exhibit 1002 Page 95

invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

52. (Original) The non-transitory computer readable medium of Claim 51, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

53. (Canceled)

54. (Canceled)

55. (Canceled)

56. (Original) The non-transitory computer readable medium of Claim 51, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

57. (Canceled)

58. (Canceled)

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REMARKS/ARGUMENTS

This preliminary amendment cancels claims 10, 23-40, 46-47, 49-50, 53-55 and 57-58 presents claims 1-9. 11-22, 41-45, 48, 51-52 and 56 for examination. Applicant submits that the application is ready for examination on the merits pursuant to the Track 1 petition filed herewith.

Respectfully submitted,

Dated: March 19, 2019

/Mark I. Koffsky/

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Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Nir NAHUM	Nonprovisional Application Number (if known):	
Title of Invention:	Chat-Based Application Interface for Automation		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Mark I. Koffsky/	Date 3/19/2019
Name (Print/Typed) Mark I. Koffsky	Practitioner Registration Number 41906

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☐ *Total of _____ forms are submitted.

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Application Number: 16358467 Document Date: 03/19/2019

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16358467
Filing Date	2019-03-19
First Named Inventor	Nir Nahum
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	1179.0130 (583-6.3 NP)

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20160300570		2016-10-13	GUSTAFSON et al.	
	2	20160094492		2016-03-31	Li et al.	
	3	20160352658		2016-12-01	Capper et al.	
	4	20170289071		2017-10-05	Roberts et al.	

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EFS Web 2.1.17

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16358467
	Filing Date	2019-03-19
	First Named Inventor	Nir Nahum
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	1179.0130 (583-6.3 NP)

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	ISR for PCT/IL2018/051168, issued 2019-01-31	

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16358467
	Filing Date	2019-03-19
	First Named Inventor	Nir Nahum
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	1179.0130 (583-6.3 NP)

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark I. Koffsky/	Date (YYYY-MM-DD)	2019-03-21
Name/Print	Mark I. Koffsky	Registration Number	41906

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:

GLAZBERG Ziv
Glazberg, Applebaum & Co. Advocates and Patent Attorneys
3 HaYetzira St. Shap House 21 Floor
Ramat Gan 5252141
Israel

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 31 Jan 2019
Applicant's or agent's file reference 583-6-2PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/IL2018/051168	International filing date *(day/month/year)* 04 Nov 2018
Applicant WALKME LTD.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

   For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **22 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/ Israel Patent Office Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel Facsimile No. 972-2-5651616	Authorized officer NEWMAN Baruch (Barry) BaruchN@justice.gov.il Telephone No. 972-2-5651685

Form PCT/ISA/220 (July 2017)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

GLAZBERG Ziv
Glazberg, Applebaum & Co. Advocates and Patent Attorneys
3 HaYetzira St. Shap House 21 Floor
Ramat Gan 5252141
Israel

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	31 Jan 2019
Applicant's or agent's file reference 583-6-2PCT	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/IL2018/051168	04 Nov 2018	05 Nov 2017

International Patent Classification (IPC) or both national classification and IPC
IPC (2019.01) G10L 15/22 G06F 3/16 G06F 17/24 G06F 3/048

Applicant
WALKME LTD.

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized officer
Israel Patent Office Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel Facsimile No. 972-2-5651616	31 Jan 2019	GORBUNOVA Yelena Telephone No. 972-2-5651669

Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/IL2018/051168

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   [X] the international application in the language in which it was filed.

   [ ] a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. [ ] forming part of the international application as filed:

      [ ] in the form of an Annex C/ST.25 text file.

      [ ] on paper or in the form of an image file.

   b. [ ] furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. [ ] furnished subsequent to the international filing date for the purposes of international search only:

      [ ] in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      [ ] on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/IL2018/051168

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	3,6,9,11,12,15-22,24,27,29-31,33-40,42,45,47-49,51-58	YES
	Claims	1,2,4,5,7,8,10,13,14,23,25,26,28,32,41,43,44,46,50	NO
Inventive step (IS)	Claims		YES
	Claims	1-58	NO
Industrial applicability (IA)	Claims	1-58	YES
	Claims		NO

2. Citations and explanations:

2.1. State of the art

Reference is made to the following documents:

D1: US2016300570 A1 (GUSTAFSON et al.) 13 October 2016
D2: US2016094492 A1 (Li et al.) 31 March 2016

2.2. Novelty and Inventive step

The present application does not meet the criteria of Articles 33(1) PCT, because the subject matter of claims 1, 2, 4, 5, 7, 8, 10, 13, 14, 23, 25, 26, 28, 32, 41, 43, 44, 46, 50 is not new (Article 33(2) PCT).

Regarding independent claim 1, the document D1 discloses (the references in parentheses applying in this document):

A method comprising:
using a natural language interface, receiving input from a user (see paragraphs 7, 30);
determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface (see paragraphs 29, 31, 33); and
executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof (see paragraphs 35, 59).

The subject matter of claim 1 is therefore not novel (Article 33(2) PCT).

The same reasoning applies to the subject matter of the corresponding independent claims 23, 41.

The subject matter of independent claim 15 does not involve an inventive step (Article 33(3) PCT).
The document D1, which may be regarded as the closest prior art to the subject matter of independent claim 15, discloses (the references in parentheses applying to this document):

A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface (see paragraph 20), the method comprising:
defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values (see paragraph 9);
associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof,

Whatfix Inc. Exhibit 1002 Page 107

wherein the automation process is a parameterized automation process (see paragraphs 30, 35); and publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface (see paragraphs 22, 40).

D1 fails to teach "obtain from the user one or more values to one or more parameters". However this feature is described in D2, which is in the field of personalizing data system components and data sources as chatbots (see Figures 11-12).

Therefore, it would be obvious to the skilled person in the art to combine the teaching of D1 with D2, thereby obtaining from the user values to parameters for executing automation process in response to a conversation.
Thus, the subject matter of this claim lacks an inventive step over D1 in light of D2 (Article 33(3) PCT).

The same reasoning applies to the subject matter of the corresponding independent claims 33, 51.

The dependent claims 2-14, 16-22, 24-32, 34-40, 42-50, 52-58 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty or inventive step (Article 33(2) and (3) PCT).

Referring to claim 2, D1 further discloses that the natural language interface is a chat bot service operable to converse with the user in natural language (see title of invention and paragraph 4).

Referring to claim 3, D2 further discloses a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter (see Fig. 11-12).
Thus, the subject matter of this claim lacks an inventive step over D1 in light of D2 (Article 33(3) PCT).

Referring to claims 4 -5, D1 discloses that the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields (see paragraphs 29-32).
The same reasoning applies to the subject matter of the claim 7.

Reffering to claim 6, D1 discloses that executing is performed without utilizing an Application Programming Interface (API) of the computer program (see paragraphs 45, 122).

Referring to claim 8, D1 further discloses selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein (see paragraphs 49-50).

The subject-matter of dependent claim 9 differs from the disclosure in D1 in that it specifies: "computing a similarity score for each element in the user interface ", however, this feature does not seem to be linked with any technical effect on which involve an inventive step. This feature is merely selected from several straightforward possibilities, from which the skilled person would choose from, in accordance with circumstances, without the exercise of inventive skills.
Thus, the subject matter of claim 9 lacks an inventive step (Article 33(3) PCT).

Referring to claim 10, D1 further discloses that the computer program is one of: a web-based application, a native mobile application, or a desktop program (see paragraph 26).

Regarding claim 11, D1 fails to teach generating a link wherein the link is configured to cause said execution upon clicking thereon, wherein the natural language interface provides the link to the user. However this feature is described in D2, which is in the field of personalizing data system components and data sources as chatbots (see paragraphs 71, 154).

Therefore, it would be obvious to the skilled person in the art to combine the teaching of D1 with D2, thereby arriving to the subject matter claimed.
Thus, the subject matter of this claim lacks an inventive step over D1 in light of D2 (Article 33(3) PCT).

Referring to claim 12, D1 further discloses a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises
retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters (see paragraphs 48-49 in D1 and Fig. 11-12 in D2).

Referring to claim 13, D1 discloses that the executing is performed on a client device of
the user (see paragraph 26).

Referring to claim 14, D1 discloses the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user (see paragraph 32).

The same reasoning applies to the subject matter of the corresponding dependent claims 16-22, 24-32, 34-40, 42-50, 52-58 (Articles 33(2) and (3) PCT).

2.3. Industrial applicability

The subject matter of claims 1-58 is industrially applicable in the sense of Article 33(4) PCT.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 583-6-2PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/IL2018/051168	International filing date *(day/month/year)* 04 Nov 2018	(Earliest) Priority Date *(day/month/year)* 05 Nov 2017
Applicant WALKME LTD.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 7B

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2018/051168

A. CLASSIFICATION OF SUBJECT MATTER
IPC (2019.01) G10L 15/22, G06F 3/16, G06F 17/24, G06F 3/048

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 (2019.01) G10L 15/22, G06F 3/16, G06F 17/24, G06F 3/048

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)
Databases consulted: THOMSON INNOVATION, Esp@cenet, Google Patents
Search terms used: natural language, chat bot, execute, automation process, input data, GUI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2016300570 A1 GUSTAFSON et al. 13 Oct 2016 (2016/10/13) The whole document	1,2,4,5,7,8,10,13, 14,23,25,26,28,32,41, 43,44,46,50
Y	The whole document	3,6,9,11,12,15-22, 24,27,29-31,33-40,42, 45,47-49,51-58
Y	US 2016094492 A1 Li et al. 31 Mar 2016 (2016/03/31) The whole document	3,6,9,11,12,15-22, 24,27,29-31,33-40,42, 45,47-49,51-58
A	US 2016352658 A1 Capper et al. 01 Dec 2016 (2016/12/01) The whole document	1-58
A	US 2017289071 A1 ROBERTS et al. 05 Oct 2017 (2017/10/05) The whole document	1-58

☐ 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	Date of mailing of the international search report
31 Jan 2019	31 Jan 2019
Name and mailing address of the ISA: Israel Patent Office Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel Facsimile No. 972-2-5651616	Authorized officer GORBUNOVA Yelena Telephone No. 972-2-5651669

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IL2018/051168

Patent document cited search report	Publication date	Patent family member(s)	Publication Date
US 2017289071 A1	05 Oct 2017	US 2017289071 A1	05 Oct 2017
		CA 2962765 A1	04 Oct 2017
US 2016352658 A1	01 Dec 2016	US 2016352658 A1	01 Dec 2016
		US 9794199 B2	17 Oct 2017
		AU 2009335623 A1	28 Jul 2011
		AU 2009335623 B2	10 May 2012
		US 2012041903 A1	16 Feb 2012
		US 8630961 B2	14 Jan 2014
		US 2014250195 A1	04 Sep 2014
		US 9369410 B2	14 Jun 2016
		WO 2010078614 A1	15 Jul 2010
US 2016300570 A1	13 Oct 2016	US 2016300570 A1	13 Oct 2016
		US 9847084 B2	19 Dec 2017
		US 2015371663 A1	24 Dec 2015
		US 9390706 B2	12 Jul 2016
		US 2018108353 A1	19 Apr 2018
US 2016094492 A1	31 Mar 2016	US 2016094492 A1	31 Mar 2016
		US 10122655 B2	06 Nov 2018
		US 2016094490 A1	31 Mar 2016
		US 10116596 B2	30 Oct 2018

The Israel Patent Office

State of Israel
Ministry of Justice

Ministry of Justice **Israel Patent Office**	**Search Strategy** (ISA/IL)
PCT Application Number: PCT/IL2018/051168	
Examiner name: Elena Gorbunova	Date: 31 January 2019

Search Details	**Check the appropriate box**	**Comments**
Search restricted by date	☐ Filing date ☒ None	
Documents cited in the application considered	☐ Completed ☒ None	
Applications/publications of the same applicant(s)/inventor(s) considered	☒ Completed	
Earlier search results	☒ Considered	

Database 1 (Patents):				
☒ Derwent Innovation - Core	☐ Derwent Innovation - DWPI	☐ Orbit (FamPat)	☐ PatBase	☐ STN – Patent Collection
☐ PATENTSCOPE	☑ Espacenet	☒ Google Patents	☐ Other:	

Query:

CTB=(natural ADJ language) and (customiz* or configurabl*) AND ALL=(GUI and (CHATBOT or (CHAT ADJ BOT) or template) and (execut* near5 command*));
ALL=(GUI and (CHATBOT or (CHAT ADJ BOT)) and (execut* near5 (command* or operat* or input*)) and natural ADJ language) AND AIC=(G06F001724 or G10L2015223);
ALL=(GUI and (CHATBOT or (CHAT ADJ BOT)) and (execut* and command*) and natural ADJ language) AND AIC=(G06F001724 or G10L2015223);
Dynamic chat bot natural language execute input insert data in user interface

Database 2 (Non-Patents Literature):				
☒ Derwent Innovation - NPL	☐ IEEE	☐ PatBase-NPL	☐ STN-NPL	☑ Google Scholar

Israel Patent office
Technology Park, Bldg.5,Malcha, Jerusalem , 9695101, Israel
Facsimile No. 972-2-5651616

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☐ Other:
Query: natural language configurable template invoke input data in user interface customizing configurable chatbot third party customizing chatbot clicking link automation customizing chatbot "without API" ("chatbot OR chat bot) NEAR/10 (link OR "without API" OR "third party)

Israel Patent office
Technology Park, Bldg.5,Malcha, Jerusalem , 9695101, Israel
Facsimile No. 972-2-5651616

Electronic Acknowledgement Receipt	
EFS ID:	35485988
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	21-MAR-2019
Filing Date:	
Time Stamp:	00:08:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	1035107 eb7f10651e29c1793ef44957ba9cb716a8aa3ddb	no	4

Warnings:

Information:					
2	Non Patent Literature	NPL.pdf	2958305 82f77db1df276fcdea95c8c51f3f9b9226c9e739	no	11
Warnings:					
Information:					
			Total Files Size (in bytes):	3993412	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

רשות הפטנטים

מדינת ישראל
משרד המשפטים

זאת לאשר כי רצופים בזה העתקים נכונים של המסמכים שהופקדו לכתחילה עם הבקשה לפטנט אשר פרטיה רשומים בעמוד הראשון של הנספח.

This is to certify that annexed hereto is a true copy of the documents as originally deposited with the patent application of which particulars are specified on the first page of the annex.

This 12 MAR 2019 היום

ISRAEL PATENT OFFICE
ישראל
MINISTRY OF JUSTICE

Ofir Alon אופיר אלון
רשם הפטנטים
המדגמים וסימני המסחר
Commissioner of Patents
Designs and Trademarks

583-6-2PCT

PCT REQUEST

(Original in Electronic Form)

0	**For receiving Office use only**	
0-1	International Application No.	**PCT/IL2018/051168**
0-2	International Filing Date	**04 November 2018 (04.11.2018)**
0-3	Name of receiving Office and "PCT International Application"	**RO/IL**

0-4	**Form PCT/RO/101 PCT Request**	
0-4-1	Prepared Using	**PCT-SAFE Version 3.51.083.259 MT/FOP 20180701/0.20.5.24**
0-5	**Petition** The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	**Receiving Office (specified by the applicant)**	**Israel Patent Office (RO/IL)**
0-7	**Applicant's or agent's file reference**	**583-6-2PCT**
I	**Title of Invention**	**CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION**
II	**Applicant**	
II-1	This person is	**Applicant only**
II-2	Applicant for	**All designated States**
II-4	Name	**WalkMe LTD.**
II-5	Address	**3 Kremenetski St. 6789903 Tel Aviv Israel**
II-6	State of nationality	**IL**
II-7	State of residence	**IL**
III-1	**Applicant and/or inventor**	
III-1-1	This person is	**Inventor only**
III-1-3	Inventor for	**All designated States**
III-1-4	Name (LAST, First)	**NAHUM, Nir**
III-1-5	Address	**8 Marcel Janco St. 6941320 Tel Aviv Israel**
III-2	**Applicant and/or inventor**	
III-2-1	This person is	**Inventor only**
III-2-3	Inventor for	**All designated States**
III-2-4	Name (LAST, First)	**SASSON, Shlomi**
III-2-5	Address	**12/1 Savion St. 90917 Givat Zeev Israel**

583-6-2PCT

PCT REQUEST

(Original in Electronic Form)

IV-1	**Agent or common representative; or address for correspondence** The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	Agent
IV-1-1	Name (LAST, First)	GLAZBERG, Ziv
IV-1-2	Address	G&A Glazberg Applebaum & Co. Advocates and Patent Attorneys 3 HaYetzira St. Shap House, 21st Floor 5252141 Ramat Gan Israel
IV-1-3	Telephone No.	+972-3-7774777
IV-1-4	Facsimile No.	+972-3-7774770
IV-1-5	e-mail	docketing@ga-adv.com
IV-1-5(a)	E-mail authorization The receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority are authorized to use this e-mail address, if the Office or Authority so wishes, to send notifications issued in respect of this international application:	as advance copies followed by paper notifications
IV-1-6	Agent's registration No.	410
V	**DESIGNATIONS**	
V-1	**The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.**	
VI-1	**Priority claim of earlier national application**	
VI-1-1	Filing date	05 November 2017 (05.11.2017)
VI-1-2	Number	62/581,714
VI-1-3	Country or Member of WTO	US
VI-2	**Incorporation by reference :** where an element of the international application referred to in Article 11(1)(iii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(iii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.	
VII-1	**International Searching Authority Chosen**	Israel Patent Office (ISA/IL)

583-6-2PCT

PCT REQUEST

(Original in Electronic Form)

VIII	**Declarations**	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	**Check list**	Number of sheets	Electronic file(s) attached
IX-1	Request (including declaration sheets)	4	✓
IX-2	Description	38	✓
IX-3	Claims	12	✓
IX-4	Abstract	1	✓
IX-5	Drawings	14	✓
IX-7	TOTAL	69	
	Accompanying Items	Paper document(s) attached	Electronic file(s) attached
IX-8	Fee calculation sheet	-	✓
IX-20	**Figure of the drawings which should accompany the abstract**	7B	
IX-21	**Language of filing of the international application**	English	
X-1	**Signature of applicant, agent or common representative**	(PKCS7 Digital Signature)	
X-1-1	Name (LAST, First)	GLAZBERG, Ziv	
X-1-3	Capacity (if such capacity is not obvious from reading the request)		

583-6-2PCT

PCT REQUEST

(Original in Electronic Form)

FOR RECEIVING OFFICE USE ONLY

10-1	**Date of actual receipt of the purported international application**	**04 November 2018 (04.11.2018)**
10-2	**Drawings:**	
10-2-1	Received	
10-2-2	Not received	
10-3	**Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application**	
10-4	**Date of timely receipt of the required corrections under PCT Article 11(2)**	
10-5	**International Searching Authority**	**ISA/IL**
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CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of provisional patent application No. 62/581,714 filed November 5, 2017, which is hereby incorporated by reference in its entirety without giving rise to disavowment.

TECHNICAL FIELD

[0001] The present disclosure relates to user interfaces in computerized system in general, and to user-interfaces for automation processes that utilize chat bots, in particular.

BACKGROUND

[0002] A Chat bot is a computer program implementing natural language interface to conduct a conversation via auditory or textual methods with the user. Chat bots are typically used in dialog systems for various practical purposes including customer service or information acquisition. Some chatterbots use sophisticated natural language processing systems, but many simpler systems scan for keywords within the input, then pull a reply with the most matching keywords, or the most similar wording pattern, from a database.

[0003] Nowadays, chat bots are starting to appear everywhere. From providing functionality via known communication services, such as FACEBOOK™, TELEGRAM™, or the like, to manipulating Internet of Things (IoT) devices via voice commands, such as using a smart speaker (e.g., GOOGLE HOME™, AMAZON ECHO™, or the like).

[0004] Implementing a new functionality via a chat bot may be a complicated task. For example, in the AMAZON ECHO™ ecosystem, developers can develop new "skills" using dedicated Application Programming Interface (API). A new skill for the smart speaker is a cloud-based service that is programmed to handle requests when invoked by the program of the smart speaker.

BRIEF SUMMARY

[0006] One exemplary embodiment of the disclosed subject matter is a method comprising: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0007] Optionally, the natural language interface is a chat bot service operable to converse with the user in natural language.

[0008] Optionally, the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0009] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0010] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0011] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0012] Optionally, the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of: a page redirect step; a click element step; a hovering over element step; a set focus to element step; a select value from list step; a fill input field with value step; a prompt user step; a time-wait step; and a condition-wait step.

[0013] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database

is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

[0014] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0015] Optionally, the computer program is one of: a web-based application, a native mobile application, or a desktop program.

[0016] Optionally, the method comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0017] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0018] Optionally, said executing is performed on a client device of the user.

[0019] Optionally, the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

[0020] Another exemplary embodiment of the disclosed subject matter is a method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to

obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0021] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0022] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0023] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0024] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0025] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

[0026] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

[0027] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

[0028] Yet another exemplary embodiment of the disclosed subject matter is a computerized apparatus having a processor and coupled memory, the processor being adapted to perform: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0029] Optionally, the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0030] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0031] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0032] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0033] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of

defining new automation processes and updating existing automation processes retained therein.

[0034] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0035] Optionally, said processor is further adapted to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0036] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0037] Optionally, said executing is performed on a client device of the user.

[0038] Yet another exemplary embodiment of the disclosed subject matter is a computerized apparatus for defining an automation process to be invoked in response to a conversation of a user with a natural language interface , wherein said computerized apparatus comprising a processor and coupled memory, the processor being adapted to perform: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0039] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0040] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0041] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0042] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0043] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

[0044] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

[0045] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

[0046] Yet another exemplary embodiment of the disclosed subject matter is a non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform: using a natural language interface, receiving input from a user; determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

[0047] Optionally, the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

[0048] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

[0049] Optionally, the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

[0050] Optionally, said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

[0051] Optionally, said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

[0052] Optionally, the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the

element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

[0053] Optionally, the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

[0054] Optionally, the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

[0055] Optionally, said executing is performed on a client device of the user.

[0056] Yet another exemplary embodiment of the disclosed subject matter is a non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform: defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters; associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked

automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

[0057] Optionally, said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

[0058] Optionally, the conversation elements comprise at least one of: a message element and a condition element.

[0059] Optionally, the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

[0060] Optionally, the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

[0061] Optionally, the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

[0062] Optionally, the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

[0063] Optionally, the link comprises the one or more values, thereby providing the one or more values to the automation process.

THE BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0064] The present disclosed subject matter will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which corresponding or like numerals or characters indicate corresponding or like components. Unless indicated otherwise, the drawings provide exemplary embodiments or aspects of the disclosure and do not limit the scope of the disclosure. In the drawings:

[0065] Figure 1 shows an illustration of an environment, in accordance with some exemplary embodiments of the disclosed subject matter;

[0066] Figures 2A-2C show flowcharts of methods, in accordance with some exemplary embodiments of the disclosed subject matter;

[0067] Figure 3 shows a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter;

[0068] Figures 4A-4B show schematic illustrations of user interfaces, in accordance with the disclosed subject matter;

[0069] Figures 5A-5E show schematic illustrations of user interfaces, in accordance with the disclosed subject matter;

[0070] Figure 6 shows a schematic illustration of a user interface, in accordance with the disclosed subject matter; and

[0071] Figures 7A-7B show schematic illustrations of user interfaces, in accordance with the disclosed subject matter.

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DETAILED DESCRIPTION

[0072] One technical problem dealt with by the disclosed subject matter is to provide for a user-friendly manner of defining functionality of chat bots. In particular, defining automation processes to be invoked by chat bots, either dedicated chat bots, such as implemented on a target system where the functionality is invoked, or even using third-party services, such as FACEBOOK MESSENGER™ are the communication platform for the chat bot service, which later invokes the automation process itself on the target system.

[0073] The chat bot may be a service that simplifies the end-user experience by collecting data from him and executing a predefined automation flow on the target system. The chat bot may implement a natural language interface, such as a text-based conversation, an oral conversation, or the like. The target system, generally referred to as the computer program, may be a website, a web-based system, a native mobile application (e.g., executed in a protected sandbox), a desktop application (e.g., executed in a process of a non-sandbox-based operating system), or the like. The target system may have a user interface, such as a Graphical User Interface (GUI), that the user may utilize in order to activate the functionalities of the target system.

[0074] As an example, if the user wishes to buy stocks on his bank account, he can use the website of the bank. Alternatively, the user may converse with a chat bot that is provided on the bank's website that is capable of asking her all the relevant information for filling the online stock purchase form and then run a predefined automation on top of the bank's website.

[0075] As yet another example, a third-party messaging service may be used to converse with a chat bot service. For example, SLAKC™ and TELEGRAM™ allow defining chat bot services as users in the chat service. Users can communicate with such non-human users in the same manner they communicate with other human users. For example, the user may chat with a chat bot named "HR Bot" who may provide Human Resources (HR)-related functionality.

[0076] It may be desired to enable defining the chat bots without the need of using dedicated APIs, programming languages, or the like. It may be desired that non-programmers may be able to define the automations that are invoked by the chat bots.

[0077] In some cases, adoption of new software may be a challenge to companies. Enterprises may use many different software tools for different purposes, such as HR, Customer Relation Management (CRM), Finance, Task Management, Project planning, or the like. Integration of a new system into an organization may be a challenge as it may require migrating large amounts of employees to new platforms, requiring that the users be trained in using the new system. A chat bot, on the other hand, may abstract away the actual system. Instead of relying on the user's familiarity with the system, the automation process may be in charge of the actual use of the system. The chat bot may simply extract the user's intention, identify the relevant action to be performed, and extract relevant information to be used as part of the automation process.

[0078] Another technical problem may be to enable defining automation processes in a manner that enables them to be implemented even if changes are performed to the underlying platform. For example, it may be desired that the automation process will continue working even in the face of layout modifications of the front-end of the program or website. In some cases, it may be desired to be able to identify elements selected during the definition of the automation process during execution thereof. The identification may be a non-trivial task if no unique identifier exists, as may be the case in many instances. Still, it may be desired to be able to identify such element correctly so as to apply the actions defined by the automation process.

[0079] One technical solution provided by the disclosed subject matter may be to use a natural language interface to receive input from the user, and based thereon, select an automation process to be executed. The automation process may be executed in a manner that manipulates the GUI of the target system, in a similar manner to the manner in which the user operates. As a result, definition of the automation process may be defined by non-programmers.

[0080] Defining the automation process based on performing actions in the GUI enables the automation process to perform any functionality that the user can perform, without relying on dedicated APIs and without requiring any line of code. The parameters of the conversation, as well as the flow of the automation process, may be defined using a point and click editor, or other user interface that can be used by any non-programmer users.

[0081] In some cases, if the target system is replaced, the same chat bot conversation may be used to gather the relevant information and the automation process that is invoked may be replaced. The underlying system may be abstracted away and the user may use the simple and convenient chat bot service as the only user interface.

[0082] Additionally or alternatively, different functionalities may be implemented and there may be no limit to what the chat bot can invoke, except for the limitations of the target system's own capabilities. A novice user may define in a simple manner the parameters of the conversation that the chat bot implements, and the automation process that would be executed based thereon. Using this seemingly simple techniques, a fast and efficient manner of providing chat bot functionalities is enabled.

[0083] In some exemplary embodiments, the chat bot may be implemented on a different system than the target system itself, such as a third-party messaging service. As a result, it may be desired to enable third-party messaging service to invoke the automation process in a simple manner and without relying on coding or on dedicated APIs. In some exemplary embodiments, the chat bot service may generate a link, such as a web link (e.g., a link to a website), a deeplink to a mobile application (e.g., waze:// link to the WAZE™ mobile application), a link to a local desktop agent (e.g., walkme:// link to the WALKME™ desktop agent), or the like. The link may be presented to the user in the messaging service and the user may click the link. In response to the link being clicked, the target system may be opened and the automation process may be executed.

[0084] In some exemplary embodiments, the chat bot may collect information to be used as part of the automation process, such as values to be inputted in input fields, selections to be made in the GUI of the target system, or the like. The information may be provided to the automation process via the link. In some cases, the link may comprise a query string indicating a conversation identifier. The conversation identifier may be a unique identifier of the chat bot session with the user. Before generating the link, the information gathered by the chat bot may be stored in a database with a record whose key is the conversation identifier. After the link is traversed, the conversation identifier is obtained from the query string, and the record is retrieved from the database using the conversation identifier. The collected information itself may be used by the client device when executing the automation process. Additionally or alternatively, the link may

comprise the values of the parameters themselves explicitly in the link, enabling to avoid using a database to indirectly pass the information and instead pass it directly via the link.

[0085] In some exemplary embodiments, a chat bot service may be associated with different conversation flows. Each conversation flow may be associated with one or more automation processes that can be invoked. A non-programmer user may define the association therebetween and define when each conversation flow is selected, and in which conditions, each automation process is invoked.

[0086] An automation process may be a dynamically adaptable tutorial, such as described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials", which is hereby incorporated by reference in its entirety for all purposes without giving rise to disavowment. The automation process may define a sequence of steps to be performed. In some exemplary embodiments, some steps may be associated with control flow of the sequence, such as a branching step. Additionally or alternatively, some steps may be associated with performing an action on a GUI element, also referred to as widget. Additionally or alternatively, some steps may be associated with a condition that is based on content of a GUI element.

[0087] In some exemplary embodiments, there may be a unique identifier for the widget. For example, a unique id for each element, A Cascading Style Sheet (CSS) selector in a web application, a path to a mobile element, or the like. Selection may be implemented using such unique identifier.

[0088] In some exemplary embodiments, there may not be any unique identifier for the widget. For example, the widget may be a button, having a text label "SET", a color parameter, a length parameter, a height parameter, an associated URL that is activated upon clicking thereon, or the like. None of the parameters may be unique to the widget itself. Still, it may be desired to provide for an identification manner of a widget. Additionally or alternatively, the widget may be modified in the GUI, such as its color may be changed, its text may be modified, it may be enlarged or shrinked and the URL may be switched.

[0089] In some exemplary embodiments, the identification may be performed in a probabilistic manner. Each widget of the same target type appearing in the relevant screen of the GUI may be examined. Each of the parameters used for identifying the widget-of-

interest is compared to the parameter of the examined widget and a similarity score may be computed. The examined widget having the highest similarity score may be determined to be the widget-of-interest. In some exemplary embodiments, in case the highest similarity score is below a predetermined threshold, it may be determined that the widget-of-interest was not located. It is noted that the parameters used for identification of the widget-of-interest may be a subset of the available parameters thereof. Additionally or alternatively, existing parameters in the examined widget that are not part of the parameters of widget-of-interest may reduce the similarity score. Consider, for example, a button widget which does not have a URL to be followed upon click. A button widget that does comprise such URL is less likely to be the same widget-of-interest than another widget that does not have a URL. Additionally or alternatively, the parameters may comprise relative parameters indicating relations to other widgets, such as encapsulated within another element, located in a relative location to another widget, or the like. As the overall layout may expect to remain similar in different version of the target system, such relative parameters may be useful as a hint to indicate whether the examined widget is indeed the widget-of-interest. The relative parameters may refer to other elements, who may be also be identified in a probabilistic manner themselves. Additionally or alternatively, the other elements may be identified using a unique identifier, or using another method.

[0090] One technical effect of the disclosed subject matter may be to provide abstraction of the way users, such as employees in an organization and clients of an enterprise, use different platforms and simplify complicated processes for them with a unified, and simple, conversational-based user interface.

[0091] Another technical effect may be to provide a chat bot designing process that does not require coding or using designated API. This may allow to bypass the requirement of having the target system expose an API for each potential functionality. Instead, the GUI itself, which already exists in the target system, is used as the API-substitute. Exposing an API may be time-consuming task in some cases, but in many cases it may not be feasible as the target system may be owned by a third-party who may not wish to expose an API and who may not wish to allow external automation.

[0092] Yet another technical effect may be to avoid security issues. With API calls, there may be potential security issues, if the API is manipulated. Instead, the disclosed subject matter uses the GUI itself, and the actions may be performed behalf of a logged-in user, under her authority. No additional security issues are created due to the use of the disclosed subject matter, as opposed to potential vulnerabilities that may be introduced when an API is published and made available.

[0093] Yet another technical effect may be enabling abstraction of the interface of the target system. Modifications to the target system's interface may be transparent to the automation process, which may continue to function as before, due to its dynamic capabilities. Additionally or alternatively, even extensive changes in the UI and even replacing the target system altogether may be handled quickly and simply using the disclosed subject matter by modifying the automation process accordingly and adjusting the chat bot to invoke the modified automation process instead of the original one. The conversation itself may still follow the same flow and the user may be unaware of the extensive modifications to the underlying target system.

[0094] The disclosed subject matter may provide for one or more technical improvements over any pre-existing technique and any technique that has previously become routine or conventional in the art.

[0095] Additional technical problem, solution and effects may be apparent to a person of ordinary skill in the art in view of the present disclosure.

[0096] Referring now to Figure 1 showing a computerized environment in accordance with some exemplary embodiments of the disclosed subject matter.

[0097] A Chat Bot Editor 110. Editor 110 may enable a non-programmer user (not shown) to define a flow of conversation for a chat bot. The user may define which questions the bot would ask, which remarks it will make, flow control operations that may be based on evaluated conditions, such as branching operations, or the like. Additionally or alternatively, the user may define for a conversation flow which automation process is invoked thereby and which parameters are passed thereto. Additionally or alternatively, the user may define that a conversation is associated with multiple automation processes, one of which may be selected based on the interaction with the user. Additionally or alternatively, Editor 110 may define several different

conversation for a single chat bot (e.g., HR Bot). The bot may be defined to select the correct conversation to follow based on user input, such as explicit selection, implicit identified intent, or the like.

[0098] In some exemplary embodiments, Editor 110 may be configured to store the definitions of the conversation in a database, such as Conversation Definitions 102. Conversation Definitions 102 can be accessed at runtime when the chat bot service is being executed.

[0099] Launcher Module 120 may be configured to provide a launcher widget in the target system. For example, a bot-icon may be presented in a corner of the screen of the GUI. Pressing on the bot-icon may launch the Chat Bot Front-End Module 130.

[0100] Chat Bot Front-End Module 130 may be configured to enable a User 190 to interact with a chat bot. User 190 may converse with the chat bot using natural language, such as using written text in a messenger-like UI, using oral conversation such as by providing oral instructions that may be translated to text using speech-to-text methods, or the like. Chat Bot Front-End Module 130 may be a front-end of the chat bot that may be implemented by a dialog processor service (not shown) that may be executed, for example, by a cloud-based platform. In some exemplary embodiments, the dialog processor service may be a microservice. The dialog processor service may access Conversation Definitions 102 to determine the flow of conversation, to determine which question to ask the user, what to do with the provided answer, match values to parameters, or the like.

[0101] In some exemplary embodiments, Chat Bot Front-End Module 130 may be a front-end of a third-party communication service that enables integration of a chat bot service, such as using a non-human user representing the chat bot.

[0102] Upon a determination of an automation process to be invoked, as may be determined by the dialog processor service based on the Conversation Definitions 102 of the executed conversation, an Automation Execution Module 140 may be invoked. Automation Execution Module 140 may be configured to execute, on the client-side, the automation process. In some cases, the automation process may be a dynamically adaptable tutorial that is invoked. Additionally or alternatively, the automation process may be a dynamically adaptable process that is not a tutorial per se, as the process may

not require that each step be shown and explained to the user. In some cases, the process may be performed automatically or semi-automatically. For example, consider a vacation request from an HR bot. The process may be performed automatically to prepare the vacation request by filling a relevant online form. The automation process may request that the user validate the content of the form before its submission, and hence it may require some user assistance.

[0103] In some exemplary embodiments, Automation Execution Module 140 may utilize client-side code for website target systems. For example, a JavaScript library running on the website itself and executed by the browser may be utilized. The JavaScript library may be embedded in the code of the website. Additionally or alternatively, the JavaScript library may be imported into the code of the website. Additionally or alternatively, the JavaScript library may be injected to the HTML code using a browser extension on the fly, to provide a solution that need not cooperation of the owner of the website. The client-side code (e.g., JavaScript library) may have access to read and write the entire HTML code of each web page. Thus, the automation may be able to find elements in the HTML, check their values and manipulate them. The automation may also change the page's URL and create new elements on the page (for example: popup balloons).

[0104] In some exemplary embodiments, Automation Execution Module 140 may utilize a native library which runs in the host application in case of mobile applications. Mobile applications may be executed on a sandboxed-based operating system, such as iOS™ or ANDROID™, where each application is executed in a separate sandbox. A Software Development Kit (SDK) of the native library can be compiled with the host application if the owner of the host application cooperates. Additionally or alternatively, the SDK may be injected from outside, obliviating the need cooperation of the owner of the application. In such a case, the cooperation of the User 190 may be required, such as by installing a program for injecting the SDK to the host application. As the SDK is injected to the host application, the automation may access the UI elements of the application and this is able to find elements, check their values and manipulate them. New elements may also be created, as needed, on the fly.

[0105] In some exemplary embodiments, Automation Execution Module 140 may execute automation process on a desktop application that is executed on a non-sandboxed operating system, such as WINDOWS™ or LINUX™. An agent may be installed on the user device. The agent may access other applications, including their UI elements, manipulate such elements and create new elements.

[0106] One or more of the above-mentioned components may be connected to a Network 105, such as intranet, Local Area Network (LAN), the Internet, or the like.

[0107] Referring now to Figure 2A showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0108] On Step 210, a chat bot is launched. The chat bot may be launched in response to a user clicking on a launch icon, in response to a user command, in response to a user clicking on a physical button, in response to a vocal command (e.g., "OK Siri", "Hey Google"), or the like. In some exemplary embodiments, the user may launch a third-party communication service, such as WHATSAPP™, TELEGRAM™, SLACK™, or the like, and select to converse with a non-human user, representing a chat bot.

[0109] On Step 220, a conversation of the chat bot is selected. The conversation may be selected based on explicit selection by the user, based on implicit selection inferred from the user's intent, or the like. The chat bot may be associated with a plurality of potential conversations, defined in a definitions database, such as 102 of Figure 1. Based on processing of the user's interaction with the chat bot, such as using Natural Language Processing (NLP) techniques, it may be determined which conversation is the most likely conversation and such a conversation may be suggested to the user for confirmation.

[0110] On Step 230, the conversation may be implemented. The chat bot service may execute the conversation flow by following the flow defined for the conversation (232). The flow may define announcements that the chat bot service would provide to the user. The announcements may appear as part of a conversation that the chat bot provides, either in written or vocal communication, depending on the modality of the chat bot. The announcements may be fixed and predetermined. Additionally or alternatively, the announcements may be parameterized and be modified based on previous answers by the user, previous messages provided by the user, based on user-related data, contextual information, or the like. The flow may define conditions for evaluation and branching

instructions or other control flow instructions that rely on the evaluated value. The flow may define questions configured to extract information from the human user (234). The questions may define a name of a parameter to which the information would be assigned and a type and/or a domain thereof (e.g., text, text matching a predetermined pattern, an integer, an integer within a range, or the like). The values of the parameters may be utilized for setting values of parameters in a parameterized automation process, thereby adjusting the parameterized automation process based on the answers of the user. The adjustment may comprise causing the automation process to input user-defined values to input texts, select different elements, set different conditions, or the like.

[0111] On Step 240, an automation process may be selected. The automation process may be selected based on the flow of the conversation. In some exemplary embodiments, a conversation may be associated with several automation processes that are selected based on the user's interaction with the chat bot. Additionally or alternatively, the conversation may be associated with a single conversation that is selected upon reaching the end of the flow of the conversation.

[0112] On Step 250, the automation process may be executed. In some exemplary embodiments, the automation process may be a parameterized automation process that is executed using the values of the parameters obtained during the conversation session (e.g., Step 234). The automation process may be executed on the client device. In some exemplary embodiments, the user may a-priori install a computer program product on her client device, such as a desktop agent, a browser extension, or the like, to enable execution of automation processes for target programs and systems that do provide direct support for the disclosed subject matter. Additionally or alternatively, in case of a target program that is supported by the disclosed subject matter, such as a website already having embedded therein the relevant client-side code, no installation of an additional client-side program may be required.

[0113] The automation process may be defined by a user of an editor, such as system operator. The definitions of the automation process may be stored in a database and retrieved on the client-side for execution. The automation may be a flow that comprises steps in a predefined order. The flow may comprise control flow steps, such as branching

steps that depend on conditions. After a step is executed, a succeeding step in the flow may be executed.

[0114] In some exemplary embodiments, the following actions can be defined in the editor and will then cause the corresponding steps to occur in an automation:

[0115] A split step may comprise a parameter of type "Rules". Upon execution of the split step, the parameter of the steps may be evaluated. If the rule is evaluated to true, a true branch is traversed to reach to a next step (e.g. "then step"). If the rule is evaluated to false, a false branch is traversed to reach to a different step (e.g., "else step).

[0116] A redirect to a URL step may comprise a String parameter named URL and a Boolean parameter named "Don't redirect if URL is identical". If the "Don't redirect if URL is identical" parameter is false or if the current URL of the browser does not equal the URL parameter, the browser is redirected to the URL parameter.

[0117] Clicking on screen elements step may comprise an element description of the element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a click action thereon. As an example, the element-of-interest may be a clickable object, a button, or the like.

[0118] Hovering on screen elements step may comprise an element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a mouse hover event over the element-of-interest. As an example, the element-of-interest may be a menu element, an element having a tooltip, or the like.

[0119] Focusing on screen elements step may comprise an element-of-interest. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates an element focus event for the element-of-interest. For example, the element-of-interest may be a text input field which may be manipulated to receive focus, enabling the inputting of texts thereto.

[0120] Select list value of on-screen elements step may comprise an element-of-interest and a String value. The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a selection of the value from the list defined in the element-of-interest.

[0121] Filling an input field step may comprise an element-of-interest, a String text, a parameter name, or the like. The value to be inputted to the element-of-interest can be a fixed value (the String text parameter). Additionally or alternatively, the value may be retrieved from a parameter, whose value is set during the conversation. The name of the parameter may be provided as a parameter to the step (e.g., parameter name). The element-of-interest may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like. The automation process interacts with the element-of-interest and simulates a user filling input to the element-of-interest, either a fixed value or a value of the parameter.

[0122] Prompting the user step. The automation process may prompt the user, such as using a popup, a balloon, a tooltip, or the like. As an example, if the user is required to enter her password, this step may be used. The step may comprise a String variable named "prompt text" providing the content of the prompt itself, a parameter defining a type of prompt, or the like. In some exemplary embodiments, the step may comprise an element-to-bound which may be used as an anchor point to which the prompt is tied. The element-to-bound may be identified in the GUI, such as based on a unique identifier, based on a probabilistic method, or the like.

[0123] Wait for a predefined time step may comprise an integer variable named "seconds". The step may be executed by starting a timer for the number of seconds defined in the step. After the time elapses, the automation process continues execution.

[0124] Wait for a condition step may comprise a wait condition provided in the form of a variable of type "Rules". For example, a wait step may be defined to wait for an on-screen element to appear.

[0125] Show a message step may be a step for presenting a message to the user. The message may be used for indicating, for example, success of the automation. A message content may be defined for the message step.

[0126] Variables of type "Rules" may comprise one or more Boolean statements that are connected using logical operators, such as OR, AND, XOR, IFF, or the like. The disclosed subject matter may support a plurality of statements. Non-limiting examples are described: an on screen element exists, does not exist, visible, hidden, or the like; a statement regarding a text label of an on screen element (e.g., String conditions such as contains, length, or the like); a statement regarding a text of the current URL (e.g., String conditions such as contains, length, substring, etc.); checking values of in-app variables; checking an in-app storage value (e.g., cookies, etc.); checking browser type; checking operating system type; checking current date/time; or the like.

[0127] Referring now to Figure 2B showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0128] In Figure 2B, a chat bot implemented using a third-party platform is utilized. The chat bot conversation is performed in the user interface of the platform, which may not have a configurable interface, let alone one that does not require programming and using of APIs, to the target system.

[0129] On Step 260a, after the automation process to be executed is selected (240), a link is generated. The link comprises all the information needed for the automation process. For example, if the automation process is a parameterized automation process, the link may comprise the values of the parameters. In some exemplary embodiments, the link may comprise a query string indicating the values of each parameter of the parameterized automation process. Additionally or alternatively, the link may be defined to invoke a GET HTTP request, a POST HTTP request, or the like, to pass the values of the parameters to the invoked location. As an example, a link for an automation process in the mobile application WAZE™ may be: waze://?automationFlowId=123&param1=abc&param2=def, defining the values of two parameters (param1, param2).

[0130] On Step 262, the link is provided to the user via the chat bot session. As an example, the chat bot may provide a message stating: "Click here and I'll do what you asked: [URL]", where URL is replaced with the generated link.

[0131] On Step 264, after the user clicked on the link, the automation process may be executed. In case of a parameterized automation process, the values of the parameters may be retrieved from the link.

[0132] In some exemplary embodiments, the invocation of the automation process in a desktop application may comprise a link in Uniform Resource Identifier (URI) scheme to the local desktop agent may be provided. After the link is traversed, the local desktop agent may launch the target desktop application. If the agent determines that the target desktop application is already operating, it may avoid re-launching it.

[0133] Referring now to Figure 2C showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0134] On Step 260b, a link with a conversation identifier may be generated. Similarly to the link of Step 260a, the link provides the values of the parameters. However, instead of explicitly providing the values in the link, a unique conversation session identifier is allocated and used to identify the conversation session. Consider again the example of the WAZE™ mobile application, the link may be: waze://?conversationResultId=123, wherein the conversationResultId is the conversation session identifier.

[0135] On Step 261, the values of the parameters, as determined during the implementation of the conversation based on the user's responses (Step 230), are stored in a database accessible from the target system. The parameters are stored in a record retrievable using the conversation session identifier (e.g., conversationResultId).

[0136] On Step 266, the parameters values may be retrieved from the record using the conversation session identifier. In some exemplary embodiments, after retrieval thereof, the record may be deleted and the unique session identifier may be released to be reused for other sessions. Additionally or alternatively, the client device may store in its local storage the information retrieved from the server.

[0137] Referring now to Figure 3 showing a flowchart of a method, in accordance with some exemplary embodiments of the disclosed subject matter.

[0138] On Step 310, a new conversation is created. The new conversation is to be defined by the administrator user. Additionally or alternatively, the conversation may be an existing conversation that is being updated. In some exemplary embodiments, the

conversation may have a name, keywords useful for matching user's response to the conversation, or the like.

[0139] On Step 320, a conversation flow may be defined. The conversation flow may define the announcements of the chat bot, the questions the chat bot asks, the parameters that the chat bot asks for and attempts to retrieve from the user's responses, which may be provided in natural language, the control flow conditions on the conversation flow and the like.

[0140] On Step 330, one or more automation processes may be associated with the conversation. The user may define, for example, using a click-and-point GUI, which automation process would be invoked and when, with respect to the conversation flow. Conversation flows having branch operations may be associated with more than a single automation process. Additionally or alternatively, a plurality of automation processes may be performed sequentially (either immediately one after the other, or with intermediate questions therebetween).

[0141] On Step 340, the conversation may be published and made available to be implemented by a chat bot service. In some exemplary embodiments, the publication may assign the conversation to a specific bot. For example, HR Bot may be assigned several conversations that are different from those of a CRM Bot.

[0142] Referring now to Figure 4A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0143] Screen 400 exemplifies a bot editor GUI. Bots 405 is selected and in Bots Pane 410, all defined bots are listed. Bot 420 is named HRExpert (422), has an assigned identifier and is already active (Published Status 424). Bot 420 may be edited, modified, or made unpublished. Additionally or alternatively, a new bot may be defined using the Add Button 430.

[0144] A published bot may be accessible via a launcher defined to be able to launch it. In some exemplary embodiments, the publication is implemented by updating a database to cause the launcher to be able to launch the bot. Additionally or alternatively, publication through third-party platforms may include creation of a non-human user and assigning conversation therewith to be processed by a chat bot conversation microprocess

that is configured to access a database to determine parameters of the conversations of the bot. The publication may include updating the databases accordingly. In some exemplary embodiments, a publication of a bot may comprise publishing all (previously unpublished) conversations used by the bot.

[0145] Referring now to Figure 4B showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0146] In Bot Details Editor 440, the details of Bot 420 of Figure 4A are shown. Name 442 may be modified to a user-defined name. A Greeting Message 444 of Bot 420 may also be defined. A set of Conversations 446 that Bot 420 can implemented are selected. The user may add or remove conversations. Currently, Conversations 446 comprise three different conversations: Open New Requisition (446a), Add Expanses (446b), and Add New Employee (446c). In some cases, Bot 420 may indicate, upon activation, suggested conversations, and such conversations are indicated in List 448. Additionally or alternatively, Toggle 450 may be turned on to indicate that the conversations are only selected from a list and are not inferred from the user's intent as determined from conversation in natural language. An Error Message 452 is defined in case no conversation can be matched.

[0147] In some exemplary embodiments, a list of Launchers 454, such as Launcher 454a, indicate launchers that are defined to launch Bot 420. Additionally or alternatively, Launchers 454 may also include a launcher representing a non-human-user in a platform, such as a SLACK™ user representing the HR Bot, Bot 420.

[0148] Modifications to the bot may be saved or discarded. In some cases, the user may decide to make a bot unavailable for use of the users, using Unpublish Button 460.

[0149] Referring now to Figure 5A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0150] Screen 500 exemplifies a conversation editor GUI, after Conversations widget 505 is selected. Conversations Pane 510 lists existing conversations (520a, 520b, 520c), indicating for each their identifier, name, display name, production status (512, 514, 516, 518). In some exemplary embodiments, actions of each conversation may be listed under an Actions Column 519. Each conversation may be edited, modified, made unpublished,

or the like. Additionally, or alternatively, a new conversation may be defined using the Add Button 530.

[0151] Conversations 520a, 520b, 520c are available through Bot 420, as is illustrated in Conversations 446 in Figure 4B. However, some conversations may be made available by other bots. Additionally or alternatively, the same conversation may be made available by several different bots.

[0152] A conversation that is made published may be updated in a database that provides the information of the conversation for implementation by bots that are determined to be able to perform said conversation.

[0153] Referring now to Figure 5B showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0154] In Conversation Details Editor 540, the details of Conversation 520c of Figure 5A are shown. Name 542 and Display Name 544 may be modified to user-defined names. Keywords Field 546 lists keywords that may be used to match the conversation to the user. In some exemplary embodiments, the user's intent may be extracted from her input, that is provided in natural language. Matching the terms, directly or indirectly, to the terms in Keywords Field 546 may indicate an intent of the user, which may be used to select Conversation 420c for implementation. In the illustrated example, the terms are "new", "employee" and "new employee" (546a, 546b, 546c).

[0155] In some exemplary embodiments, a conversation flow may be defined by the user, using the GUI and without requiring coding capabilities or API invocations. The user may add new steps to Conversation 420c using Buttons 552, 554, 556, 558. Add Message Button 552 may be configured to add a message step, in which a message to be provided by the chat bot to the user is defined. The definition may be explicit (e.g., fixed text). Additionally, or alternatively, the definition may provide leeway for the chat bot to personalize and implement based on the user's information and the context of the conversation. Add Question Button 554 may be configured to add a question step, in which the chat bot may attempt to retrieve information from the user. The question step may define the type of input to be gathered and a name of a parameter for referring to the user-provided value thereof. Add Condition Button 556 may be configured to add a condition step, in which a condition is evaluated and two alternative flows are selected

based thereon. The user may define the condition, as well as the selected next steps for each possibility. Add Action Button 558 may be configured to add an action step, in which an automation process is executed. The user may define how to execute a parameterized automation process and may match the parameters provided during the conversation with the parameters to be provided to the automation process. In some cases, the user may also define how environment variables, user-associated data, or other available data sources not gathered by the natural language interface of the chat bot, may be used as parameters of the parameterized automation process.

[0156] Step 550a may be a message step, in which the bot acknowledges that the conversation commences and tells the user that the bot would assist her in adding a new employee to the system. The step indicates a next step, which may be selected from a dropdown list of the steps already defined for Conversation 520c.

[0157] Step 550b may be a question step, in which the bot attempt to obtain an employee identifier of the new employee. Similarly, Steps 550c, 550d, 550e, 550f are questions steps in which the name of the employee, email address and his business unit are obtained from the user.

[0158] Step 550g, which may be defined as the step following Step 550f, may be a condition step. The condition step may define a condition to be evaluated and based thereon the flow could continue in different paths. In case the condition is true, a success-next step is used (defined as Step 550i in the illustrated example). In case the condition is evaluated to false, a fail-next step is followed (defined in the illustrated example as Step 550h).

[0159] Steps 550h and 550i are action steps in which an automation process is executed. In the illustrated example, the conversation could end in an execution of one of two automation processes. However, it is noted that a conversation may be configured to end in a specific (single) automation process. Additionally or alternatively, in some cases, a conversation may execute a plurality of automation processes in sequence, one after the other. In such a case, after a first automation process is executed, a second phase of questions may be implemented before executing the second automation process. In some embodiments, the second automation process may be executed directly after the first automation process finishes, and without intervening steps in between.

[0160] Referring now to Figure 5C showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5C illustrates an editor of an action step for Action Step 550h of Figure 5B.

[0161] The action step editor enables modification to the various parameters of the action step. The name of the action step may be provided in Step Name Field 560. The user may select an automation process in Automation Selector 562. Selector 562 may enable selection from existing automation processes created by the user, or by other users. The automation process may be a dynamically adaptable tutorial, such as described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials". The illustrated embodiment refers to the automation processes as Smart Walk-Thru. However, it is noted that the automation process may be completely automatic, a semi-automatic process requiring user's validation, or a walkthrough illustrating for the user how the GUI of the target system can be used to perform the action on a step-by-step basis.

[0162] In some exemplary embodiments, the automation process may be a parameterized automation process that can be provided with values to its parameters. In some exemplary embodiments, parameter values may be mandatory. The user may associate parameters gathered by the conversation (e.g., by Question Step 550b, 550c, 550d, 550e of Figure 5B). Additionally, or alternatively, the user may associate parameters available to the chat bot, such as based on the user credentials, environment variables, or the like.

[0163] In some exemplary embodiments, Parameter 564a may be selected to refer to Employee ID, gathered by Question Step 550b of Figure 5B. Parameter 564a may be matched to Automation Parameter 564b, ${employeeID}. As another example, Parameter 566a may be selected to refer to First Name, gathered by Question Step 550c of Figure 5B. Parameter 566a may be matched to Automation Parameter 566b, ${firstName}. As yet another example, Parameter 568a may be selected to refer to Last Name, gathered by Question Step 550d of Figure 5B. Parameter 568a may be matched to Automation Parameter 568b, ${lastName}. In some exemplary embodiments, the user may select an automation parameter from a list instead of or in addition to identifying the parameter using its explicit name, as is exemplified by the illustrated embodiment.

[0164] Add Field Button 570 may be configured to add a new matching entry for matching an additional parameter to another automation parameter.

[0165] In some exemplary embodiments, the user may define Delay 572, indicating a delay after the step is evaluated and before it is executed. This may be useful for ensuring the user is able to see the end of the conversation in the chat bot user interface.

[0166] In some exemplary embodiments, Update Button 574 may be configured to update the action based on the user's input in the illustrated screen.

[0167] Referring now to Figure 5D showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5D illustrates an editor of a question step for Question Step 550b of Figure 5B.

[0168] The name of the question step, used for the designer of the conversation, may be provided in Step Name Field 580. The text of the question – either fixed or modifiable based on the conversation's context – may be defined in Text Field 584.

[0169] In some exemplary embodiments, the type of variable to be obtained may be defined in Type Field 582. In some exemplary embodiments, the type may be an integer, a real number, a string, a date, or the like. The designer may define any type of variable, may define a domain thereof, may define constraints on the allowed values, such as using conditions, domains, excluded patterns, acceptable patterns, or the like.

[0170] In some exemplary embodiments, suggested values may be defined using Suggestions List 586. The suggestions may be fixed values, values determined based on the context of the conversation, information associated with the user conversing with the chat bot, or the like.

[0171] Additionally or alternatively, Toggle 588 may be turned on to indicate that the values of the answer can only be selected from Suggestions List 586. If Toggle 588 is turned off, other values may be acceptable as well. In some exemplary embodiments, constraints on acceptable values may be defined using conditions, domains, patterns, or the like.

[0172] Upon completing of designing the question, Update Question Button 590 may be pressed to save the new definitions.

[0173] Referring now to Figure 5E showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 5E illustrates an editor of a condition step for Condition Step 550g of Figure 5B.

[0174] A Step Name Field 592 may be used to define a name of the condition step by the designer.

[0175] Condition Builder 594 pane may enable the designer to construct a complex condition. Atomic rules on parameters, such as values obtained during question steps, may be evaluated. As is exemplified in the figure, a rule which examines the value of Business Unit (extracted in Step 550f) is defined. The rule determines whether the value is equal to a fixed value. Additionally or alternatively, other operators can be used instead of "equal to". Additionally or alternatively, the comparison may be with a value of another parameter, a string created based thereon, such as a substring thereof or application of a pattern thereon, or the like. Additional rules may be defined and they may be used to create a complex condition, comprised of logical evaluation of several rules, connected by logical operators such as AND, OR, XOR, NOT, or the like.

[0176] Button 598 may be used to update the condition step in the conversation.

[0177] In some exemplary embodiments, Connections 599 may be used to retrieve field information from external systems, such as for example, SALESFORCE™. As an example, the SALESFORCE™ platform may comprise a field that contains the list of countries. The chat bot may be enabled to retrieve this list and allow the user to select a value from the list. In some exemplary embodiments, Connections 599 may be used as an alternative to manually creating a copy of the same information in definitions of the conversation of the chat bot. Connections 599 may also enable automatically synchronizing potential values to be inputted via the natural language user interface with values of lists, fields, sets, enumerators, or the like, that are already maintained and potentially updated from time to time, in a third-party platforms already used by the organization.

[0178] Referring now to Figure 6 showing a schematic illustration of a user interface, in accordance with the disclosed subject matter. Figure 6 illustrates an editor of an automation process. The automation process may be presented in a similar manner to the manner showing a flow of a conversation, or vise versa. In some exemplary

embodiments, the automation process may be defined exclusively for being performed by a bot. Additionally or alternatively, the automation process may be defined also as for tutorial purposes. The same automation process may be modified and be used for dual purposes – walkthrough and bot-operation. Walkthrough messages to the user and call for actions may be matched by automatic rules for performing the action using parameters provided by the chat bot. In some exemplary embodiments, a parameterized automation process may be defined. If a value of a parameter of the automation process is not provided to the entity implementing the automation process, a default callout message may be provided and the user may be asked to provide the information by herself. Hence, the default callout message may be the message used by the tutorial as a call for action for the user.

[0179] Step 610 may be a message step, providing a message to the user, such as a message indicating an automation is in progress.

[0180] Step 612 may be a page redirect step, where a browser is redirected to a URL.

[0181] Step 614 may be a condition step, where a condition is evaluated. Based on the value of the condition, a "YES" branch or a "NO" branch may be taken. As an example, if a "NO" branch is taken, an additional step, Step 616, may be performed to set the state of the browser at a desired state (which was examined in Step 614).

[0182] Steps 618, 620, 622 may be used to input employee identifier, first name and last name, respectively. The GUI of the target system, such as the HTML pages used by the website to allow the user to interact with the web-based system, may be manipulated to input the information gathered by the chat bot and associated with automation parameters (e.g., in Figure 5C).

[0183] Steps 624, 626, 628 may input additional information, such as defined automatically based on current context, based on user information, or the like. In some exemplary embodiments, the additional information may be predetermined and fixed. For example, "employmentStatus" may be set of "Employee" as the automation process is that of adding a new employee.

[0184] Step 630 may select a reporting manager for the new employee from a list of potential managers. The selection may be made based on user provided input in the

conversation, based on automatically determined operation during the automation, or the like.

[0185] On Step 632, a save button in the GUI of the target system may be pressed to save the newly inputted information.

[0186] Save Button 650 may be pressed to save any updated made to the automation process, such as adding new steps, modifying existing steps, removing steps, changing order in the steps, or the like.

[0187] Additional manners of defining and updating an automation process are described in U.S. Patent No. 9,922,008, issued Mar. 20, 2018, entitled "Calling Scripts Based Tutorials".

[0188] Referring now to Figure 7A showing a schematic illustration of a user interface, in accordance with the disclosed subject matter.

[0189] Screen 700 shows a user interface of the user with a chat bot. The chat bot may have already been launched using a launcher (not shown), such as a button on the button-right corner of the screen. The bot may provide a greeting message upon launching (Message 705). The greeting message may be based on the definition of the chat bot (e.g., 444 of Figure 4A).

[0190] The user may converse with the chat bot using a chat-like interface. A message in free text may be entered into Text Field 720 and provided upon the user pressing enter or the Send Button 725. Additionally or alternatively, speech to text may be employed to analyze speech of the user and generate a text string based thereon. The text string may be entered to Text Field 720 and inputted (e.g., Send Button 725 may be pressed).

[0191] Additionally or alternatively, the user may select a conversation from suggested conversations of the bot (710). The user may select the conversation by pressing it or by stating in the Text Field 720 the name of the conversation.

[0192] Referring now to Figure 7B, where the user indicated in Message 730 that she wants to add a new employee. The chat bot may start to implemented the conversation flow of the selected conversation. For example, the flow shown in Editor 540 of Figure 5B. A Message 732 is shown as an outcome of Step 550a, then the chat bot follows Step

550b and attempts to obtain from the user an employee id (Message 732). The user may reply using Text Field 720 and indicate an identifier (123456).

[0193] The present invention may be a system, a method, and/or a computer program product. The computer program product may include a computer readable storage medium (or media) having computer readable program instructions thereon for causing a processor to carry out aspects of the present invention.

[0194] The computer readable storage medium can be a tangible device that can retain and store instructions for use by an instruction execution device. The computer readable storage medium may be, for example, but is not limited to, an electronic storage device, a magnetic storage device, an optical storage device, an electromagnetic storage device, a semiconductor storage device, or any suitable combination of the foregoing. A non-exhaustive list of more specific examples of the computer readable storage medium includes the following: a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), a static random access memory (SRAM), a portable compact disc read-only memory (CD-ROM), a digital versatile disk (DVD), a memory stick, a floppy disk, a mechanically encoded device such as punch-cards or raised structures in a groove having instructions recorded thereon, and any suitable combination of the foregoing. A computer readable storage medium, as used herein, is not to be construed as being transitory signals per se, such as radio waves or other freely propagating electromagnetic waves, electromagnetic waves propagating through a waveguide or other transmission media (e.g., light pulses passing through a fiber-optic cable), or electrical signals transmitted through a wire.

[0195] Computer readable program instructions described herein can be downloaded to respective computing/processing devices from a computer readable storage medium or to an external computer or external storage device via a network, for example, the Internet, a local area network, a wide area network and/or a wireless network. The network may comprise copper transmission cables, optical transmission fibers, wireless transmission, routers, firewalls, switches, gateway computers and/or edge servers. A network adapter card or network interface in each computing/processing device receives computer readable program instructions from the network and forwards the computer

readable program instructions for storage in a computer readable storage medium within the respective computing/processing device.

[0196] Computer readable program instructions for carrying out operations of the present invention may be assembler instructions, instruction-set-architecture (ISA) instructions, machine instructions, machine dependent instructions, microcode, firmware instructions, state-setting data, or either source code or object code written in any combination of one or more programming languages, including an object oriented programming language such as Smalltalk, C++ or the like, and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The computer readable program instructions may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider). In some embodiments, electronic circuitry including, for example, programmable logic circuitry, field-programmable gate arrays (FPGA), or programmable logic arrays (PLA) may execute the computer readable program instructions by utilizing state information of the computer readable program instructions to personalize the electronic circuitry, in order to perform aspects of the present invention.

[0197] Aspects of the present invention are described herein with reference to flowchart illustrations and/or block diagrams of methods, apparatus (systems), and computer program products according to embodiments of the invention. It will be understood that each block of the flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, can be implemented by computer readable program instructions.

[0198] These computer readable program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create

means for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks. These computer readable program instructions may also be stored in a computer readable storage medium that can direct a computer, a programmable data processing apparatus, and/or other devices to function in a particular manner, such that the computer readable storage medium having instructions stored therein comprises an article of manufacture including instructions which implement aspects of the function/act specified in the flowchart and/or block diagram block or blocks.

[0199] The computer readable program instructions may also be loaded onto a computer, other programmable data processing apparatus, or other device to cause a series of operational steps to be performed on the computer, other programmable apparatus or other device to produce a computer implemented process, such that the instructions which execute on the computer, other programmable apparatus, or other device implement the functions/acts specified in the flowchart and/or block diagram block or blocks.

[0200] The flowchart and block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods, and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of instructions, which comprises one or more executable instructions for implementing the specified logical function(s). In some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts or carry out combinations of special purpose hardware and computer instructions.

[0201] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the

singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0202] The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

CLAIMS

What is claimed is:

1. A method comprising:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

2. The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. The method of Claim 1, wherein the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. The method of Claim 1, wherein the computer program is one of: a web-based application, a native mobile application, or a desktop program.

11. The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. The method of Claim 11, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

13. The method of Claim 1, wherein said executing is performed on a client device of the user.

14. The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15. A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

16. The method of Claim 15, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

17. The method of Claim 16, wherein the conversation elements comprise at least one of: a message element and a condition element.

18. The method of Claim 16, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

19. The method of Claim 15, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

20. The method of Claim 15, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

21. The method of Claim 20, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

22. The method of Claim 20, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

23. A computerized apparatus having a processor and coupled memory, the processor being adapted to perform:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

24. The computerized apparatus of Claim 23, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

25. The computerized apparatus of Claim 23, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

26. The computerized apparatus of Claim 23, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

27. The computerized apparatus of Claim 23, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

28. The computerized apparatus of Claim 23, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more

users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

29. The computerized apparatus of Claim 23, wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

30. The computerized apparatus of Claim 23 wherein said processor is further adapted to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

31. The computerized apparatus of Claim 30, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

32. The computerized apparatus of Claim 23, wherein said executing is performed on a client device of the user.

33. A computerized apparatus for defining an automation process to be invoked in response to a conversation of a user with a natural language interface , wherein said

computerized apparatus comprising a processor and coupled memory, the processor being adapted to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

34. The computerized apparatus of Claim 33, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

35. The computerized apparatus of Claim 34, wherein the conversation elements comprise at least one of: a message element and a condition element.

36. The computerized apparatus of Claim 34, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

37. The computerized apparatus of Claim 33, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations

comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

38. The computerized apparatus of Claim 33, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

39. The computerized apparatus of Claim 38, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

40. The computerized apparatus of Claim 38, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

41. A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof.

42. The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the

natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. The non-transitory computer readable medium of Claim 41, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

47. The non-transitory computer readable medium of Claim 41,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

48. The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49. The non-transitory computer readable medium of Claim 48, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

50. The non-transitory computer readable medium of Claim 41, wherein said executing is performed on a client device of the user.

51. A non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language

interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

52. The non-transitory computer readable medium of Claim 51, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

53. The non-transitory computer readable medium of Claim 52, wherein the conversation elements comprise at least one of: a message element and a condition element.

54. The non-transitory computer readable medium of Claim 52, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

55. The non-transitory computer readable medium of Claim 51, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

56. The non-transitory computer readable medium of Claim 51, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

57. The non-transitory computer readable medium of Claim 56, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

58. The non-transitory computer readable medium of Claim 56, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

ABSTRACT

A method, apparatus and product for chat-based application interface for automation. Using a natural language interface, receiving user input. Based on the user input, determining an automation process of a computer program having a user interface (UI), to be executed. The automation process is executed by utilizing the UI to input data thereto or execute functionality thereof. Additionally or alternatively, a conversation to be implemented by a natural language interface may be defined. The conversation is configured to obtain from the user one or more values corresponding to one or more parameters. The conversation is associated with a parameterized automation process depending on the one or more parameters. The parameterized automation process is invoked automatically by a natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

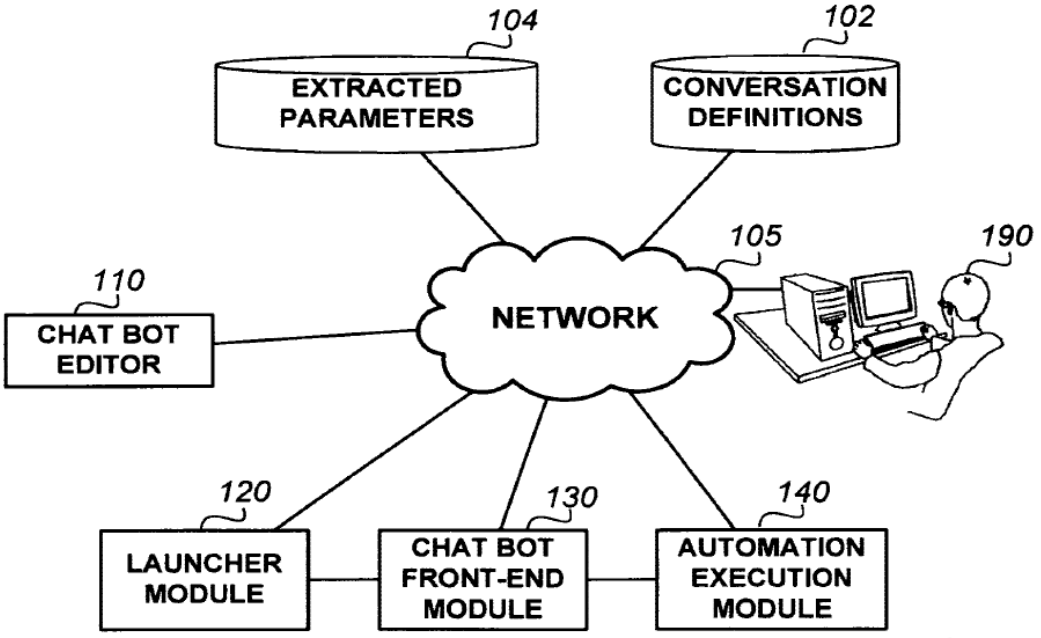

104
EXTRACTED PARAMETERS
102
CONVERSATION DEFINITIONS
105
190
110
CHAT BOT EDITOR
NETWORK
120
LAUNCHER MODULE
130
CHAT BOT FRONT-END MODULE
140
AUTOMATION EXECUTION MODULE

FIG. 1

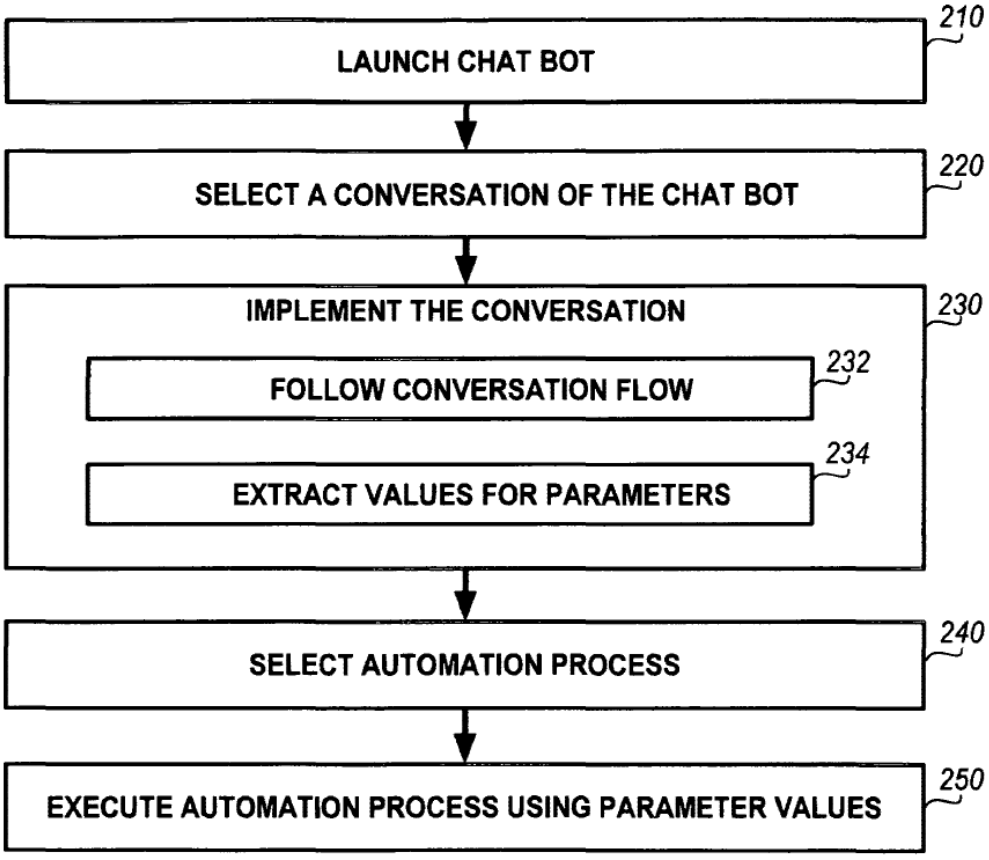

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
FOLLOW CONVERSATION FLOW
232
EXTRACT VALUES FOR PARAMETERS
234
SELECT AUTOMATION PROCESS
240
EXECUTE AUTOMATION PROCESS USING PARAMETER VALUES
250

FIG. 2A

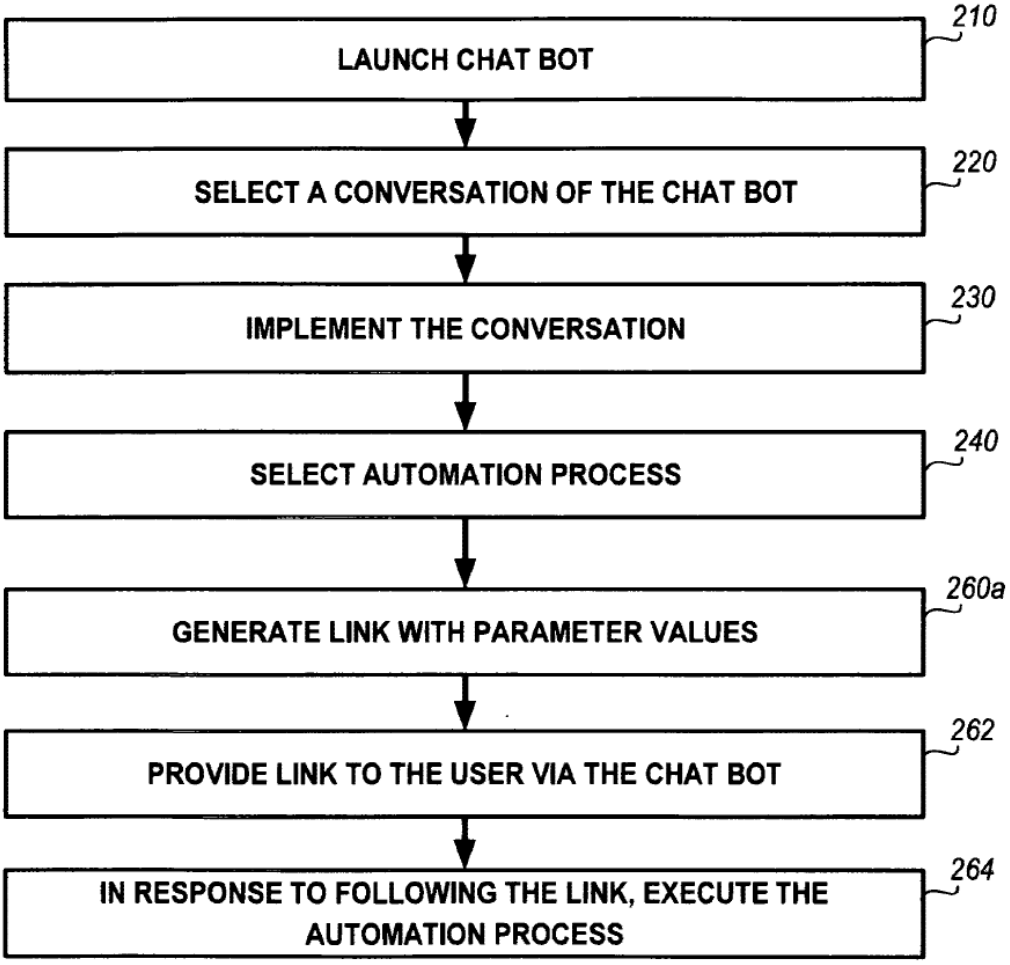

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
SELECT AUTOMATION PROCESS
240
GENERATE LINK WITH PARAMETER VALUES
260a
PROVIDE LINK TO THE USER VIA THE CHAT BOT
262
IN RESPONSE TO FOLLOWING THE LINK, EXECUTE THE AUTOMATION PROCESS
264

FIG. 2B

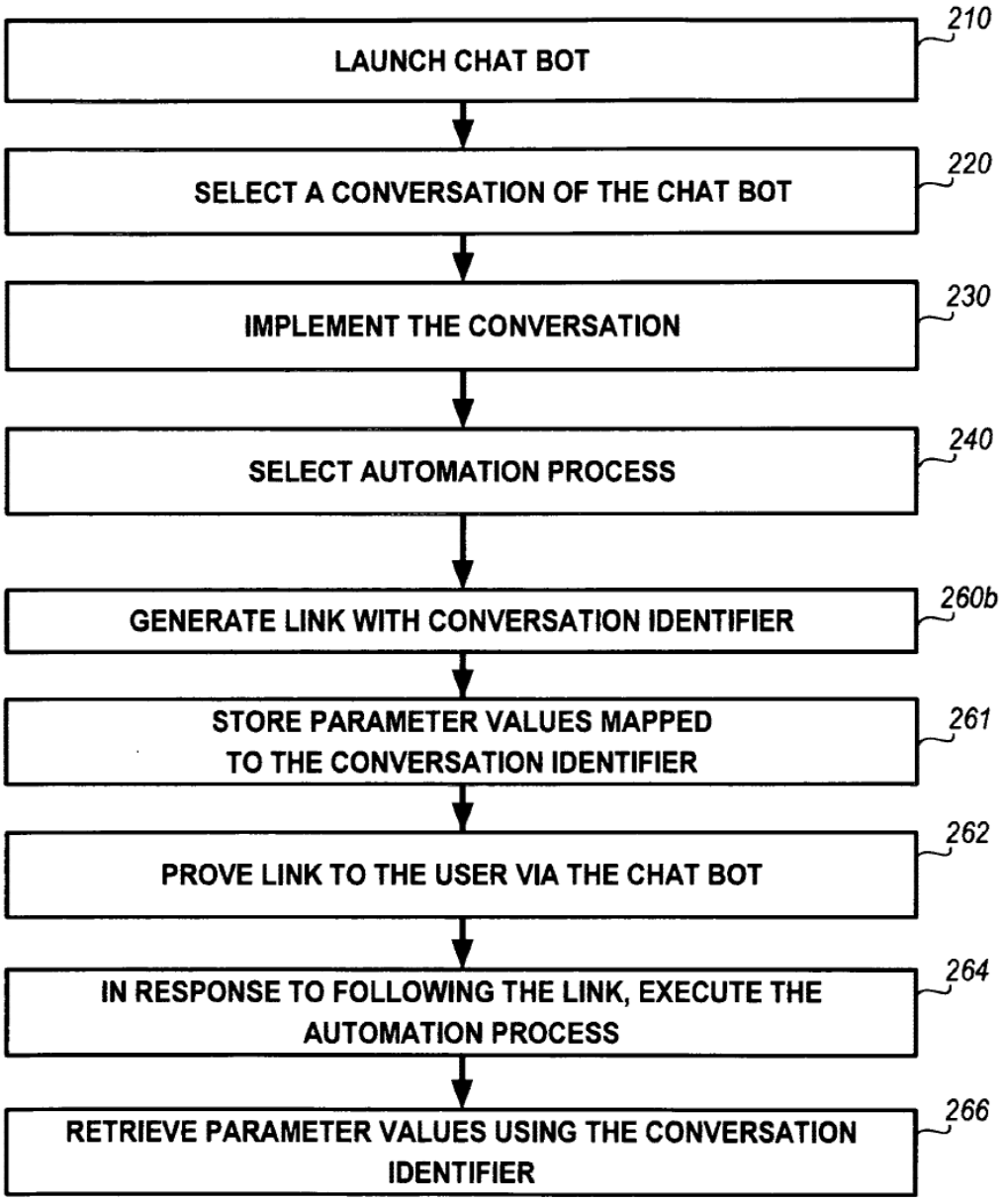

LAUNCH CHAT BOT
210
SELECT A CONVERSATION OF THE CHAT BOT
220
IMPLEMENT THE CONVERSATION
230
SELECT AUTOMATION PROCESS
240
GENERATE LINK WITH CONVERSATION IDENTIFIER
260b
STORE PARAMETER VALUES MAPPED TO THE CONVERSATION IDENTIFIER
261
PROVE LINK TO THE USER VIA THE CHAT BOT
262
IN RESPONSE TO FOLLOWING THE LINK, EXECUTE THE AUTOMATION PROCESS
264
RETRIEVE PARAMETER VALUES USING THE CONVERSATION IDENTIFIER
266

FIG. 2C

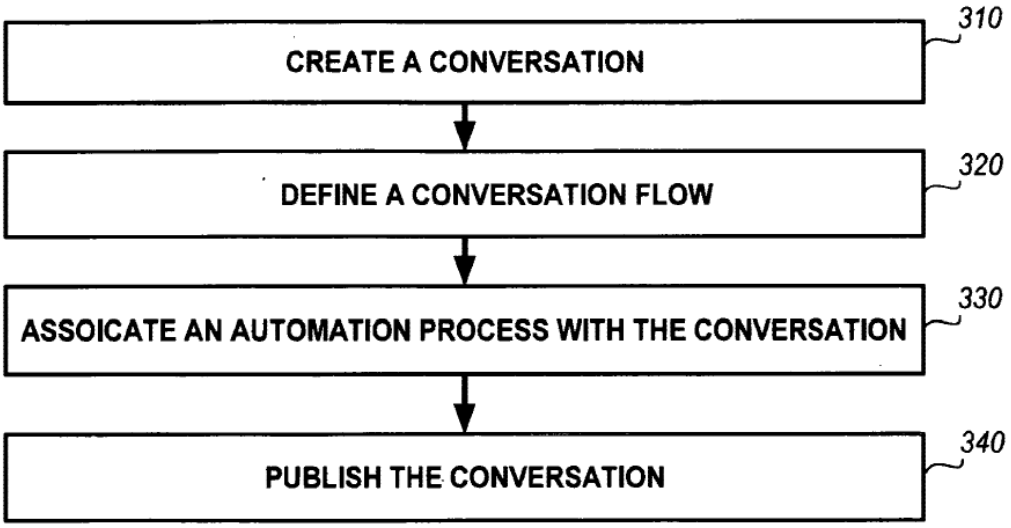

CREATE A CONVERSATION
310
DEFINE A CONVERSATION FLOW
320
ASSOICATE AN AUTOMATION PROCESS WITH THE CONVERSATION
330
PUBLISH THE CONVERSATION
340

FIG. 3

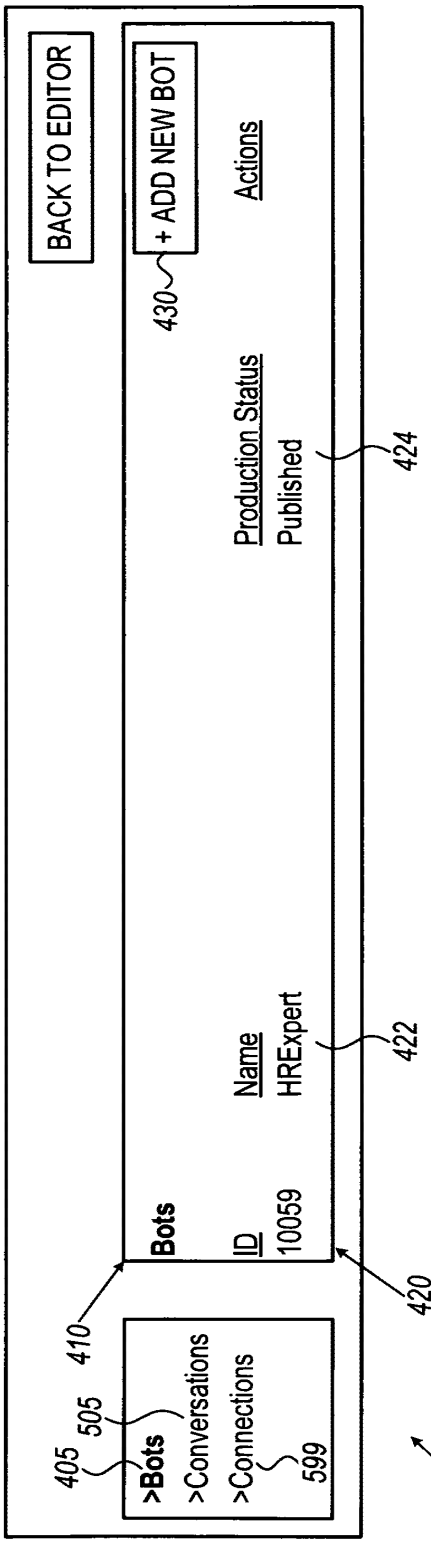

BACK TO EDITOR
+ ADD NEW BOT
430
Actions
Production Status
Published
424
Bots
ID
Name
10059
HRExpert
422
420
410
505
405
>Bots
>Conversations
>Connections
599
400

Fig. 4A

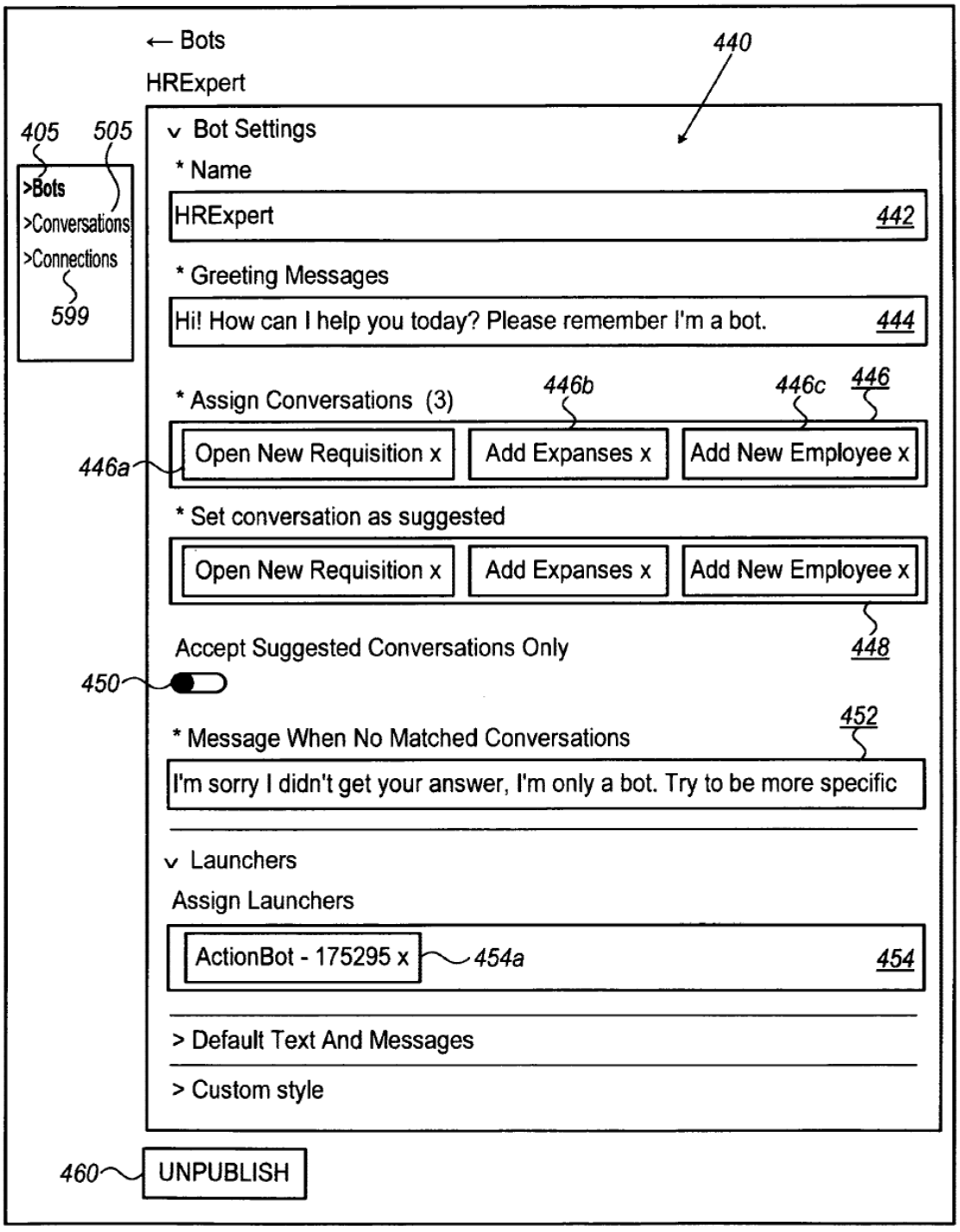

← Bots
HREXpert
440
405
505
>Bots
>Conversations
>Connections
599
v Bot Settings
* Name
HRExpert
442
* Greeting Messages
Hi! How can I help you today? Please remember I'm a bot.
444
* Assign Conversations (3)
446b
446c
446
446a
Open New Requisition x
Add Expanses x
Add New Employee x
* Set conversation as suggested
Open New Requisition x
Add Expanses x
Add New Employee x
448
Accept Suggested Conversations Only
450
452
* Message When No Matched Conversations
I'm sorry I didn't get your answer, I'm only a bot. Try to be more specific
v Launchers
Assign Launchers
ActionBot - 175295 x
454a
454
> Default Text And Messages
> Custom style
460
UNPUBLISH

Fig. 4B

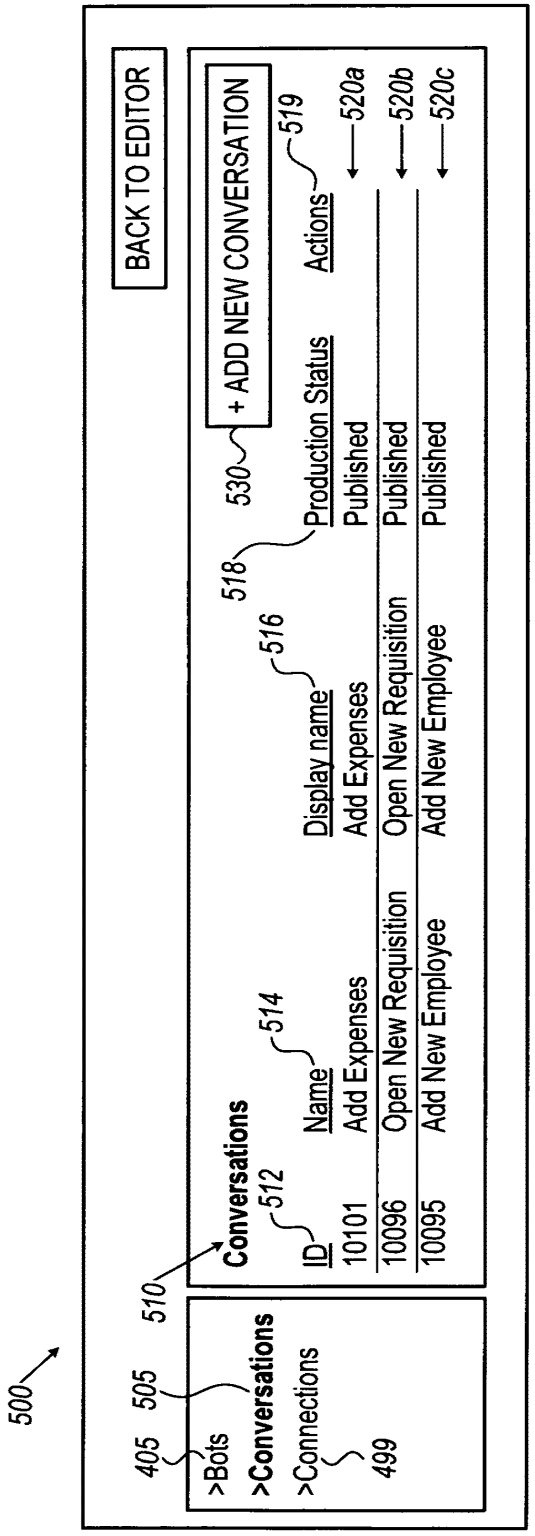

500
405
505
510
>Bots
>Conversations
>Connections
499
Conversations
512
514
516
518
530
519
BACK TO EDITOR
+ ADD NEW CONVERSATION
ID
Name
Display name
Production Status
Actions
10101
Add Expenses
Add Expenses
Published
520a
10096
Open New Requisition
Open New Requisition
Published
520b
10095
Add New Employee
Add New Employee
Published
520c

Fig. 5A

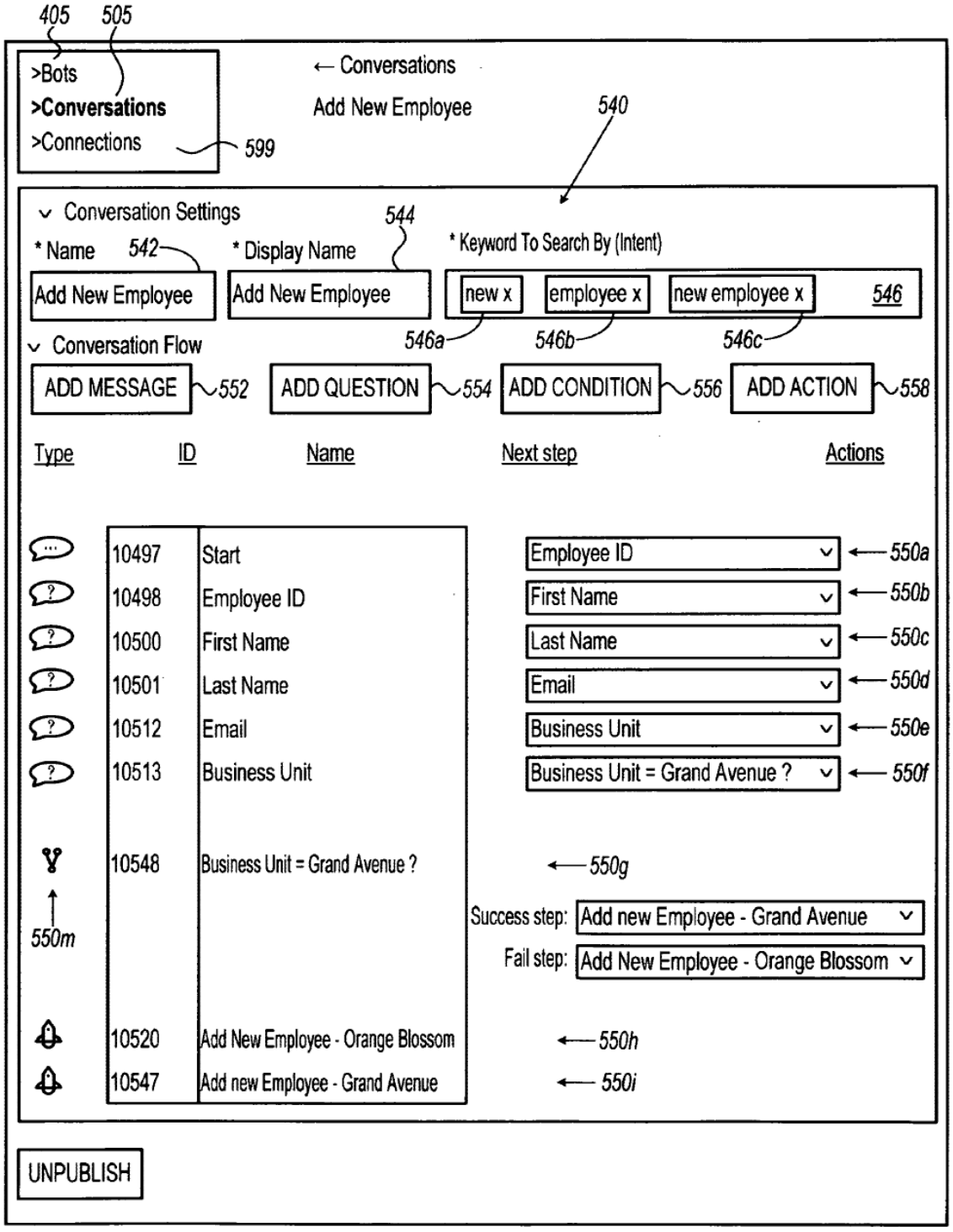

405
505
>Bots
>Conversations
>Connections
599
← Conversations
Add New Employee
540
Conversation Settings
* Name
542
* Display Name
544
* Keyword To Search By (Intent)
Add New Employee
Add New Employee
new x
employee x
new employee x
546
546a
546b
546c
Conversation Flow
ADD MESSAGE
552
ADD QUESTION
554
ADD CONDITION
556
ADD ACTION
558
Type
ID
Name
Next step
Actions
10497
Start
Employee ID
550a
10498
Employee ID
First Name
550b
10500
First Name
Last Name
550c
10501
Last Name
Email
550d
10512
Email
Business Unit
550e
10513
Business Unit
Business Unit = Grand Avenue ?
550f
10548
Business Unit = Grand Avenue ?
550g
550m
Success step:
Add new Employee - Grand Avenue
Fail step:
Add New Employee - Orange Blossom
10520
Add New Employee - Orange Blossom
550h
10547
Add new Employee - Grand Avenue
550i
UNPUBLISH

Fig. 5B

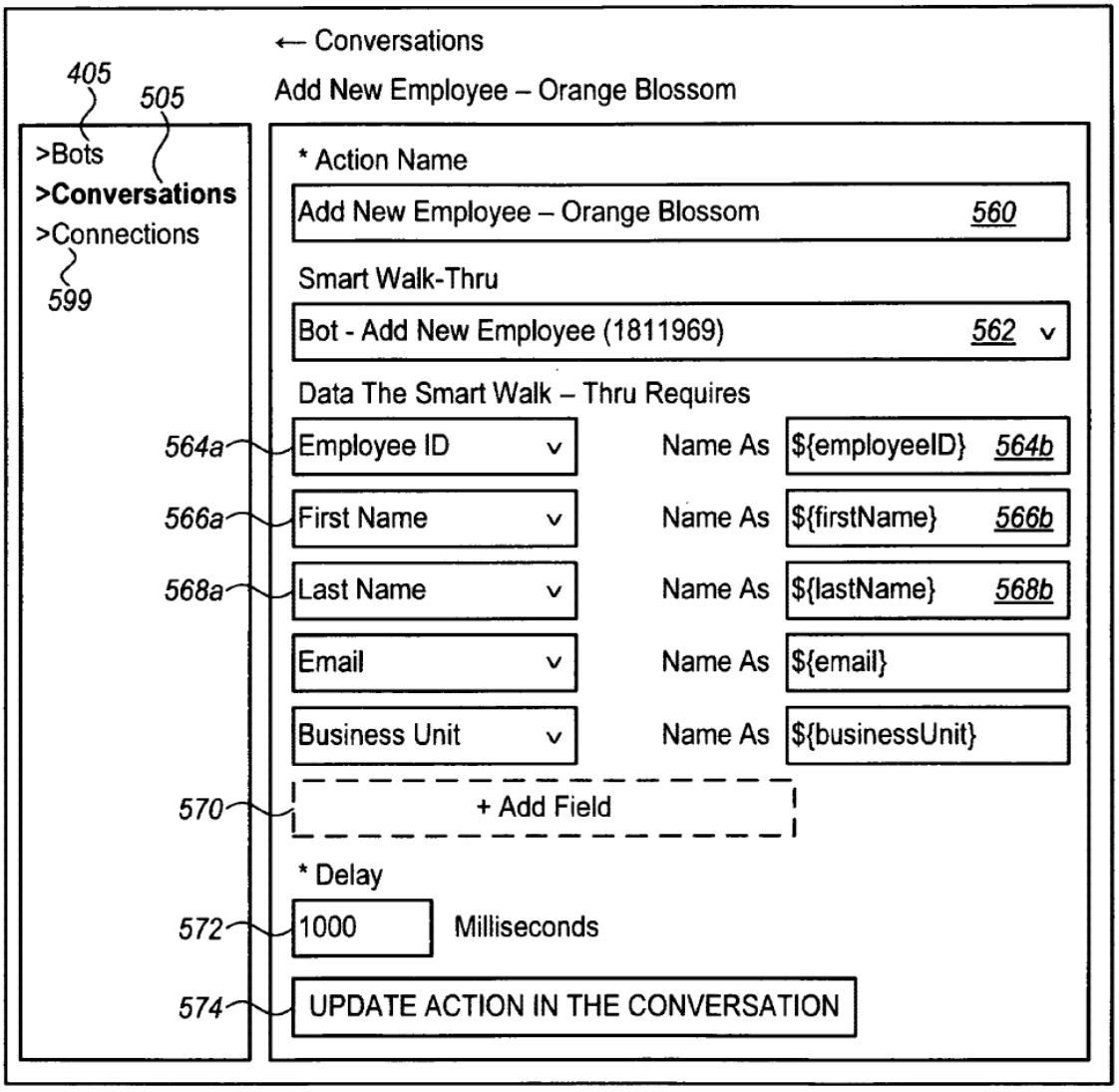

← Conversations
405
505
Add New Employee – Orange Blossom
>Bots
>Conversations
>Connections
599
* Action Name
Add New Employee – Orange Blossom
560
Smart Walk-Thru
Bot - Add New Employee (1811969)
562
Data The Smart Walk – Thru Requires
564a
Employee ID
Name As
${employeeID}
564b
566a
First Name
Name As
${firstName}
566b
568a
Last Name
Name As
${lastName}
568b
Email
Name As
${email}
Business Unit
Name As
${businessUnit}
570
+ Add Field
* Delay
572
1000
Milliseconds
574
UPDATE ACTION IN THE CONVERSATION

Fig. 5C


← Add New Employee
EMPLOYEE ID
>Bots
>Conversations
>Connections
v Question Settings
* Question Name
Employee ID
580
* Question Type
Number
582
* Question Text
What would be the employee ID? (Please use numbers)
584
Suggestions
586
Accept Suggests Only
588
* Error Message
I'm sorry I didn't understand, let's try again.
* Delay
0
Milliseconds
590
UPDATE QUESTION

Fig. 5D

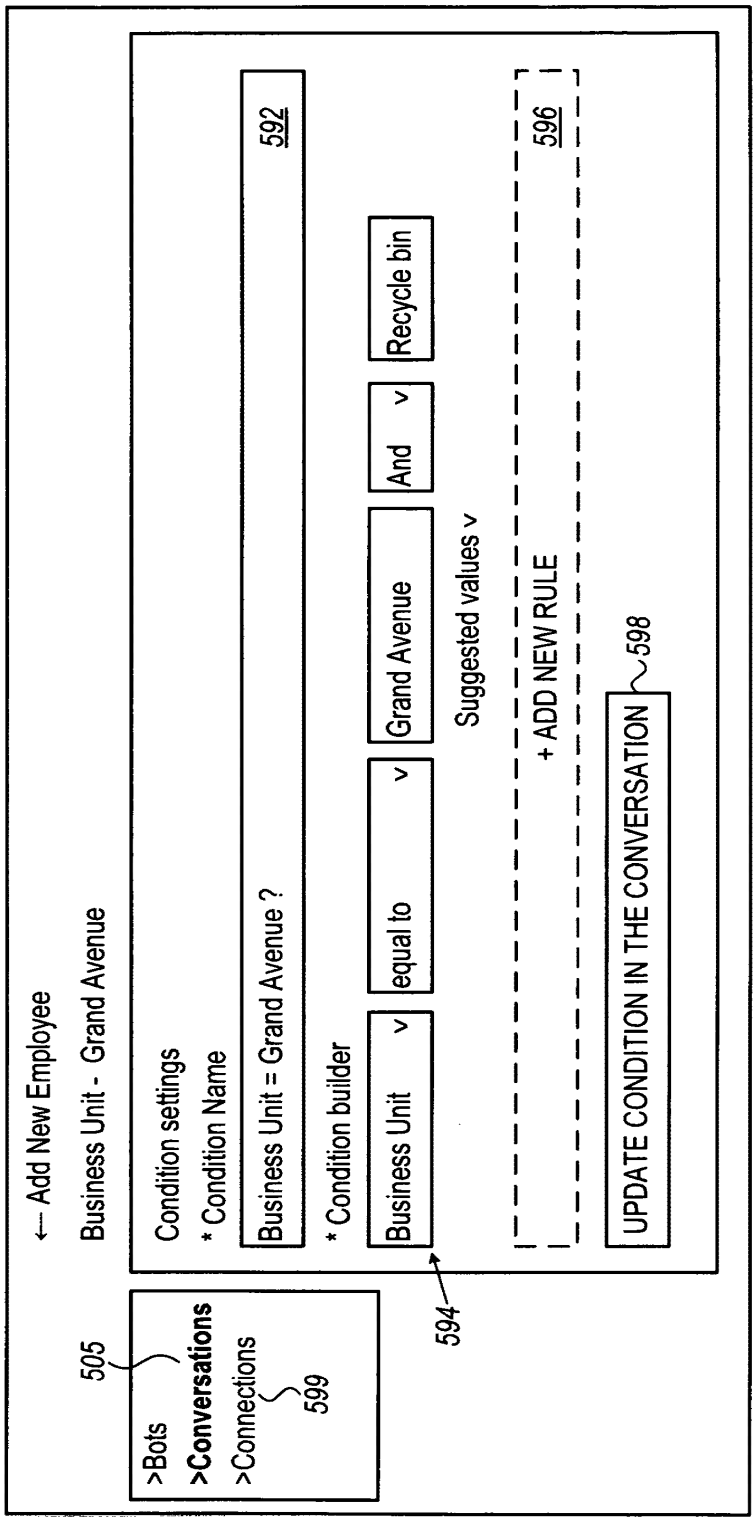

← Add New Employee
Business Unit - Grand Avenue
505
>Bots
>Conversations
>Connections
599
Condition settings
* Condition Name
Business Unit = Grand Avenue ?
592
* Condition builder
Business Unit
equal to
Grand Avenue
And
Recycle bin
Suggested values
+ ADD NEW RULE
596
UPDATE CONDITION IN THE CONVERSATION
598
594

Fig. 5E

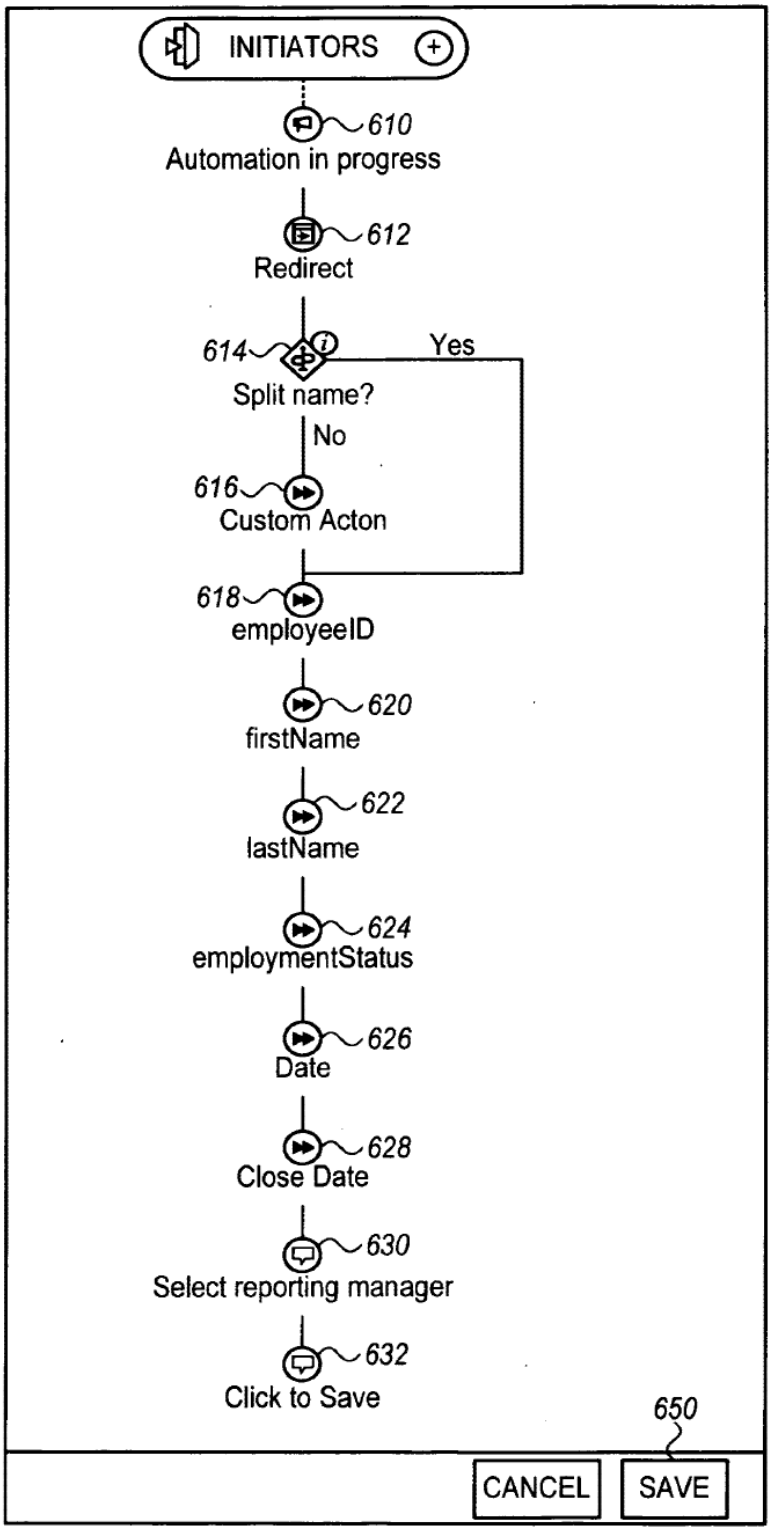

INITIATORS
610
Automation in progress
612
Redirect
614
Split name?
Yes
No
616
Custom Acton
618
employeeID
620
firstName
622
lastName
624
employmentStatus
626
Date
628
Close Date
630
Select reporting manager
632
Click to Save
650
CANCEL
SAVE

Fig. 6

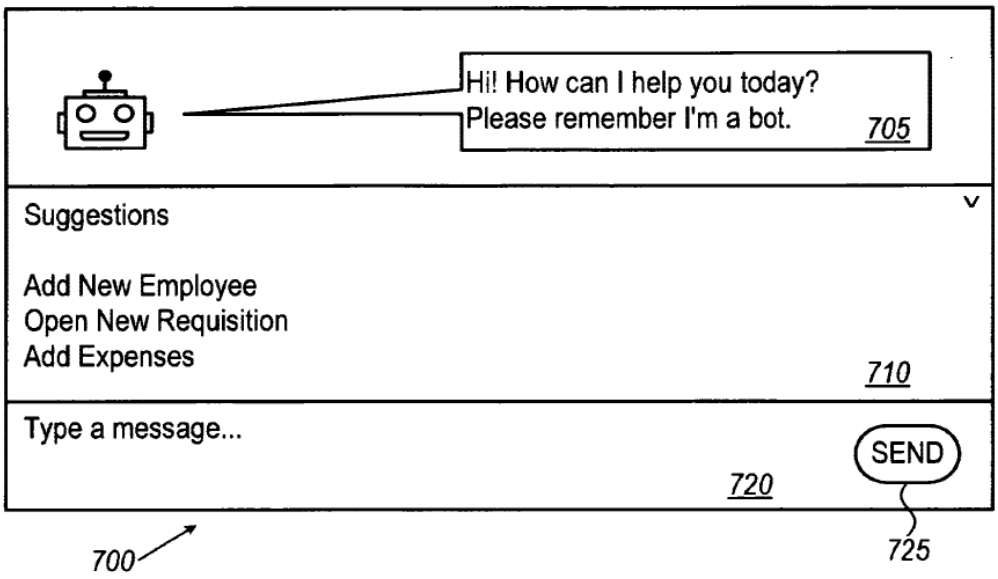

Hi! How can I help you today?
Please remember I'm a bot.
705
Suggestions
Add New Employee
Open New Requisition
Add Expenses
710
Type a message...
720
SEND
725
700

Fig. 7A

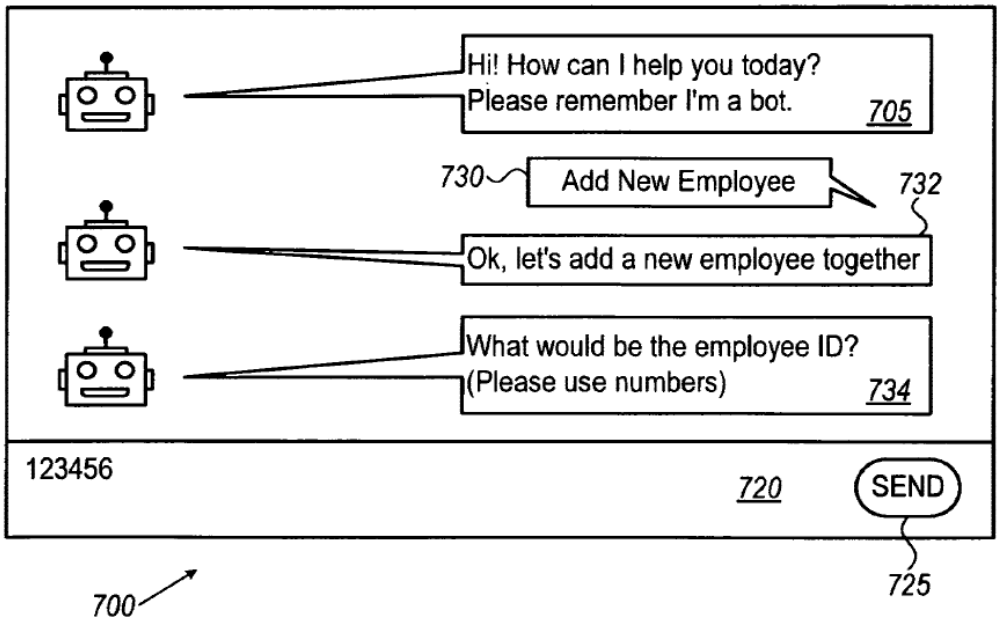

Hi! How can I help you today?
Please remember I'm a bot.
705
730
Add New Employee
732
Ok, let's add a new employee together
What would be the employee ID?
(Please use numbers)
734
123456
720
SEND
725
700

Fig. 7B

IFW

OPAP Code: TRAN.LET

Document Description: Transmittal Letter

OPAP
MAR 2 8 2019
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PTO/SB/21 (07-09)
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	16358467
Filing Date	19-MAR-2019
First Named Inventor	Nir Nahum
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	1179.0130 (583-6.3 NP)

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☑ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please Identify below):

Remarks

1. Certified Copy of PCT/IL2018/051168, filed 4-November-2018
2. Return Postcard

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Koffsky Schwalb LLC		
Signature	/Mark I. Koffsky/		
Printed name	Mark I. Koffsky		
Date	March 25, 2019	Reg. No.	41906

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Signature			
Typed or printed name		Date	

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/358,467	03/19/2019	2192	3180	1179.0130 (583-6.3 NP)	30	4

CONFIRMATION NO. 1560

106928
Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

FILING RECEIPT



Date Mailed: 04/05/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Nir NAHUM, Tel Aviv, ISRAEL;
Shlomi SASSON, Givat Zeev, ISRAEL;

Applicant(s)

WalkMe LTD., Tel Aviv, ISRAEL;

Power of Attorney: The patent practitioners associated with Customer Number 106928

Domestic Priority data as claimed by applicant

This application is a CON of PCT/IL2018/051168 11/04/2018
which claims benefit of 62/581,714 11/05/2017

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/04/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/358,467**

Projected Publication Date: 07/11/2019

Non-Publication Request: No

Early Publication Request: No

Title

Chat-Based Application Interface for Automation

Preliminary Class

717

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

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For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/358,467

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	660
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10			OR	x 100 =	1000
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 460 =	460
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	3180

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 04/08/2019

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

EXAMINER	
ART UNIT	PAPER NUMBER
2192	

NOTIFICATION DATE	DELIVERY MODE
04/08/2019	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner BRIAN W BROWN	**Art Unit** OPET	**AIA (First Inventor to File) Status** Yes

1. THE REQUEST FILED 19 March 2019 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to BRIAN BROWN at (571)272-5338.

In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/BRIAN W BROWN/ Petitions Examiner, OPET	

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 06/07/2019

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

EXAMINER	
SHIBEROU, MAHELET	

ART UNIT	PAPER NUMBER
2171	

NOTIFICATION DATE	DELIVERY MODE
06/07/2019	ELECTRONIC

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Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

-- 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 2 MONTHS 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 3/19/2019.

☐ 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) 1-9,11-22, 41-45, 48, 51-42, 56 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) _____ is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☑ Claim(s) 1-9,11-22, 41-45, 48, 51-42, 56 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 3/19/2019 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.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-9, 11-14 are drawn to a method using a natural language interface to input data or execute functionality, classified in G06F3/167.

II. Claims 41-45, and 48 are drawn to a non-transitory computer readable medium for using a natural language interface to input data or execute functionality, classified in G06F3/167.

III. Claims 15-22 are drawn to a method for defining an automation process to be invoked in response to a conversation of a user with a natural interface, classified in H04L51/02.

IV. Claims 51-52, 56 are drawn to a non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural interface, classified in H04L51/02.

Because these inventions (i.e. I-II and III-IV) are independent or distinct there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement

may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHELET SHIBEROU whose telephone number is (571)270-7493. The examiner can normally be reached on Monday-Friday 9:00 AM-5:00 PM Eastern Time.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abdullah Al Kawsar can be reached on 571-270-3169. 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.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	Art Unit
	MAHELET SHIBEROU	2171

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/31/2019								
	1	÷								
	2	÷								
	3	÷								
	4	÷								
	5	÷								
	6	÷								
	7	÷								
	8	÷								
	9	÷								
	10	-								
	11	÷								
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	35	-								
	36	-								
	37	-								
	38	-								
	39	-								
	40	-								
	41	÷								
	42	÷								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	**Art Unit**
	MAHELET SHIBEROU	2171

CLAIM		DATE								
Final	Original	05/31/2019								
	43	÷								
	44	÷								
	45	÷								
	46	-								
	47	-								
	48	÷								
	49	-								
	50	-								
	51	÷								
	52	÷								
	53	-								
	54	-								
	55	-								
	56	÷								
	57	÷								
	58	÷								

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number:	16/358,467
Filing Date:	3/19/2019
First Named Inventor:	N. Nahum
Art Unit:	2171
Examiner:	Shiberou, M.
Title:	Chat-Based Application Interface for Automation
Attorney Docket No.:	1179.0130 (583-6.3 NP)

RESPONSE TO RESTRICTION/ELECTION REQUIREMENT

In response to the June 7, 2019, restriction requirement, Applicant elects Groups I (claims 1-9 and 11-14) and Group II (claims 41-45 and 48), without traverse.

Dated: June 17, 2019

/Mark I. Koffsky/
Mark I. Koffsky
Registration No. 41,906
KOFFSKY SCHWALB LLC
349 Fifth Avenue
New York, New York 10016
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Electronic Acknowledgement Receipt	
EFS ID:	36324603
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	17-JUN-2019
Filing Date:	19-MAR-2019
Time Stamp:	20:04:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	RRR.pdf	72651 f17590d84ba754b421b3cfc7cf6a5a996801703a	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	72651

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)

CONFIRMATION NO. 1560

106928
Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

PUBLICATION NOTICE

OC00000010956614 1

Title: Chat-Based Application Interface for Automation

Publication No.US-2019-0215283-A1
Publication Date:07/11/2019

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 07/25/2019

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

EXAMINER	
SHIBEROU, MAHELET	

ART UNIT	PAPER NUMBER
2171	

NOTIFICATION DATE	DELIVERY MODE
07/25/2019	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

-- 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 MONTHS 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 6/17/2019.

☐ 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) 1-9,11-14,41-45 and 48 is/are pending in the application.

5a) Of the above claim(s) 15-22,51-52 and 56 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-9,11-14,41-45 and 48 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 3/19/2019 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.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 3/21/2019.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. This action is responsive to the Response to the restriction required filed on 6/17/2019. Claims 1-9, 11-14, 41-45, 48 are pending in the case. Claims 1 and 41 are independent claims.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-5, 7, 9, 11-14, 41-44, and 48** are rejected under 35 U.S.C. 103 as being unpatentable over Corbett et al. (US 2018/0137178 A1, hereinafter Corbett) in view of Chang et al. (2005/0210061, hereinafter Chang).

As to independent **claim 1**, Corbett teaches a method comprising:

using a natural language interface (command entry field 110), receiving input from a user (see paragraph 0025-0026, the user can enter the text string into the command entry field 110 by uttering the text string into an input audio transducer (e.g., microphone) or can enter the text string into the command entry field 110 using a keyboard and/or keypad to type a text string comprising a plurality of characters).;

determining, based on the input from the user, an automation process to be executed, wherein the automation process is an automation process of a computer program having a user interface (“By way of example, a user can enter into the command entry field 110 the text "select APAC, months, LRForcast." In response to the user input, the data analytics client can search across an entire scope of a data array for possible matches for the terms "APAC," "Months" and "LRForecast.” Paragraph 0027-0031, 0036, 0048), and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof (paragraph 0011, 0034-0035,0041-0047 describe executing functionality).

Furthermore, Chang teaches wherein said executing comprises utilizing the user interface of the computer program to input data thereto (“the commands can include create, show, add, hide, highlight, filter, clear, etc. and include attributes further defining the commands.” Paragraph 0028).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett o comprise wherein said executing comprises utilizing the user interface of the computer program to input data thereto. One would have been motivated to make such a

combination to provide a more efficient tool for which information can be inputted and analyzed.

As to dependent **claim 2,** Corbett teaches the method of claim 1. Corbett further teaches, wherein the natural language interface is a chat bot service operable to converse with the user in natural language (the user can enter the text string into the command entry field 110 by uttering the text string into an input audio transducer (e.g., microphone))

As to dependent **claim 3**, Corbett teaches the method of claim 2. Corbett does not appear to expressly teach, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

Chang teaches wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter ("the commands can include create, show, add, hide, highlight, filter, clear, etc. and include attributes further defining the commands." Paragraph 0028).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett to comprise wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the

parameter. One would have been motivated to make such a combination to provide a more efficient tool for which information can be inputted and analyzed.

As to dependent **claim 4**, Corbett teaches the method of claim 1. Corbett does not appear to expressly teach wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

Chang teaches wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields ("the commands can include create, show, add, hide, highlight, filter, clear, etc. and include attributes further defining the commands." Paragraph 0028).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett to comprise wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields. One would have been motivated to make such a combination to provide a more efficient tool for which information can be inputted and analyzed.

As to dependent **claim 5**, Corbett teaches the method of claim 1. Corbett further teaches, wherein the user interface is a Graphical User Interface (GUI) comprising one

or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements (paragraph 0033 and 0047).

As to dependent **claim 7**, Corbett teaches the method of claim 1. Corbett further teaches wherein the automation process comprises a sequence of steps, wherein each step is selected from a group consisting of: a page redirect step; a click element step; a hovering over element step; a set focus to element step; a select value from list step; a fill input field with value step; a prompt user step; a time-wait step; and a condition-wait step (paragraph 0025, 0033, fig. 2-3).

As to dependent **claim 9**, Corbett teaches the method of claim 1. Corbett further teaches, wherein the automation process defines an operation to be performed with respect to an element in the user interface,

wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface (paragraph 0027,0047 the single user input identifies the element),

wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold (paragraph 0029-0030 identify the high similarity score which is above a predetermined threshold).

As to dependent **claim 11**, Corbett teaches the method of claim 1. Corbett further teaches the method comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user (paragraph 0030 a query string provided). Corbett does not specify that the link is configured to cause said executing upon clinking thereon, a person or ordinary skill in the art would recognize that the only purpose is for confirming the command before execution.

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett to comprise such that wherein the link is configured to cause said executing upon clicking thereon. One would have been motivated to make such a combination to allow the user confirm the command.

As to dependent **claim 12**, Corbett teaches the method of claim 11. Corbett, wherein the link comprises a conversation identifier of a conversation session between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said

utilizing the user interface is performed using the one or more values of the parameters (paragraph 0031 the query string indicate attributes to be searched based on the received command).

As to dependent **claim 13**, Corbett teaches the method of claim 1. Corbett further teaches, wherein said executing is performed on a client device of the user (paragraph0050, fig. 5).

As to dependent **claim 14,** Corbett teaches the method of claim 1. Corbett further teaches, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user ("The text string can be entered by a user using a keyboard or keypad, or entered by performing speech recognition on at least one utterance spoken by a user." Paragraph 0014 last sentence).

Claims 41-44 and 48 reflect non-transitory computer readable medium embodying the limitations of claim 1, 3-5, and 11; therefore the claims are rejected under similar rationale.

4. **Claim 6** is rejected under 35 U.S.C. 103 as being unpatentable over Corbett et al. (US 20180137178 A1, hereinafter Corbett) in view of Chang et al. (2005/0210061, hereinafter Chang), and Takechi e t al. (US 20030058369 A1, hereinafter Takechi).

As to dependent **claim 6**, Corbett teaches the method of claim 1.Corbett and Chang do not appear to expressly teach, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

Takechi teaches wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program ("the setting is performed without the use of the API setting." paragraph 0106).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett and Chang to comprise wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program. One would have been motivated to make such a combination to enable non-programmers define the automations that are invoked by the chat bots.

Claim 45 reflects a non-transitory computer readable medium embodying the limitations of claim 6; therefore the claim is rejected under similar rationale.

5. **Claim 8** is rejected under 35 U.S.C. 103 as being unpatentable over Corbett et al. (US 20180137178 A1, hereinafter Corbett) in view of Chang et al. (2005/0210061, hereinafter Chang), and Cronin (US 9509799 B1).

As to dependent **claim 8**, Corbett teaches the method of claim 1. Corbett and Chang do not appear to expressly teach wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation

processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

Cronin teaches selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein (Fig. 2 display setting screen for defining automation processes).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett and Chang to comprise wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein. One would have been motivated to make such a combination to allow the user to customize the automation process by utilizing user-selectable options or commands.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHELET SHIBEROU whose telephone number is (571)270-7493. The examiner can normally be reached on Monday-Friday 9:00 AM-5:00 PM Eastern Time.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abdullah Al Kawsar can be reached on 571-270-3169. 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.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Notice of References Cited	Application/Control No. 16/358,467	Applicant(s)/Patent Under Reexamination NAHUM et al.	
	Examiner MAHELET SHIBEROU	Art Unit 2171	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180137178-A1	05-2018	Corbett; David J.	G06F3/0482	1/1
*	B	US-20050210061-A1	09-2005	Chang, Su Chin	G06F16/243	1/1
*	C	US-20030058369-A1	03-2003	Takechi, Hideaki	H04L12/2805	348/734
*	D	US-9509799-B1	11-2016	Cronin; John	H04L67/32	1/1
*	E	US-20060129379-A1	06-2006	Ramsey; William D.	G06F3/038	704/9
	F					
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FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	Art Unit
	MAHELET SHIBEROU	2171

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

Whatfix Inc. Exhibit 1002 Page 219

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	Art Unit
	MAHELET SHIBEROU	2171

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/31/2019	07/18/2019							
	1	÷	✓							
	2	÷	✓							
	3	÷	✓							
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	15	÷	N							
	16	÷	N							
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	41	÷	✓							
	42	÷	✓							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	**Art Unit**
	MAHELET SHIBEROU	2171

CLAIM		DATE								
Final	Original	05/31/2019	07/18/2019							
	43	÷	✓							
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Whatfix Inc. Exhibit 1002 Page 221

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/06/03 09:15
S2	4	("20160094492" | "20160300570" | "20160352658" | "20170289071").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/03 09:15
S4	15	("20100169792" | "20100251128" | "20160171119" | "20150339942" | "20020194164" | "8024660" | "20110185288" | "20140310596" | "20120317481" | "20140068498" | "8984441" | "20120022951" | "20150310488" | "20070300174" | "20080313149").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/03 13:49
S8	15	"20180025085".pn. "20190102078".pn. "20190066694".pn. "20170286269".pn. "20180330720".pn. "20180287968".pn. "20170180276".pn. "20190207875".pn. "20180083894".pn. "20170293834".pn. "20180332167".pn. "20180248818".pn. "20180174020".pn. "20180181558".pn."20190138171".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:15
S9	2	("20110213642" | "20170310613").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:25
S10	6	"20080089490".pn. "20110213642".pn. "8949377".pn. "8224906".pn. "20090292778".pn. "20180239837".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:41
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S18	17	"20060129379".pn. "20120078611".pn. "8594997".pn. "20050210061".pn. "20130103384".pn. "20190087398".pn. "7613719".pn. "20070174350".pn. "9015030".pn. "20020063734".pn. "20180137178".pn. "20110214067".pn. "20090077494".pn. "20060020886".pn. "20120110459".pn. "9058105".pn. "20160260433".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/18 09:35
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S21	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/18 12:56
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S43	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
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7/19/2019 11:38:50 AM
C:\Users\mshiberou\Documents\EAST\Workspaces\16358467.wsp

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16358467
Filing Date	2019-03-19
First Named Inventor	Nir Nahum
Art Unit	TBD
Examiner Name	TBD
Attorney Docket Number	1179.0130 (583-6.3 NP)

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	1	20160300570		2016-10-13	GUSTAFSON et al.	
	2	20160094492		2016-03-31	Li et al.	
	3	20160352658		2016-12-01	Capper et al.	
	4	20170289071		2017-10-05	Roberts et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16358467
	Filing Date	2019-03-19
	First Named Inventor	Nir Nahum
	Art Unit	TBD
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	1	ISR for PCT/IL2018/051168, issued 2019-01-31	

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Examiner Signature	/MAHELET SHIBEROU/	Date Considered	05/31/2019

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16358467
	Filing Date	2019-03-19
	First Named Inventor	Nir Nahum
	Art Unit	TBD
	Examiner Name	TBD
	Attorney Docket Number	1179.0130 (583-6.3 NP)

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Mark I. Koffsky/	Date (YYYY-MM-DD)	2019-03-21
Name/Print	Mark I. Koffsky	Registration Number	41906

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Electronic Acknowledgement Receipt	
EFS ID:	36826429
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	08-AUG-2019
Filing Date:	19-MAR-2019
Time Stamp:	17:23:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Amend.pdf	205745 76a0b2f727746a9645d08d2644c045e5a3c12085	no	17
Warnings:					

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Total Files Size (in bytes):	205745

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Dear Sir:

This is in response to the United States Patent and Trademark Office Communication mailed July 25, 2019 (hereinafter "**Office Action**").

Kindly amend this application as follows.

Amendments to the claims begin on page 2.

Remarks accompanying the amendments begin on page 10.

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions:

1. (Currently Amended) A method comprising:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface~~to be executed, wherein the automation process is an automation process of a computer program having a user interface~~; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions~~input data thereto or execute functionality thereof~~.

2. (Original) The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. (Original) The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. (Original) The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. (Currently Amended) The method of Claim 1, wherein the sequence of interactions ~~automation process~~ comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. (Original) The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. (Original) The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises

computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. (Canceled)

11. (Original) The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. (Currently Amended) The method of Claim 11, wherein the link comprises a conversation identifier of ~~a~~ the conversation ~~session~~ between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

13. (Original) The method of Claim 1, wherein said executing is performed on a client device of the user.

14. (Original) The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15. (Withdrawn) A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

16. (Withdrawn) The method of Claim 15, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

17. (Canceled)

18. (Withdrawn) The method of Claim 16, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

19. (Withdrawn) The method of Claim 15, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

20. (Withdrawn) The method of Claim 15, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

21. (Withdrawn) The method of Claim 20, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

22. (Withdrawn) The method of Claim 20, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

23-40. (Canceled)

41. (Currently Amended) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface~~to be executed, wherein the automation process is an automation process of a computer program having a user interface~~; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions~~input data thereto or execute functionality thereof~~.

42. (Original) The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. (Original) The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. (Canceled)

47. (Canceled)

48. (Original) The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49. (Canceled)

50. (Canceled)

51. (Withdrawn) A non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

52. (Withdrawn) The non-transitory computer readable medium of Claim 51, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

53. (Canceled)

54. (Canceled)

55. (Canceled)

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56. (Withdrawn) The non-transitory computer readable medium of Claim 51, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

57. (Canceled)

58. (Canceled)

59. (New) The method of Claim 1, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first input; and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input.

REMARKS

Applicant requests reconsideration and allowance of the present application in view of the following remarks.

Claims 1-9, 11-14, 41-45, 48, and 59 are pending in the Present Application, and are presented for examination, with Claims 1 and 41 being independent. Claims 1, 7, 12, and 41 have been amended. Claim 59 has been added. Claim 17 has been cancelled without prejudice or disclaimer to resubmission in a divisional or continuation application. Applicant asserts that no new matter has been introduced by the present amendment.

Applicant is not conceding that the subject matter encompassed by previously presented claims prior to this amendment was not patentable over the art cited by the Examiner. The claims were amended solely to facilitate allowance. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by the claims as presented prior to this amendment and additional claims, in one or more continuing applications.

CLAIM AMENDMENTS

1. Claims 1, 7, 12, and 41 have been amended. Claim 59 has been added. No new matter is introduced. Non-limiting examples of support are discussed.

Claim 1 has been amended to recite "using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback". Support may be found in the Present Application, *inter alia*, at paragraphs [0073], [0074], [0154]-[0157], [0178]-[0183], [0188]-[0191], and Fig. 7A-7B.

Claim 1 has been further amended to recite "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program,

wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface". Support may be found in the Present Application, *inter alia*, at paragraphs [0079], [0081], [0084]-[0085], [0099], [0109], [0110], [0138], and Fig. 6.

Claim 1 has been further amended to recite "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions". Support may be found in the Present Application, *inter alia*, at paragraphs [0078], [0079], [0084], [0101], [0112]-[0135], [0155], and Fig. 6.

Claims 7, 12, and 41 have been amended in a similar manner.

New Claim 59 recites "said determining the automation process comprises: selecting the sequence of interactions from a plurality of sequences based on the first input; and determining a parameter to be used in an interaction of the sequence of interactions based on the second input". Support may be found in the Present Application, *inter alia*, at paragraphs [0110]-[0135], [0138], [0139], [0145], [0150], [0153]-[0158], [0160], [0162], and [0168].

At least in view of the above, Applicant submits that no new matter is introduced by the present amendment.

CLAIM REJECTIONS – 35 USC § 103

2. Claims 1-5, 7, 9, 11-14, 41-44, and 48 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Corbett et al. (US 2018/0137178, hereinafter referred to as Corbett), in view of Chang et al. (US 2005/0210061, hereinafter referred to as Chang).

Claims 6 and 45 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Corbett, in view of Chang, and further in view of Takechi et al. (US 2003/0058369, hereinafter referred to as Takechi).

Claim 8 stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over Corbett, in view of Chang, and further in view of Cronin (US 9,509,799).

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Applicant respectfully traverses these rejections. However, in order to facilitate expeditious prosecution, Applicant has enhanced the claim language. Applicant respectfully asserts that the art of record fails to teach or suggest many claimed features, before and after the amendment. Non-limiting examples are discussed below.

2.1. The cited art does not teach receiving input from a user as part of a conversation between a natural language interface and the user, the conversation including a first input, a feedback, and a second input.

Current Claim 1 recites "using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback".

Applicant respectfully submits that the cited art does not disclose this feature.

The Office Action relies on Corbett at paragraphs [0025] and [0026] for allegedly teaching the feature of original Claim 1 "using a natural language interface, receiving input from a user".

However, Corbett fails to relate to any natural language interface.

Specifically, Corbett at paragraphs [0025] and [0026] merely describes a command entry field 110 that enable a user to enter a single input including a category of data and a processing command for the category of data. As clearly shown in Figures 1-3 of Corbett, command entry field 110 includes an input such as “select APAC, months, LRForcast”, which is by no means a form of natural language.

However, and for the avoidance of doubt, Applicant has enhanced the language of the claim to explicitly recite that the natural language interface is used for "a conversation between the natural language interface and the user including a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback". Such recitation further clarifies that Corbett's command entry field 110 cannot be read on the claimed natural language interface.

Specifically, Corbett fails to relate to any conversation between the user and command entry field 110 that includes a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback from the natural language interface.

Conversely, Corbett is directed to a user inputting a category of data and a processing command, and receiving a result of performing the processing command on the category of data.

Chang cannot cure at least these deficiencies of Corbett.

As a result, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback", as is now explicitly claimed.

2.2. The cited art does not teach determining, based on the first and second inputs from the user, an automation process that is configured to perform a sequence of interactions with a user interface of a computer program

Current Claim 1 recites "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface".

Applicant respectfully submits that the cited art does not disclose this feature.

Specifically, Corbett (e.g., at paragraphs [0027]-[0031], [0036], and [0048]) is directed to a user entering a single input into command entry field 110 of a data analytics client. In response to the single input, the data analytics client searches across a data array for matches to the single input.

This description of Corbett with respect to searching for matches based on a single input fails to relate to any determination of an automation process based on the first

input, received before the feedback to the user, and the second input, that is received after the feedback to the user.

Additionally, Corbett fails to relate to any automation process that is configured to perform a sequence of interactions with a user interface, wherein each interaction includes inputting data to the user interface or executing a functionality of the user interface.

Conversely, Corbett (e.g., see paragraphs [0011], [0034], [0035], and [0041]-[0047]) is directed to a data analytics client that receives a single input including a category of data and a processing command, receives data including the category of data, performs the processing command on the received data, and outputs the result.

This description of Corbett with respect to outputting a result of performing the processing command fails to relate to any automation of a sequence of interactions with a user interface, wherein each interaction includes inputting data to the user interface or executing a functionality of the user interface.

Chang cannot cure at least these deficiencies of Corbett.

As a result, the cited art fails to teach or suggest, let alone disclose "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface", as is now explicitly claimed.

2.3. The cited art does not teach that executing the automation process, that is determined based on the first and second inputs, includes utilizing the user interface to perform the sequence of interactions

Current Claim 1 recites "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions".

Applicant respectfully submits that the cited art does not disclose this feature.

The Office Action relies on Corbett at paragraphs [0011], [0034], [0035], and [0041]-[0047] for allegedly teaching the feature of original Claim 1 "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to input data thereto or execute functionality thereof". Specifically, the Office Action contended that paragraphs [0011], [0034], [0035], and [0041]-[0047] of Corbett allegedly describe "executing functionality" (Page 3 of the Office Action).

However, Corbett fails to relate to any execution of the automation process that utilizes the user interface to input data thereto or execute functionality thereof. More specifically, Corbett fails to relate to any execution of a functionality of the user interface.

Conversely, paragraphs [0011], [0034], [0035], and [0041]-[0047] of Corbett describe a data analytics client that receives a single input including a category of data and a processing command, receives data including the category of data from a data array, performs the processing command on the received data, and outputs the result.

Additionally, Corbett fails to teach an execution of the automation process that utilizes the user interface of the computer program to input data to the user interface of the computer program.

Chang cannot cure at least these deficiencies of Corbett.

Specifically, the Office Action relies on Chang at paragraph [0028] for allegedly teaching "wherein said executing comprises utilizing the user interface of the computer program to input data thereto" (Page 3 of the Office Action).

Conversely, Chang fails to relate to any execution of the automation process that includes inputting data to the user interface of the computer program.

Specifically, paragraph [0028] of Chang merely describes receiving a command at table generation module 204, defining a schema for the command, and providing the schema to interpretation module 206 to derive interpretations of the command.

This description of Chang is directed to interpreting a command of a user, and fails to relate to any execution of an automation process that inputs data to the user interface.

However, and for the avoidance of doubt, Applicant has enhanced the language of the claim to explicitly recite that the execution of the automation process utilizes the user interface of the computer program to perform the sequence of interactions with the user interface. Such recitation further clarifies that Corbett's search cannot be read on the claimed automation process.

Specifically, Corbett fails to relate to any execution of an automation process, determined based on user inputs, that utilizes a user interface to perform the sequence of interactions with the user interface.

As a result, the cited art fails to teach or suggest, let alone disclose "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions", as is now explicitly claimed.

The same arguments are valid, *mutatis mutandis*, also in regards to current Claim 41.

Claims 2-9, 11-14, 42-45, and 48 depend from Claims 1 or 41, and are allowable over the cited art for at least the reason of such dependence.

At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 103.

NEW CLAIM

3. Claim 59 is new. Applicant submits that Claim 59 is patentable over the cited art at least in view of it depending on Claim 1, which is allowable by itself.

CONCLUSION

Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these

amendments and remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

If for any reason the Examiner feels that consultation with Applicant would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below and set an interview.

Respectfully submitted,

Dated: August 8, 2019

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16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

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NOTIFICATION DATE	DELIVERY MODE
11/14/2019	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
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PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

-- 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 MONTHS 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 8/8/2019.

☐ 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) 1-9,11-14,41-45,48 and 59 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) 1-9,11-14,41-45,48 and 59 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.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. This action is responsive to the Amendment filed on 8/8/2019. Claims 1-9, 11-14, 41-45, 48, and 59 are pending in the case. Claims 1 and 41 are independent claims.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

3. **Claims 1-4, 7, 13-14, 41-43, and 59** are rejected under 35 U.S.C. 102(a)(1) as being anticipated by White et al. (US 2014/0115456 A1, hereinafter White).

As to independent **claim 1**, White teaches a method comprising:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the

conversation comprises a first input from the user ("The example method 350 includes an initial input-receiving step 352, which involves receiving user input, e.g., via natural language (speech or text)." Paragraph 0171, 0170), a feedback on the first input from the natural language interface ("The input-receiving step 352 may include additional steps, such as issuing one or more prompts, displaying one or more user-selectable menu items, and so on. " paragraph 0171), and a second input from the user in response to the feedback ("A subsequent optional input-determining step 356 includes prompting a user for additional input if needed, depending upon the operation(s) to be performed, as determined in the operation-identifying step 354." Paragraph 0173);

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface (paragraph 0174-0184, Fig. 1, 0019-0020, 0043, 0054), ; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions ((paragraph 0174-0184, 0045-0046, 0054-0055, 0061, 0068).

As to dependent **claim 2,** White teaches the method of claim 1. White further teaches, wherein the natural language interface is a chat bot service operable to converse with the user in natural language ("natural language dialog or conversation

flow that may include both text representative of user provided natural language input (e.g., voice)" paragraph 0018)

As to dependent **claim 3**, White teaches the method of claim 2. White further teaches wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter ("providing one or more additional prompts, which are adapted to query the user for input specifying one or more parameters for input to a Web service to be called to create a computing object….Examples of parameters include a customer identification number, an opportunity identification number, a parameter indicating an interaction type, and so on." Paragraph 0016-0017).

As to dependent **claim 4**, White teaches the method of claim 1. White further teaches wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields (Fig. 13, paragraph 0177 describes filling form fields).

As to dependent **claim 7**, White teaches the method of claim 1. White further teaches wherein the sequence of interactions comprises a sequence of steps, wherein each step is selected from a group consisting of: a page redirect step; a click element step; a hovering over element step; a set focus to element step; a select value from list

step; a fill input field with value step; a prompt user step; a time-wait step; and a condition-wait step (Fig. 1-13, paragraph 0177, 0075 Table 1).

As to dependent **claim 13**, White teaches the method of claim 1. White further teaches, wherein said executing is performed on a client device of the user (Fig. 1 Client device 12).

As to dependent **claim 14,** White teaches the method of claim 1. White further teaches, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user ("user provided natural language input (e.g., voice)" Paragraph 0018).

As to dependent **claim 59**, White teaches the method of Claim 1. White further discloses, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first input ("interpreting the natural language input and determining a request or command representative thereof" paragraph 0008); and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input (providing one or more additional prompts, which are adapted to query the user for input specifying one or more parameters for input to a Web service to be called to create a computing object, paragraph 0016, Fig. 13 steps 358-366)

Claims 41-43 reflect non-transitory computer readable medium embodying the limitations of claim 1 and 3-4, therefore the claims are rejected under similar rationale.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 5, 9, 11-12, 44 and 48** are rejected under 35 U.S.C. 103 as being unpatentable over White et al. (US 2014/0115456 A1, hereinafter White) in view of Corbett et al. (US 2018/0137178 A1, hereinafter Corbett).

As to dependent **claim 5**, White teaches the method of claim 1. White does not appear to teach wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

Corbett teaches wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements (paragraph 0033 and 0047).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of White to comprise wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

As to dependent **claim 9**, White teaches the method of claim 1. Corbett teaches, wherein the automation process defines an operation to be performed with respect to an element in the user interface,

wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises identifying the element in the user interface (paragraph 0027,0047 the single user input identifies the element),

wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest

similarity score is at least above a predetermined threshold (paragraph 0029-0030 identify the high similarity score which is above a predetermined threshold).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of White to comprise the limitations taught by Corbett. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

As to dependent **claim 11**, White teaches the method of claim 1. Corbett teaches the method comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user (paragraph 0030 a query string provided). Corbett does not specify that the link is configured to cause said executing upon clinking thereon, a person or ordinary skill in the art would recognize that the only purpose is for confirming the command before execution.

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett to comprise such that wherein the link is configured to cause said executing upon clicking thereon. One would have been motivated to make such a combination to allow the user confirm the command.

As to dependent **claim 12**, White teaches the method of claim 11. Corbett teaches wherein the link comprises a conversation identifier of the conversation ~~b~~between the user and the natural language interface, wherein the natural language

interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said

utilizing the user interface is performed using the one or more values of the parameters (paragraph 0031 the query string indicate attributes to be searched based on the received command).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of White to comprise the limitations taught by Corbett. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

Claims 44 and 48 reflect non-transitory computer readable medium embodying the limitations of claims 5 and 11; therefore the claims are rejected under similar rationale.

4. **Claims 6 and 45 are** rejected under 35 U.S.C. 103 as being unpatentable over White et al. in view of Takechi e t al. (US 20030058369 A1, hereinafter Takechi).

As to dependent **claim 6**, White teaches the method of claim 1. White does not appear to expressly teach, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

Takechi teaches wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program ("the setting is performed without the use of the API setting." paragraph 0106).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of White to comprise wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program. One would have been motivated to make such a combination to enable non-programmers define the automations that are invoked by the chat bots.

Claim 45 reflects a non-transitory computer readable medium embodying the limitations of claim 6; therefore the claim is rejected under similar rationale.

5. **Claim 8** is rejected under 35 U.S.C. 103 as being unpatentable over White et al. in view of Cronin (US 9509799 B1).

As to dependent **claim 8**, White teaches the method of claim 1. White does not appear to expressly teach wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

Cronin teaches selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein (Fig. 2 display setting screen for defining automation processes).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of White to comprise wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein. One would have been motivated to make such a combination to allow the user to customize the automation process by utilizing user-selectable options or commands.

Response to Arguments

6. Applicant's prior art arguments have been considered but are moot in view the new grounds of rejection presented above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHELET SHIBEROU whose telephone number is (571)270-7493. The examiner can normally be reached on Monday-Friday 9:00 AM-5:00 PM Eastern Time.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abdullah Al Kawsar can be reached on 571-270-3169. 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.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Notice of References Cited	Application/Control No. 16/358,467	Applicant(s)/Patent Under Reexamination NAHUM et al.	
	Examiner MAHELET SHIBEROU	Art Unit 2171	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20140115456-A1	04-2014	White; Brent-Kaan William	G10L15/22	715/708
*	B	US-20120265528-A1	10-2012	Gruber; Thomas Robert	G10L15/18	704/235
*	C	US-20120016678-A1	01-2012	Gruber; Thomas Robert	G10L15/22	704/275
*	D	US-20170293610-A1	10-2017	Tran; Bao	G06F16/90332	1/1
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	Art Unit
	MAHELET SHIBEROU	2171

CPC - Searched*		
Symbol	Date	Examiner
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	7/19/2019	MS
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	11/07/2019	

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
East Search	7/19/2019	MS
Inventor name search	7/19/2019	MS
CPC with limited text search	7/19/2019	MS
East Sarch	11/07/2019	MS
CPC with limited text search	11/07/2019	MS
Text search	11/07/2019	MS

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/31/2019	07/18/2019	11/07/2019						
	1	÷	✓	✓						
	2	÷	✓	✓						
	3	÷	✓	✓						
	4	÷	✓	✓						
	5	÷	✓	✓						
	6	÷	✓	✓						
	7	÷	✓	✓						
	8	÷	✓	✓						
	9	÷	✓	✓						
	10	-	-	-						
	11	÷	✓	✓						
	12	÷	✓	✓						
	13	÷	✓	✓						
	14	÷	✓	✓						
	15	÷	N	N						
	16	÷	N	N						
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	39	-	-	-						
	40	-	-	-						
	41	÷	✓	✓						
	42	÷	✓	✓						

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CLAIM		DATE								
Final	Original	05/31/2019	07/18/2019	11/07/2019						
	43	÷	✓	✓						
	44	÷	✓	✓						
	45	÷	✓	✓						
	46	-	-	-						
	47	-	-	-						
	48	÷	✓	✓						
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	53	-	-	-						
	54	-	-	-						
	55	-	-	-						
	56	÷	N	N						
	57	-	-	-						
	58	-	-	-						
	59			✓						

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/06/03 09:15
S2	4	("20160094492" | "20160300570" | "20160352658" | "20170289071").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/03 09:15
S4	15	("20100169792" | "20100251128" | "20160171119" | "20150339942" | "20020194164" | "8024660" | "20110185288" | "20140310596" | "20120317481" | "20140068498" | "8984441" | "20120022951" | "20150310488" | "20070300174" | "20080313149").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/03 13:49
S8	15	"20180025085".pn. "20190102078".pn. "20190066694".pn. "20170286269".pn. "20180330720".pn. "20180287968".pn. "20170180276".pn. "20190207875".pn. "20180083894".pn. "20170293834".pn. "20180332167".pn. "20180248818".pn. "20180174020".pn. "20180181558".pn."20190138171".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:15
S9	2	("20110213642" | "20170310613").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:25
S10	6	"20080089490".pn. "20110213642".pn. "8949377".pn. "8224906".pn. "20090292778".pn. "20180239837".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:41
S14	47	((chat adj bot) or (virtual adj agent) or (virtual adj assistance)) same (web or webpage or user adj interface) near3 (form or input adj field or data adj entry)	US-PGPUB; USPAT	OR	ON	2019/07/05 11:09
S15	12	("20100082620" | "20160358234" | "20140081925" | "20140108308" | "20150193693" | "9229800" | "20160217119" | "7685144" | "20170032029" | "20110029862" | "20160217124" | "20170091320").PN.	US-PGPUB; USPAT	OR	ON	2019/07/05 11:25
S16	45	("6604090" | "20030093428" | "6832196" | "6983307" | "20080270224" | "7295664" | "6466654" | "20040128136" | "20070226198" | "7366766" | "7373300" | "6539080" | "6604075" | "20010056479" | "20030012344" | "7146323" | "7222074" | "20030035519" | "6570974" | "20050135571" | "6807529" | "6895084" | "7275086" | "6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" |	US-PGPUB; USPAT	OR	ON	2019/07/05 12:12

		"5915001" | "7143042" | "7487440").PN.				
S17	6	"20170255445".pn. "20190126463".pn. "20180107653".pn. "8713540".pn. "7487095".pn. "20190103101".pn.	US-PGPUB; USPAT	OR	ON	2019/07/05 12:24
S18	17	"20060129379".pn. "20120078611".pn. "8594997".pn. "20050210061".pn. "20130103384".pn. "20190087398".pn. "7613719".pn. "20070174350".pn. "9015030".pn. "20020063734".pn. "20180137178".pn. "20110214067".pn. "20090077494".pn. "20060020886".pn. "20120110459".pn. "9058105".pn. "20160260433".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/18 09:35
S19	1	"9015030".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/18 10:15
S20	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/07/18 10:24
S21	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/18 12:56
S42	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
S43	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
S44	5	(Nahum near3 Nir).inv.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
S45	1	(Sasson near3 Shlomi).inv.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:27
S46	229	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:28
S48	46	(chat near3 bot) with (user adj interface or application) with (input or command)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:30
S49	49	((chat adj bot) or (virtual adj agent) or (virtual adj assistance)) same (web or webpage or user adj interface or application) near3 (form or input adj field or data adj entry or table)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:31
S50	29	S46 and (G06F3/0482 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F3/167).CPC.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:33
S51	34	("6539080" | "6604075" | "20010056479" | "20030012344" | "7146323" | "7222074" | "20030035519" | "6570974" | "20050135571" | "6807529" | "6895084" | "7275086" | "6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" | "5915001" | "7143042" | "7487440").PN.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:34

S52	229	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:37
S53	48	S52 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:37
S54	2	"20180137178".pn. "20050210061".pn.	US-PGPUB; USPAT	OR	ON	2019/11/04 10:59
S55	52	(non-human or non near2 human or robot) near3 (chat) with (website or webpage or service)	US-PGPUB; USPAT	OR	ON	2019/11/04 11:22
S56	16	("7379087" | "20070186172" | "7861176" | "20010032244" | "8335825" | "20120072440" | "7305350" | "8271509" | "20130332537" | "20120036245" | "20120036245" | "7263526" | "20030037110" | "20090234926" | "8335495" | "20010054064" | "20100076837" | "20010032244" | "20090234926" | "7305350" | "8271509" | "8335495").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 11:38
S57	0	(non-human or non near2 human or robot or chat adj bot) near3 (help or assistance) near3 (suggest$3 or recommend$3 or feedback) near7 (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:26
S58	32	(non-human or non near2 human or robot or chat adj bot) near3 (help or assistance) same (suggest$3 or recommend$3 or feedback) same (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:26
S59	48	(chat adjs bot) near3 (list$3 or present$3 or display$3) same (help or assistance) same (suggest$3 or recommend$3 or feedback) same (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:28
S73	6	"20180144126".pn. "20180189408".pn. "20070168480".pn. "20170237692".pn. "20180189795".pn. "20090281966".pn.	US-PGPUB; USPAT	OR	ON	2019/11/04 13:06
S74	142	(chat adj bot or bot or robot) with (complet$3 or finish$3 or help$3 or assist$4) with (task or job or interaction) near3 (application or web or website or webpage or program)	US-PGPUB; USPAT	OR	ON	2019/11/04 13:21
S76	1011	(chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user	US-PGPUB; USPAT	OR	ON	2019/11/04 13:27
S77	2	("20150063556" | "20170324866").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 13:34
S78	40	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) with (task or (fill$3 or complet$3) near2 (form or field))	US-PGPUB; USPAT	OR	ON	2019/11/04 13:41
S79	111	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) near3 service	US-PGPUB; USPAT	OR	ON	2019/11/04 13:53
S80	27	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) near3 (interact$3 near3 (application or	US-PGPUB; USPAT	OR	ON	2019/11/04 13:54

		user adj interface))				
S81	1	("20120215871").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 14:06
S82	200	(application or user adj interface or program or website or webpage or web) near5 ((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user)	US-PGPUB; USPAT	OR	ON	2019/11/04 14:15
S83	3	"20180005216".pn. "20190207875".pn. "20180005215".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/04 14:30
S84	3	"20190287537".pn. "20190066694".pn. "20180102989".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/04 14:34
S85	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:11
S86	1	"20160283463".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:29
S87	11	"20160283463".pn. "20040083092".pn. "20140278343".pn. "10419489".pn. "20170293610".pn. "20180081950".pn. "20180212904".pn. "9201865".pn. "20090229264".pn. "8346563".pn. "20140019116".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:37
S88	13	("9130900" | "9201865" | "20090313055" | "20120150922" | "20100125456" | "20130110519" | "6952665" | "20130198360" | "20110035452" | "20120271640" | "7103553" | "20090248587" | "10042836").PN.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:53
S90	9	"20140006082".pn. "20180039478".pn. "20190310824".pn. "20100318398".pn. "20140012574".pn. "20180039477".pn. "20180144308".pn. "20140343950".pn."20140115456".pn.	US-PGPUB; USPAT	OR	ON	2019/11/07 15:12
S91	8	("20120209586" | "20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2019/11/07 15:54
S92	4641	(application or GUI or user adj interface) with (voice near3 (command or input)) and (natural near language)	US-PGPUB; USPAT	OR	ON	2019/11/07 15:59
S93	293	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03
S94	63	S93 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03
S95	63	S94 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03

11/8/2019 1:03:51 PM
C:\Users\mshiberou\Documents\EAST\Workspaces\16358467.wsp

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/358,467	Filing Date 03/19/2019	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/29/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/ANGELA S WHITE/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/358,467	Filing Date 03/19/2019	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/29/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/MYRTLE B LEIGH/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Dear Sir:

This is in response to the United States Patent and Trademark Office Communication mailed November 14, 2019 (hereinafter "**Office Action**").

Kindly amend this application as follows.

Amendments to the claims begin on page 2.

Remarks accompanying the amendments begin on page 10.

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions:

1. (Previously presented) A method comprising:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions.

2. (Original) The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. (Original) The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. (Original) The method of Claim 1, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said

utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. (Original) The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. (Previously presented) The method of Claim 1, wherein the sequence of interactions comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. (Original) The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. (Original) The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the user interface, wherein said identifying the element comprises computing a similarity score for each element in the user interface using the plurality of parameters of the element, and selecting a selected element having

a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. (Canceled)

11. (Original) The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. (Previously presented) The method of Claim 11, wherein the link comprises a conversation identifier of the conversation between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the user interface is performed using the one or more values of the parameters.

13. (Original) The method of Claim 1, wherein said executing is performed on a client device of the user.

14. (Original) The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15. (Withdrawn) A method for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the method comprising:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer

program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

16. (Withdrawn) The method of Claim 15, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

17. (Canceled)

18. (Withdrawn) The method of Claim 16, wherein the conversation elements comprise a second action element associated with a second automation process, whereby the natural language interface is configured to selectively invoke either the automation process or the second automation process based on interaction with the user.

19. (Withdrawn) The method of Claim 15, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation; wherein each of the plurality of conversations is associated with one or more terms, wherein the natural language interface is configured to select a conversation from the plurality of conversations based on a user intent matching the one or more terms, wherein the user intent is determined based on interaction of the user with the natural language interface.

20. (Withdrawn) The method of Claim 15, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language

interface is configured to generate and provide the user with a link, wherein interaction with the link is configured to cause execution of the automation process.

21. (Withdrawn) The method of Claim 20, wherein the link comprises a conversation identifier of a conversation between the user and the natural language interface, wherein the one or more values are configured to be stored in a database by the natural language interface and retrieved, using the conversation identifier, by a client device executing the automation process.

22. (Withdrawn) The method of Claim 20, wherein the link comprises the one or more values, thereby providing the one or more values to the automation process.

23-40. (Canceled)

41. (Previously presented) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface; and

executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions.

42. (Original) The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter,

wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. (Original) The non-transitory computer readable medium of Claim 41, wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. (Original) The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. (Canceled)

47. (Canceled)

48. (Original) The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49. (Canceled)

50. (Canceled)

51. (Withdrawn) A non-transitory computer readable medium for defining an automation process to be invoked in response to a conversation of a user with a natural language interface, the non-transitory computer readable medium retaining

program instructions, which program instructions when read by a processor, cause the processor to perform:

defining a conversation to be implemented by a natural language interface, wherein the conversation is configured to obtain from the user one or more values to one or more parameters;

associating the conversation with the automation process, wherein the automation process is configured to utilize a user interface of a computer program to input data thereto or execute functionality thereof, wherein the automation process is a parameterized automation process depending on the one or more parameters; and

publishing the conversation to be accessible to a user via the natural language interface, wherein the user is enabled to interact with the natural language interface in accordance with the conversation, whereby the parameterized automation process is invoked automatically by the natural language interface and using one or more values provided by the user to the natural language interface for the one or more parameters.

52. (Withdrawn) The non-transitory computer readable medium of Claim 51, wherein said defining comprises determining a conversation flow, wherein the conversation flow defines an order between conversation elements, wherein the conversation elements comprise at least a question element and an action element, wherein the action element is associated with automation process.

53. (Canceled)

54. (Canceled)

55. (Canceled)

56. (Withdrawn) The non-transitory computer readable medium of Claim 51, wherein the natural language interface is implemented by a third-party messaging service, wherein the natural language interface is configured to generate and provide the

user with a link, wherein interaction with the link is configured to cause execution of the automation process.

57. (Canceled)

58. (Canceled)

59. (Previously presented) The method of Claim 1, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first input; and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input.

REMARKS

Applicant requests reconsideration and allowance of the present application in view of the following remarks.

Claims 1-9, 11-14, 41-45, 48, and 59 are pending in the Present Application, and are presented for examination, with Claims 1 and 41 being independent.

CLAIM REJECTIONS – 35 USC § 102

1. Claims 1-4, 7, 13, 14, 41-43, and 59 stand rejected under 35 U.S.C. §102(a)(1) as allegedly being anticipated by White et al. (US 2014/0115456 A1, hereinafter White).

Applicant respectfully traverses theses rejections. Applicant respectfully asserts that the art of record fails to teach or suggest many claimed features. Non-limiting examples are discussed below.

1.1. The cited art does not teach determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program.

Claim 1 recites "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface".

Applicant respectfully submits that the cited art does not disclose this feature.

Specifically, White fails to teach determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program.

Conversely, the only interaction with a user interface of White is a conversation flow between the user and client-side software 24, while the rest of the actions described by White are performed at ERP server system 14 and do not interact with the user interface (e.g., see Fig. 1, 3-11 of White).

The Office Action relies on White at Figure 1 and paragraphs [0019], [0020], [0043], [0054], and [0174]-[0184], for allegedly teaching these features. Paragraphs [0019] and [0020] of White describe a conversation flow between a user of a mobile enterprise application and an ERP system, where based on the user input to the conversation flow, parameters are determined so that enterprise data could be created or viewed. Paragraphs [0043] and [0054] of White describe an ERP system including computing objects that can be edited or retrieved. Paragraphs [0174]-[0184] of White describe populating a form with parameters from the conversation flow until all form fields are populated and submitting the populated form to the server for completing an enterprise operation. For example, if the user wants to create a note object, the virtual assistant 34, which is part of server-side software 30, retrieves required parameters for a form of a note object, and prompts the user to input the required parameters to populate the form, which is then sent to the server (see paragraph [0064] of White).

These descriptions of White with respect to populating a form and forwarding the form to a server based on a conversation flow is fundamentally different from, and unrelated to the claimed feature of "determining, based on the first and second inputs from the user, an automation process that is configured to perform an automation of a sequence of interactions with a user interface, wherein each interaction includes inputting data to the user interface or executing a functionality of the user interface".

Specifically, populating the fields of the form of White is not performed by inputting data to the user interface or by executing a functionality of the user interface. Conversely, as clearly illustrated by Fig. 3-11 of White, the form is not visible to the user interface (the user interface only displays the conversation flow), and thus the form cannot be populated via any sequence of interactions with the user interface of the computer program.

It is further noted that the recited automation process cannot be interpreted as the enterprise operation of White, at least since the enterprise operation of White is not performed by inputting data to the user interface or by executing a functionality of the user interface. Conversely, White describes that the enterprise operation includes viewing retrieved enterprise data or creating data computing objects such as an appointment computing object (e.g., see Figure 2 and paragraphs [0019], [0061], [0092]

of White). Specifically, White describes that if a user command is identified as a request to view data from the Enterprise Resource Planning system, the requested data is retrieved from database 28 via server-side software 30 and its representation is displayed to the user. However, displaying a representation of retrieved data cannot be read as an automated sequence of interactions with a user interface, wherein each interaction includes inputting data to the user interface or executing a functionality of the user interface. Additionally, White describes that if a user initiates creation of a computing object of a task, appointment, and so on, a retrieved form is populated and forwarded to the server-side software 30, which creates the computing object and adds it to database 28. However, forwarding a form to a server cannot be read as a sequence of interactions with a user interface of the computer program.

It is further noted that the recited automation process cannot be interpreted as the conversation flow of White, at least since the conversation flow of White is not an automated sequence, and each prompt to the user does not include a sequence of interactions. Furthermore, White teaches away from automating the user prompts, at least since the user prompts are based on identifying an unfilled form field, which cannot be predicted prior to each input of the user.

As a result, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program, wherein each interaction of the sequence of interactions comprises inputting data to the user interface or executing a functionality of the user interface", as is explicitly claimed.

1.2. The cited art does not teach executing the automation process, that is determined based on the first and second inputs, by utilizing the user interface to perform the sequence of interactions

Claim 1 recites "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions".

Applicant respectfully submits that the cited art does not disclose this feature.

Specifically, White fails to teach executing the automation process including the sequence of interactions, that is determined based on the first and second inputs, utilizing the user interface.

The Office Action relies on White at paragraphs [0045], [0046], [0054], [0055], [0061], [0068], and [0174]-[0184], for allegedly teaching this feature. Paragraphs [0045] and [0046] of White describe that computing objects in database 28 can include a note, appointment, opportunity, task or a customer interaction. Paragraphs [0054] and [0055] of White describe different types of enterprise operations, and paragraphs [0061] and [0068] of White describe virtual assistant 34, which is part of server-side software 30, enabling user selection and creation of database objects 28.

These descriptions of White with respect to retrieving or creating database objects 28 are performed by a server and thus are not performed by the user interface. Specifically, as described above, the only interaction with a user interface of White is a conversation flow between the user and client-side software 24, while the rest of the actions described by White are performed at ERP server system 14 and do not interact with the user interface (e.g., see Fig. 1, 3-11 of White).

The Office Action also referred to paragraphs [0174]-[0184] of White, which describe populating a form until all form fields are populated and submitting the populated form to the server. However, populating the form of White is not performed by any interaction with the user interface. Conversely, as clearly illustrated by Fig. 3-11 of White, the form is not visible to the user interface (the user interface only displays the conversation flow), and thus the form cannot be populated via any sequence of interactions with the user interface of the computer program.

As a result, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions", as is explicitly claimed.

The same arguments are valid, *mutatis mutandis*, also in regards to current Claim 41.

Furthermore, it is respectfully submitted that independent claims 1 and 41 are patentable, and thus allowable, over any combination of the prior art references on record. In this regard, it is noted that the distinguishing features of independent claims 1 and 41 as discussed above, would not have been obvious at the time the invention was made to a person skilled in the art, in view of White, alone or in combination with any of the other cited references on record, including the References of Corbett, Takechi, and Cronin, as discussed below.

At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 102.

CLAIM REJECTIONS – 35 USC § 103

2. Claims 5, 9, 11-12, 44, and 48 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over White in view of Corbett et al. (US 2018/0137178, hereinafter referred to as Corbett).

Claims 6 and 45 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over White, in view of Takechi et al. (US 2003/0058369, hereinafter referred to as Takechi).

Claim 8 stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over White in view of Cronin (US 9,509,799).

Applicant submits that Corbett, Takechi and Cronin, alone or in combination, fail to remedy the deficiencies of White in disclosing the claimed features of Claims 1 or 41. Applicant submits that even a combination of such references does not teach or suggest all claimed features of Claims 1 or 41. As Claims 5, 6, 8, 9, 11-12, 44, 45, and 48 depend from Claims 1 or 41, Applicant submits that they are allowable over the cited art for at least the reason of such dependence.

At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 103.

CONCLUSION

Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these amendments and remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

If for any reason the Examiner feels that consultation with Applicant would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below and set an interview.

Respectfully submitted,

Dated: December 29, 2019

/Mark I. Koffsky/

Mark I. Koffsky
Registration No. 41,906
KOFFSKY SCHWALB LLC
349 Fifth Avenue, Suite 733
New York, NY 10016
Telephone: (646) 553-1590
Facsimile: (646) 553-1591
Email: patent@koffskyschwalb.com

Whatfix Inc. Exhibit 1002 Page 287

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

STATEMENT

Applicant today inadvertently filed a "Response to Election / Restriction Filed" in this case. This paper was intended for a different application and should be disregarded in this case.

Respectfully submitted,

Dated: December 29, 2019

/Mark I. Koffsky/

Mark I. Koffsky
Registration No. 41,906
KOFFSKY SCHWALB LLC
349 Fifth Avenue, Suite 733
New York, NY 10016
Telephone: (646) 553-1590
Facsimile: (646) 553-1591
Email: patent@koffskyschwalb.com

Electronic Acknowledgement Receipt	
EFS ID:	38156774
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	29-DEC-2019
Filing Date:	19-MAR-2019
Time Stamp:	23:26:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	Statement.pdf	89228 154be5f0d463ff13f64195657a2d2da37b3fcca5	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	89228

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 01/27/2020

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

EXAMINER	
SHIBEROU, MAHELET	

ART UNIT	PAPER NUMBER
2171	

NOTIFICATION DATE	DELIVERY MODE
01/27/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 29 December 2019 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☑ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires ____ months from the mailing date of the final rejection.
   b) ☑ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection.The current period for reply expires ____ months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANTS FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____ (See 37CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicants reply has overcome the following rejection(s): _____
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s):(a)☐ will not be entered, or (b)☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☑ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☐ Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed:_____.
    Claim(s) objected to:_____.
    Claim(s) rejected:1-9,11-14,41-45,48 and 59.
    Claim(s) withdrawn from consideration:_____.

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

Continuation of REQUEST FOR RECONSIDERATION/OTHER 12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because applicant's arguments are not persuasive. Applicant argues that White fails to teach that the automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program because in White the form is not visible to the user interface (remarks page 10-11). Examiner respectfully disagrees. The independent claims do not require the user interface to be displayed or to be visible for the user to perform a sequence of interactions because the claims do not cite the method comprising: displaying a user interface or a graphical user interface (GUI) on a display prior to receiving input from a user as part of a conversation between the natural language interface and the user. Therefore , the claims do not require the automation of a sequence of interactions with a user interface that is displayed on the display or a user interface that is visible to the user. The examiner respectfully asserts that the cited prior art sufficiently teaches the limitations recited in the pending claims.

Note: The examiner attempted to reach applicant's representative by phone to discuss the above response.

OK TO ENTER: /M.S/

01/15/2020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

Mail Stop After Final
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Dear Sir:

This is in response to the United States Patent and Trademark Office Communication mailed November 14, 2019 (hereinafter "**Office Action**").

Kindly amend this application as follows.

Amendments to the claims begin on page 2.

Remarks accompanying the amendments begin on page 10.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/358,467	Filing Date 03/19/2019	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	02/11/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 4	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

/DARRYL FORTE/

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16358467	Filing Date	2019-03-19	Docket Number (if applicable)	1179.0130 (583-6.3 NP)	Art Unit	2171
First Named Inventor	Nir Nahum			Examiner Name	Shiberou, Mahelet		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Mark I. Koffsky/	Date (YYYY-MM-DD)	2020-02-11
Name	Mark I. Koffsky	Registration Number	41906

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	16358467
Filing Date:	19-Mar-2019
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Filer:	MARK I KOFFSKY
Attorney Docket Number:	1179.0130 (583-6.3 NP)

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 1ST REQUEST	1801	1	1300	1300
		Total in USD ($)		**1300**

Electronic Acknowledgement Receipt	
EFS ID:	38550541
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	11-FEB-2020
Filing Date:	19-MAR-2019
Time Stamp:	11:47:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1300
RAM confirmation Number	E20202AB47468434
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	RCE.pdf	1349934 360bcf2475cc2594f6c444a96ad6dd5ec835afbc	no	3
Warnings:					
Information:					
2	Amendment/Req. Reconsideration-After Non-Final Reject	OA_Response.pdf	195292 f58fdfd846d639fe76227db0e8980a54a3546b14	no	15
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30548 ae2c7496d3e843068caaea498910183bc44392e9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1575774		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

Mail Stop After Final
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Dear Sir:

This is in response to the Office Communication mailed January 27, 2020 (hereinafter "**Advisory Action**"), issued by the United States Patent and Trademark Office in response to the Response to the Final Office Action, which in turn was filed on December 29, 2019, in response to the Final Office Action dated November 14, 2019 (hereinafter "**Office Action**") issued by the United States Patent and Trademark Office in connection with the above-identified Application.

Kindly amend this application as follows.

Amendments to the claims begin on page 2.

Remarks accompanying the amendments begin on page 8.

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions:

1. (Currently Amended) A method comprising:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

2. (Original) The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. (Original) The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. (Currently Amended) The method of Claim 1, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the displayed user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. (Currently Amended) The method of Claim 1, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the displayed user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. (Original) The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. (Previously presented) The method of Claim 1, wherein the sequence of interactions comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. (Original) The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. (Currently Amended) The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the displayed user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the displayed user interface, wherein said identifying the element

comprises computing a similarity score for each element in the displayed user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. (Canceled)

11. (Original) The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. (Currently Amended) The method of Claim 11, wherein the link comprises a conversation identifier of the conversation between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the displayed user interface is performed using the one or more values of the parameters.

13. (Original) The method of Claim 1, wherein said executing is performed on a client device of the user.

14. (Original) The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15-40. (Canceled)

41. (Currently Amended) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the

conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

42. (Original) The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. (Currently Amended) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the displayed user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. (Currently Amended) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the displayed user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. (Original) The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. (Canceled)

47. (Canceled)

48. (Original) The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49-58. (Canceled)

59. (Previously presented) The method of Claim 1, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first input; and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input.

60. (New) The method of Claim 1, wherein the displayed user interface of the computer program is displayed prior to the conversation between the natural language interface and the user.

61. (New) The method of Claim 1, wherein the displayed user interface of the computer program is presented to the user.

62. (New) The method of Claim 1, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

63. (New) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is displayed prior to the conversation between the natural language interface and the user.

64. (New) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is presented to the user.

65. (New) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

66. (New) A system comprising: a processor and coupled memory, wherein the processor is configured to perform:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback;

determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

67. (New) The system of Claim 66, wherein the displayed user interface of the computer program is displayed prior to the conversation between the natural language interface and the user.

68. (New) The system of Claim 66, wherein the displayed user interface of the computer program is presented to the user.

69. (New) The system of Claim 66, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

REMARKS

Applicant requests reconsideration and allowance of the present application in view of the following remarks.

Claims 1-9, 11-14, 41-45, 48, and 59-69 are pending in the Present Application, and are presented for examination, with Claims 1, 41 and 66 being independent. Claims 1, 4, 5, 9, 12, 41, 43, and 44 have been amended. Claims 60-69 have been added. Claims 10, 15-40, 46-47, 49-58 have been canceled without prejudice. Applicant asserts that no new matter has been introduced by the present amendment.

Applicant is not conceding that the subject matter encompassed by previously presented claims prior to this amendment was not patentable over the art cited by the Examiner. The claims were amended solely to facilitate allowance. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by the claims as presented prior to this amendment and additional claims, in one or more continuing applications.

CLAIM AMENDMENTS

1. Claims 1, 4, 5, 9, 12, 41, 43, and 44 have been amended. Claims 60-69 have been added. No new matter is introduced. Non-limiting examples of support are discussed.

Claim 1 has been amended to recite "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen". Support may be found in the Present Application, *inter alia*, at paragraphs [0086], [0089], [0099], [0112]-[0125], [0132], and [0178].

Claim 41 is amended similarly. New Claim 66 recites a system having features similar to those of Claim 1.

Claims 4-5, 9, 12, 43-44 are amended to be in line with the current language of the independent claims in view of the present amendment.

New Claim 60 recites "wherein the displayed user interface of the computer program is displayed prior to the conversation between the natural language interface and the user". Support may be found in the Present Application, *inter alia*, at paragraph [0132].

New Claim 61 recites "wherein the displayed user interface of the computer program is presented to the user". Support may be found in the Present Application, *inter alia*, at paragraphs [0099], [0102], [0112]-[0125], [0132], and [0178].

New Claim 62 recites "wherein the displayed user interface of the computer program is presented on a screen of a remote server". Support may be found in the Present Application, *inter alia*, at paragraph [0086].

New Claims 63-65, 67-69 are supported in a similar manner.

At least in view of the above, Applicant submits that no new matter is introduced by the present amendment.

CLAIM REJECTIONS – 35 USC § 102

2. Claims 1-4, 7, 13, 14, 41-43, and 59 stand rejected under 35 U.S.C. §102(a)(1) as allegedly being anticipated by White et al. (US 2014/0115456 A1, hereinafter White).

Applicant respectfully traverses theses rejections. Applicant respectfully asserts that the art of record fails to teach or suggest many claimed features. Non-limiting examples are discussed below.

2.1. The cited art does not teach determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program that is configured to be displayed on a screen.

Claim 1 recites "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of

the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface".

Applicant respectfully submits that the cited art does not disclose this feature.

Specifically, White fails to teach an automation process configured to perform an automation of a sequence of interactions with a displayed user interface that is configured to be displayed on a screen.

Conversely, the only interaction with a displayed user interface of White is a conversation flow between the user and client-side software 24, while the rest of the actions described by White are performed at ERP server system 14 and are not displayed on any user interface (e.g., see Fig. 1, 3-11 of White).

The Office Action relies on White at Figure 1 and paragraphs [0019], [0020], [0043], [0054], and [0174]-[0184], for allegedly teaching "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a user interface of a computer program". Paragraphs [0019] and [0020] of White describe a conversation flow between a user of a mobile enterprise application and an ERP system, where based on the user input to the conversation flow, parameters are determined so that enterprise data could be created or viewed. Paragraphs [0043] and [0054] of White describe an ERP system including computing objects that can be edited or retrieved. Paragraphs [0174]-[0184] of White describe populating a form with parameters from the conversation flow until all form fields are populated and submitting the populated form to the server for completing an enterprise operation. For example, if the user wants to create a note object, the virtual assistant 34, which is part of server-side software 30, retrieves required parameters for a form of a note object, and prompts the user to input the required parameters to populate the form, which is then sent to the server (see paragraph [0064] of White).

These descriptions of White are directed to populating a form without displaying the form on a user interface screen. Specifically, as clearly illustrated by Fig. 3-11 of White, the form is not displayed on any user interface (the only user interface that is shown only displays the conversation flow), and thus the form cannot be populated via any sequence of interactions with the displayed user interface of the computer program.

However, and for the avoidance of doubt, Applicant has enhanced the language of the claim to explicitly recite that the user interface is configured to be displayed on a screen. Such recitation further clarifies that White's form population process cannot be read on the claimed automation process at least since White's form is not populated via any sequence of interactions with the displayed user interface of the computer program that is configured to be displayed on a screen.

It is further noted that the recited displayed user interface of the computer program cannot be interpreted as the administrator interface 40 of White, at least since White fails to relate to any automation of a sequence of interactions with the administrator interface 40 that is displayed on a screen. Specifically, the administrator interface 40 is only mentioned once in paragraph [0056] of White, which describes that administrator interface 40 enables an administrator to configure the server-side software 30 and various databases 26 to meet the needs of a given implementation.

As a result, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface", as is now explicitly claimed.

2.2. The cited art does not teach executing the automation process, that is determined based on the first and second inputs, by utilizing the displayed user interface to perform the sequence of interactions

Claim 1 recites "executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions".

Applicant respectfully submits that the cited art does not disclose this feature.

Specifically, White fails to teach executing the automation process including the sequence of interactions, that is determined based on the first and second inputs, utilizing the displayed user interface.

The Office Action relies on White at paragraphs [0045], [0046], [0054], [0055], [0061], [0068], and [0174]-[0184], for allegedly teaching "executing the automation process, wherein said executing comprises utilizing the user interface of the computer program to perform the sequence of interactions". Paragraphs [0045] and [0046] of White describe that computing objects in database 28 can include a note, appointment, opportunity, task or a customer interaction. Paragraphs [0054] and [0055] of White describe different types of enterprise operations, and paragraphs [0061] and [0068] of White describe virtual assistant 34, which is part of server-side software 30, enabling user selection and creation of database objects 28.

These descriptions of White with respect to retrieving or creating database objects 28 are performed at the server-side, where no user interface is displayed, and thus are not an automation process performed by utilizing the displayed user interface. Specifically, as described above, the only interaction with a displayed user interface of White is a conversation flow between the user and client-side software 24, while the rest of the actions described by White are not displayed on the user interface (e.g., see Fig. 1, 3-11 of White). Additionally, as discussed above, the administrator interface 40 of White cannot be interpreted as that the recited displayed user interface of the computer program.

The Office Action also referred to paragraphs [0174]-[0184] of White, which describe populating a form until all form fields are populated and submitting the populated form to the server. However, populating the form of White is not performed by any interaction with the displayed user interface. Conversely, as clearly illustrated by Fig. 3-11 of White, the form is not displayed on the user interface (the user interface only displays the conversation flow), and thus the form cannot be populated via any sequence of interactions with the displayed user interface of the computer program.

As a result, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions", as is now explicitly claimed.

The same arguments are valid, *mutatis mutandis*, also in regards to current Claims 41 and 66.

Furthermore, it is respectfully submitted that independent Claims 1, 41, and 66 are patentable, and thus allowable, over any combination of the prior art references on record. In this regard, it is noted that the distinguishing features of independent Claims 1, 41, and 66 as discussed above, would not have been obvious at the time the invention was made to a person skilled in the art, in view of White, alone or in combination with any of the other cited references on record, including the References of Corbett, Takechi, and Cronin, as discussed below.

At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 102.

CLAIM REJECTIONS – 35 USC § 103

3. Claims 5, 9, 11-12, 44, and 48 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over White in view of Corbett et al. (US 2018/0137178, hereinafter referred to as Corbett).

Claims 6 and 45 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over White, in view of Takechi et al. (US 2003/0058369, hereinafter referred to as Takechi).

Claim 8 stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over White in view of Cronin (US 9,509,799).

Applicant respectfully submits that Corbett, Takechi and Cronin, alone or in combination, fail to remedy the deficiencies of White in disclosing the claimed features of Claims 1 or 41. Applicant submits that even a combination of such references does not teach or suggest all claimed features of independent Claims 1, 41, and 66. As Claims 5, 6, 8, 9, 11-12, 44, 45, and 48 depend from Claims 1 or 41, Applicant submits that they are allowable over the cited art for at least the reason of such dependence.

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At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 103.

NEW CLAIMS

4. Claims 60-69 are new. Applicant respectfully submits that independent Claim 66 is allowable, at least since Claim 66 recites a system having features similar to those of Claim 1, which is allowable by itself. Applicant respectfully submits that Claims 60-65 and 67-69 are patentable over the cited art at least in view of them depending on Claims 1, 41, and 66, which are allowable by themselves.

Moreover, the new Claims 60-65 and 67-69 are patentable also because the art of record fails to teach or suggest that the displayed user interface is displayed prior to the conversation between the natural language interface and the user, that the displayed user interface is presented to the user, and that the displayed user interface is presented on a screen of a remote server.

CONCLUSION

Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these amendments and remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

If for any reason the Examiner feels that consultation with Applicant would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below and set an interview.

Respectfully submitted,

Dated: February 11, 2020

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

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EXAMINER	
SHIBEROU, MAHELET	

ART UNIT	PAPER NUMBER
2171	

NOTIFICATION DATE	DELIVERY MODE
03/30/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

-- 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 MONTHS 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 2/11/2020.

☐ 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) 1-9,11-14,41-45,48 and 59-69 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) 1-9,11-14,41-45,48 and 59-69 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.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. This action is responsive to the Request for Continued Examination (RCE) filed on 2/11/2020. Claims 1-9, 11-14, 41-45, 48, and 59-69 are pending in the case. Claims 60-69 have been added. Claims 1, 41, and 66 are independent claims.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, 7, 13-14, 41-43, and 59-69** are rejected under 35 U.S.C. 103 as being unpatentable over Owen et al. (US 2018/0349556 A1, hereinafter Owen) in view of Gallopyn et al. (US 2014/0249830 A1, hereinafter Gallopyn).

As to independent **claim 1**, Owen teaches a method comprising:

using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user ("a user may provide input to provide, indicate and/or confirm content for the electronic document using speech, either via an interface element displayed on the device (e.g., a microphone icon) or via a speech enabled interface element that allows the user to initiate speech input via a voice trigger. For example, to populate variable field 620a, the user may speak "Florence, Lachman is 1+" when variable field 620a is active to engage the system with the voice trigger "Florence" and to provide the speech input "Lachman is 1+" to instruct the system as to the content to be used to complete variable field 620a." Paragraph 0083, 0054);

determining, based on the input from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen (see Fig. 6A smart medical document 600 displayed on a screen, see paragraph 0071 "The system may analyze the voice input and understand from the context of the variable field that the user is indicating that the Lachman test for the patient was given a grading of 1+ (e.g., using one or more natural languages processes", see paragraph 0048-0049 where a sequence of interactions with a displayed document 600 is received, ""For example, the active field may initially be the first variable field in the electronic document. The next variable field in the electronic document may become active when the user provides input to complete the

currently active field. A variable field may become active in other ways, such as the user selecting one of the variable fields via the user interface. The active field may be highlighted or other emphasized to show which is the active field to which user input will be directed")

wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface ("in response, populate variable field 620a accordingly." Paragraph 0083,0024) or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions ("in response, populate variable field 620a accordingly." Paragraph 0083,0078-0079; "A smart medical document may be configured to receive input from the medical professional to fill in, complete or otherwise populate the variable fields in the document and/or confirm the content of one or more variable fields presented to the medical professional." 0027).

Owen does not appear to expressly teach wherein the conversation comprises a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback.

Gallopyn teaches wherein the conversation comprises a feedback on the first input from the natural language interface (See Fig.4A -Fig.4B A given virtual medical assistant may choose to present any set of possible tasks that the virtual medical assistant can help with,, paragraph 0110), and a second input from the user in response to the feedback; determining, based on the first input and the second input from the user, an automation process configured to perform an automation of a

sequence of interactions (“FIG. 4C illustrates the results of the medical professional requesting that the virtual medical assistant "show my patient list.… FIG. 4D illustrates the result of the virtual medical assistant responding to the medical professional selecting a patient from the patient list, via touch capabilities of the display… It should be appreciated that the medical professional could have provided this instruction using other input mechanism such as, for example, by providing free-form instruction by saying "show me [patient name's] chart," Paragraph 0111).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise wherein the conversation comprises a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback, determining, based on the first input and the second input from the user, an automation process configured to perform an automation of a sequence of interactions. One would have been motivated to make such a combination to make the user familiar with functionality provided by the virtual assistance so that the user utilize virtual assistant functionality appropriately.

As to dependent **claim 2,** Owen teaches the method of claim 1. Owen further teaches wherein the natural language interface is a chat bot service operable to converse with the user in natural language (The term "voice trigger" refers to any spoken word or phrase that engages a speech enabled device or system to acquire and recognize speech input. Familiar examples of voice triggers include "Ski," "Alexa,"

"Hello, Dragon," and the like that engage their respective devices to process subsequent speech input." Paragraph0054).

As to dependent **claim 3**, Owen teaches the method of claim 2. Owen further teaches wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter ("Smart medical document 600 may further comprise a plurality of interface elements 630 (e.g., 630a, 630b and 630c in FIG. 6A) that can be used to present selectable options for each respective variable field 620.." Paragraph 0074).

As to dependent **claim 4**, Owen teaches the method of claim 1. Owen further teaches wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the displayed user interface comprises inputting data received by the natural language interface to the one or more input fields ("The term "variable field" refers herein to any type of construct to which content may be inserted and/or any type of placeholder indicating where content is to be inserted, including a field to which content may be inserted," paragraph 0024, 0027).

As to dependent **claim 7**, Owen teaches the method of claim 1. Owen further teaches wherein the sequence of interactions comprises a sequence of steps, wherein each step is selected from a group consisting of: a page redirect step; a click element step; a hovering over element step; a set focus to element step; a select value from list

step; a fill input field with value step (Owen paragraph 0024, filling variable field with value); a prompt user step; a time-wait step; and a condition-wait step (Fig. 1-13, paragraph 0177, 0075 Table 1). Gallopyn further teaches a click element step (Fig. 4C-4D “providing free-form instruction by saying "show me [patient name's] chart," Paragraph 0111).

As to dependent **claim 13**, Owen teaches the method of claim 1. Owen further teaches, wherein said executing is performed on a client device of the user (Fig. 1 device 110).

As to dependent **claim 14,** Owen teaches the method of claim 1. Owen further teaches, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user (“smart medical document 600 also presents icons 660 and 670 that allow the user to input content into an active field via speech”, Paragraph 0074 last sentence).

As to dependent **claim 59**, Owen teaches the method of Claim 1. Owen does not appear to expressly teach, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first input; and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input.

Gallopyn teaches selecting the sequence of interactions from a plurality of sequences based on the first input (Fig. 4A-Fig. 4B, the exemplary tasks presented to the medical professional are illustrated in FIG. 4B paragraph 0110); and

determining a parameter to be used in an interaction of the sequence of interactions based on the second input ("the medical understanding resource 120 may include NLU/CLU component 140 configured to process free-form instruction to identify one or more medical tasks specified in the free-form instruction and may also identify one or more parameters associated with the one or more medical tasks." Paragraph0042).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise wherein said determining the automation process comprises: selecting the sequence of interactions from a plurality of sequences based on the first input; and determining a parameter to be used in an interaction of the sequence of interactions based on the second input. One would have been motivated to make such a combination to make the user familiar with functionality provided by the virtual assistance so that the user utilize virtual assistant functionality.

As to dependent **claim 60**, Owen teaches the method of Claim 1, Owen further teaches wherein the displayed user interface of the computer program is displayed prior to the conversation between the natural language interface and the user (Fig. 6A document 600 displayed prior to the user provide a voice input).

As to dependent **claim 61**, Owen teaches the method of Claim 1, Owen further teaches wherein the displayed user interface of the computer program is presented to the user (For example, in Fig. 6A user interface 600 presented to the user).

As to dependent **claim 62**, Owen teaches the method of Claim 1, Owen further teaches wherein the displayed user interface of the computer program is presented on a screen of a remote server ("a smart medical document is displayed on

a host device, such as a mobile device (e.g., a cellular telephone, tablet, notepad, personal digital assistant, etc.), laptop computer, desktop computer, or any other suitable device. The smart medical document may be generated by the host device or by an external device connected to the host device." Paragraph 0025)

Claims 41-43, 63-65 reflect a non-transitory computer readable medium embodying the limitations of claim 1 and 3-4 and 60-62 therefore the claims are rejected under similar rationale.

Claims 66-69 reflect a system embodying the limitations of claims 1 and 60-62, therefore the claims are rejected under similar rationale.

4. **Claims 5, 9, 11-12, 44 and 48** are rejected under 35 U.S.C. 103 as being unpatentable over Owen et al. in view of Gallopyn et al., and Corbett et al. (US 2018/0137178 A1, hereinafter Corbett).

As to dependent **claim 5**, Owen teaches the method of claim 1. Owen does not appear to teach wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the displayed user interface comprises performing interface interaction with the one or more interactable GUI elements.

Corbett teaches wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements (paragraph 0033 and 0047).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise wherein the user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the user interface comprises performing interface interaction with the one or more interactable GUI elements. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

As to dependent **claim 9**, Owen teaches the method of claim 1. Owen does not appear to teach however, Corbett teaches, wherein the automation process defines an operation to be performed with respect to an element in the user interface,

wherein the automation process identifies the element based on a plurality of parameters of the element; wherein said executing the automation process comprises

identifying the element in the displayed user interface (paragraph 0027,0047 the single user input identifies the element),

wherein said identifying the element comprises computing a similarity score for each element in the displayed user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold (paragraph 0029-0030 identify the high similarity score which is above a predetermined threshold).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise the limitations taught by Corbett. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

As to dependent **claim 11**, Owen teaches the method of claim 1. Owen does not appear to teach however, Corbett teaches the method comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user (paragraph 0030 a query string provided). Corbett does not specify that the link is configured to cause said executing upon clicking thereon, a person of ordinary skill in the art would recognize that the only purpose is for confirming the command before execution.

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Corbett to comprise such that wherein the link is configured to cause said executing upon

clicking thereon. One would have been motivated to make such a combination to allow the user confirm the command.

As to dependent **claim 12**, Owen teaches the method of claim 11. Owen does not appear to teach however, Corbett teaches wherein the link comprises a conversation identifier of the conversation ~~b~~etween the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the displayed user interface is performed using the one or more values of the parameters (paragraph 0031 the query string indicate attributes to be searched based on the received command).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise the limitations taught by Corbett. One would have been motivated to make such a combination to allow a user input commands conveniently and easily.

Claims 44 and 48 reflect non-transitory computer readable medium embodying the limitations of claims 5 and 11; therefore the claims are rejected under similar rationale.

5. **Claims 6 and 45 are** rejected under 35 U.S.C. 103 as being unpatentable over Owen et al. in view of Gallopyn et al., and Takechi e t al. (US 20030058369 A1, hereinafter Takechi).

As to dependent **claim 6**, Owen teaches the method of claim 1. Owen does not appear to expressly teach, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

Takechi teaches wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program ("the setting is performed without the use of the API setting." paragraph 0106).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program. One would have been motivated to make such a combination to enable non-programmers define the automations that are invoked by the chat bots.

Claim 45 reflects a non-transitory computer readable medium embodying the limitations of claim 6; therefore the claim is rejected under similar rationale.

6. **Claim 8** is rejected under 35 U.S.C. 103 as being unpatentable over Owen et al. in view of Gallopyn et al., and Cronin (US 9509799 B1).

As to dependent **claim 8**, Owen teaches the method of claim 1. Owen does not appear to expressly teach wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

Cronin teaches selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein (Fig. 2 display setting screen for defining automation processes).

Accordingly, it would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify the method of Owen to comprise wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein. One would have been motivated to make such a combination to allow the user to customize the automation process by utilizing user-selectable options or commands.

Response to Arguments

7. Applicant's arguments with respect to claim 1 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHELET SHIBEROU whose telephone number is (571)270-7493. The examiner can normally be reached on Monday-Friday 9:00 AM-5:00 PM Eastern Time.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abdullah Al Kawsar can be reached on 571-270-3169. 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.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Notice of References Cited	Application/Control No. 16/358,467	Applicant(s)/Patent Under Reexamination NAHUM et al.	
	Examiner MAHELET SHIBEROU	Art Unit 2171	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180349556-A1	12-2018	Owen; Donald Eugene	G06F40/174	1/1
*	B	US-20140249830-A1	09-2014	Gallopyn; Guido	G06F19/00	705/2
	C					
	D					
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	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	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.

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	MAHELET SHIBEROU	2171

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/31/2019	07/18/2019	11/07/2019	03/25/2020					
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	6	÷	✓	✓	✓					
	7	÷	✓	✓	✓					
	8	÷	✓	✓	✓					
	9	÷	✓	✓	✓					
	10	-	-	-	-					
	11	÷	✓	✓	✓					
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	42	÷	✓	✓	✓					

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CLAIM		DATE								
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	67				✓					
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	69				✓					

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	Examiner	Art Unit
	MAHELET SHIBEROU	2171

CPC - Searched*		
Symbol	**Date**	**Examiner**
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	7/19/2019	MS
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	11/07/2019	MS
G06F3/0482, G06F3/16, G06F40/10, G06F3/16, G06F3/167	03/24/2020	MS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
East Search	7/19/2019	MS
Inventor name search	7/19/2019	MS
CPC with limited text search	7/19/2019	MS
East Sarch	11/07/2019	MS
CPC with limited text search	11/07/2019	MS
Text search	11/07/2019	MS
Inventor name search	03/24/2020	MS
East Search	03/24/2020	MS
CPC with limited text search	03/24/2020	MS

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

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	Examiner	Art Unit
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Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	(Nahum near3 Nir).inv.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:29
L2	1	(Sasson near3 Shlomi).inv.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:30
L3	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:38
L4	13	("20160171119" | "20150339942" | "20020194164" | "8024660" | "20110185288" | "20140310596" | "20120317481" | "20140068498" | "8984441" | "20120022951" | "20150310488" | "20070300174" | "20080313149").PN.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:50
L6	8622	(voice or vocal or speech or speaker or natural adj language or chat near bot) near6 (interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application)	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:52
L7	7681	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 (voice or vocal or speech or speaker or natural adj language or chat near bot)	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:54
L10	6969	L7 and @ad<"20171105"	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:56
L11	659	L10 and (G06F3/0482, G06F3/16, G06F40/10, G06F3/16, G06F3/167).CPC.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:57
L15	62	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 ((chat adj bot) or (virtual adj agent) or (virtual adj assistance))	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:59
L16	76	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 ((chat adj bot) or (virtual adj agent) or (virtual adj assistance))	US-PGPUB; USPAT	OR	ON	2020/03/24 11:59
L17	5	("20100138239" | "20120084096" | "20140013199" | "20140324477" | "6826727").PN.	US-PGPUB; USPAT	OR	OFF	2020/03/24 12:05
L18	75	(natural near3 language or chat near bot) near4 (interact$4 or manipulat$3 or navigat$3 or fill$3 or complet$3) near4 (document)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:05
L28	1391	(natural near language or (chat adj bot) or (virtual adj agent) or (virtual adj assistance) or smart adj speaker or voice or vocal or speech) with (smart near4 (document or application))	US-PGPUB; USPAT	OR	ON	2020/03/24 12:15

L29	66358	(smart near4 (document or application))	US-PGPUB; USPAT	OR	ON	2020/03/24 12:15
L30	313	(smart near4 (document or application)) with (voice or vocal or speech) with (input or command)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:15
L31	54	(smart near4 (document or application)) with (voice or vocal or speech) with (input or command) with (navigat$4 or manipulat$3 or fill$3 or hover$3 or click$3 or select$4 or scroll$3 or flip$3 or highlight$3)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:17
L32	7	("20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:18
L33	13	("20010032244" | "8335825" | "20120072440" | "7305350" | "8271509" | "20130332537" | "20120036245" | "20120036245" | "7263526" | "20030037110" | "20090234926" | "8335495" | "20010054064" | "20100076837" | "20010032244" | "20090234926" | "7305350" | "8271509" | "8335495").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:18
L34	7	("20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:20
L35	10	("20120150922" | "20100125456" | "20130110519" | "6952665" | "20130198360" | "20110035452" | "20120271640" | "7103553" | "20090248587" | "10042836").PN.	US-PGPUB; USPAT	OR	OFF	2020/03/24 12:20

3/24/2020 12:20:59 PM
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USPTO Automated Interview Request (AIR)

May 21 2020

This paper requesting to schedule and/or conduct an interview is appropriate because:

This submission is requested to be accepted as an authorization for this interview to communicate via the internet. Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned concerning scheduling of the interview via video conference, instant messaging, or electronic mail, and to conduct the interview in accordance with office practice including video conferencing.

Name(s):
Mark I. Koffsky

S-signature:
/Mark I Koffsky/

Registration Number:
41906

U.S. Application Number:
16358467

Confirmation Number:
1560

E-mail Address:
mkoffsky@koffskyschwalb.com

Phone Number:
+1 5165106163

Proposed Time of Interview:
5-27-2020 11:00 AM ET

Alternative Proposed Time(s) of Interview:
5-28-2020 10:00 AM ET

Alternative Proposed Time(s) of Interview:
6-2-2020 10:00 AM ET

Prefered Interview Type:
Telephonic

I am the applicant or applicant's representative for this application.

Topic for Discussion:
Office action of March 30, 2020

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 06/09/2020

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

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SHIBEROU, MAHELET	

ART UNIT	PAPER NUMBER
2171	

NOTIFICATION DATE	DELIVERY MODE
06/09/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficeaction@appcoll.com
mikuspto@gmail.com
patent@koffskyschwalb.com

PTOL-90A (Rev. 04/07)

Applicant-Initiated Interview Summary	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

All participants (applicant, applicants representative, PTO personnel):

(1) MAHELET SHIBEROU.

(2) Mark Koffsky, Reg. No. 41906.

(3) Applicant's Representative.

(4) Applicant's Representative.

Date of Interview: 04 June 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☑103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: Owen and Gallopyy.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's Representatives and the Examiner discussed the rejection of Claim 1 in view of Owen and Gallopyn and the differences between the claimed invention and particularly with Owen reference. Possible clarifying language and/or amendments to claim 1 were suggested and discussed, The examiner indicated that a further search and consideration based on the amendments and applicant's arguments is required. No agreement with allowability was reached..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/358,467	Filing Date 03/19/2019	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	06/11/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 34	Minus	** 30	= 4		x $100 =	400
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	400

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/ANGELA S WHITE/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	16358467
Filing Date:	19-Mar-2019
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Filer:	MARK I KOFFSKY
Attorney Docket Number:	1179.0130 (583-6.3 NP)

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	4	100	400
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**400**

Electronic Acknowledgement Receipt	
EFS ID:	39690171
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	11-JUN-2020
Filing Date:	19-MAR-2019
Time Stamp:	11:44:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$400
RAM confirmation Number	E20206AB44547433
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Amend.pdf	203367 0c1be7acdcf3d0aa7d1d0ec168e0af93f2bbf243	no	16
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30596 e6b82e93c2d66a1ba5dd3f91f8cd94b74ecdc146	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	233963		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Nir Nahum
Serial No.:	16/358,467
For:	CHAT-BASED APPLICATION INTERFACE FOR AUTOMATION
Filed:	March 19, 2019
Examiner:	Shiberou, Mahelet
Art Unit:	2171
Confirmation No.:	1560

Attorney Docket No.: 1179.0130 (583-6.3 NP)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Dear Sir:

This is in response to the United States Patent and Trademark Office Communication mailed March 30, 2020 (hereinafter "**Office Action**").

Kindly amend this application as follows.

Amendments to the claims begin on page 2.

Remarks accompanying the amendments begin on page 9.

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions:

1. (Currently Amended) A method comprising:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback;

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

2. (Original) The method of Claim 1, wherein the natural language interface is a chat bot service operable to converse with the user in natural language.

3. (Original) The method of Claim 2, wherein the automation process is a parameterized automation process having a parameter, wherein the chat bot service is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

4. (Previously Presented) The method of Claim 1, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the displayed user interface comprises inputting data received by the natural language interface to the one or more input fields.

5. (Previously Presented) The method of Claim 1, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the displayed user interface comprises performing interface interaction with the one or more interactable GUI elements.

6. (Original) The method of Claim 1, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

7. (Previously presented) The method of Claim 1, wherein the sequence of interactions comprises a sequence of steps, wherein each step is selected from a group consisting of:

a page redirect step;
a click element step;
a hovering over element step;
a set focus to element step;
a select value from list step;
a fill input field with value step;
a prompt user step;
a time-wait step; and
a condition-wait step.

8. (Original) The method of Claim 1, wherein said determining comprises selecting the automation process from a database retaining a plurality of user-defined automation processes; wherein the database is updatable by one or more users via a Graphical User Interface (GUI) capable of defining new automation processes and updating existing automation processes retained therein.

9. (Previously Presented) The method of Claim 1,

wherein the automation process defines an operation to be performed with respect to an element in the displayed user interface, wherein the automation process identifies the element based on a plurality of parameters of the element;

wherein said executing the automation process comprises identifying the element in the displayed user interface, wherein said identifying the element

comprises computing a similarity score for each element in the displayed user interface using the plurality of parameters of the element, and selecting a selected element having a highest similarity score, wherein the highest similarity score is at least above a predetermined threshold.

10. (Canceled)

11. (Original) The method of Claim 1 further comprises: generating a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

12. (Currently Amended) The method of Claim 11, wherein the link comprises a conversation identifier of the natural language conversation between the user and the natural language interface, wherein the natural language interface is configured to store one or more values of parameters obtained from the user during the natural language conversation in a database in a manner associated with the conversation identifier, wherein said executing comprises retrieving, using the conversation identifier passed by the link, the one or more values of parameters from the database, wherein said utilizing the displayed user interface is performed using the one or more values of the parameters.

13. (Original) The method of Claim 1, wherein said executing is performed on a client device of the user.

14. (Original) The method of Claim 1, wherein the natural language interface is a voice-based service, wherein the voice-based service is configured to receive vocal commands from a human user.

15-40. (Canceled)

41. (Currently Amended) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the

user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback;

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

42. (Original) The non-transitory computer readable medium of Claim 41, wherein the automation process is a parameterized automation process having a parameter, wherein the natural language interface is configured to prompt the user to provide a value for the parameter, wherein said executing comprises utilizing the value of the parameter.

43. (Previously Presented) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more input fields, wherein said utilizing the displayed user interface comprises inputting data received by the natural language interface to the one or more input fields.

44. (Previously Presented) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface is a Graphical User Interface (GUI) comprising one or more interactable GUI elements, wherein said utilizing the displayed user interface comprises performing interface interaction with the one or more interactable GUI elements.

45. (Original) The non-transitory computer readable medium of Claim 41, wherein said executing is performed without utilizing an Application Programming Interface (API) of the computer program.

46. (Canceled)

47. (Canceled)

48. (Original) The non-transitory computer readable medium of Claim 41, wherein the program instructions further cause the processor to generate a link, wherein the link is configured to cause said executing upon clicking thereon, wherein the natural language interface provides the link to the user.

49-58. (Canceled)

59. (Currently Amended) The method of Claim 1, wherein said determining the automation process comprises:

selecting the sequence of interactions from a plurality of sequences based on the first natural language input; and

determining a parameter to be used in an interaction of the sequence of interactions based on the second natural language input.

60. (Currently Amended) The method of Claim 1, wherein the displayed user interface of the computer program is displayed prior to the natural language conversation between the natural language interface and the user.

61. (Previously Presented) The method of Claim 1, wherein the displayed user interface of the computer program is presented to the user.

62. (Previously Presented) The method of Claim 1, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

63. (Currently Amended) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is displayed prior to

the natural language conversation between the natural language interface and the user.

64. (Previously Presented) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is presented to the user.

65. (Previously Presented) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

66. (Currently Amended) A system comprising: a processor and coupled memory, wherein the processor is configured to perform:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback;

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

67. (Currently Amended) The system of Claim 66, wherein the displayed user interface of the computer program is displayed prior to the natural language conversation between the natural language interface and the user.

68. (Previously Presented) The system of Claim 66, wherein the displayed user interface of the computer program is presented to the user.

69. (Previously Presented) The system of Claim 66, wherein the displayed user interface of the computer program is presented on a screen of a remote server.

70. (New) The system of Claim 66, wherein the displayed user interface of the computer program is a user interface of a web browser, wherein said executing the automation process comprises activating the web browser to cause the displayed user interface to be displayed, wherein the sequence of interactions is performed with respect to the user interface of the web browser.

71. (New) The non-transitory computer readable medium of Claim 41, wherein the displayed user interface of the computer program is a user interface of a web browser, wherein said executing the automation process comprises activating the web browser to cause the displayed user interface to be displayed, wherein the sequence of interactions is performed with respect to the user interface of the web browser.

72. (New) The method of Claim 1, wherein the displayed user interface of the computer program is a user interface of a web browser, wherein said executing the automation process comprises activating the web browser to cause the displayed user interface to be displayed, wherein the sequence of interactions is performed with respect to the user interface of the web browser.

73. (New) The method of Claim 1, wherein the automation process is configured to imitate user interactions with the displayed user interface of the computer program.

REMARKS

Applicant requests reconsideration and allowance of the present application in view of the following remarks.

Claims 1-9, 11-14, 41-45, 48, and 59-73 are pending in the Present Application, and are presented for examination, with Claims 1, 41 and 66 being independent. Claims 1, 12, 41, 59, 60, 63, 66, and 67 have been amended. Claims 70-73 have been added. Applicant asserts that no new matter has been introduced by the present amendment.

Applicant is not conceding that the subject matter encompassed by previously presented claims prior to this amendment was not patentable over the art cited by the Examiner. The claims were amended solely to facilitate allowance. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by the claims as presented prior to this amendment and additional claims, in one or more continuing applications.

CLAIM AMENDMENTS

1. Claims 1, 12, 41, 59, 60, 63, 66, and 67 have been amended. Claims 70-73 have been added. No new matter is introduced. Non-limiting examples of support are discussed.

Claim 1 has been amended to recite that the conversation is a "natural language conversation" including "a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback". Support may be found in the Present Application, *inter alia*, at paragraphs [0073], [0100], [0139], [0146], [0154], and Figures 7A-7B.

Claims 41 and 66 are amended similarly.

New Claim 70 recites "wherein the displayed user interface of the computer program is a user interface of a web browser, wherein said executing the automation process comprises activating the web browser to cause the displayed user interface to be displayed, wherein the sequence of interactions is performed with respect to the user

interface of the web browser". Support may be found in the Present Application, *inter alia*, at paragraphs [0075], [0083]-[0084], [0103]-[0105].

New Claims 71 and 72 are supported in a similar manner.

New Claim 73 recites "wherein the automation process is configured to imitate user interactions with the displayed user interface of the computer program". Support may be found in the Present Application, *inter alia*, at paragraph [0079].

At least in view of the above, Applicant submits that no new matter is introduced by the present amendment.

INTERVIEW SUMMARY

2. Applicant thanks Examiner for the courtesy of the Telephone Interview with Applicant's representative on June 4, 2020, during which the rejection of the independent claims 1, 41, and 66 under 35 U.S.C. §103 was discussed.

The Examiner agreed that the amended independent claims, in their current amended form, overcome the art of record, subject to further search.

CLAIM REJECTIONS – 35 USC § 103

3. Claims 1-4, 7, 13-14, 41-43, and 59-69 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Owen (US 20180349556A1), in view of Galoopyn et al. (US 20140249830A1, hereinafter referred to as Galoopyn).

Claims 5, 9, 11-12, 44, and 48 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Owen in view of Galoopyn and Corbett et al. (US 2018/0137178, hereinafter referred to as Corbett).

Claims 6 and 45 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Owen in view of Galoopyn and Takechi et al. (US 2003/0058369, hereinafter referred to as Takechi).

Claim 8 stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over Owen in view of Galoopyn and Cronin (US 9,509,799).

Whatfix Inc. Exhibit 1002 Page 360

Applicant respectfully traverses these rejections. However, in order to facilitate expeditious prosecution, Applicant has enhanced the claim language. Applicant respectfully asserts that the art of record fails to teach or suggest many claimed features, before and after the amendment. Non-limiting examples are discussed below.

3.1. The cited art, alone or in combination, fails to teach or suggest receiving input from a user as part of a natural language conversation between the natural language interface and the user … and determining an automation process based thereon

Current Claim 1 recites "using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback; determining, based on the first and second natural language inputs from the user, an automation process".

Applicant respectfully submits that the cited art does not teach or suggest this feature.

The Office Action contended that Owen allegedly teaches the feature of original Claim 1 "using a natural language interface, receiving input from a user as part of a conversation between the natural language interface and the user" (Page 3 of the Office Action).

Applicant respectfully traverses this contention, and asserts that Owen fails to teach or suggest the original features of receiving input from a user as part of a conversation between the natural language interface and the user, wherein the conversation comprises a first input from the user, a feedback on the first input from the natural language interface, and a second input from the user in response to the feedback.

Specifically, Owen fails to teach or suggest any conversation between the natural language interface and the user.

Conversely, Owen relates to a system for populating fields of medical documents which is fundamentally different from a conversation. Specifically, in the portions of

Owen cited by the Office Action, Owen describes that a user can indicate or confirm content for the electronic document using speech, either via an interface element displayed on the device or via a speech enabled interface that allows the user to initiate speech input via a voice trigger (paragraph [0083]). As explained in more detail in paragraph [0054], a voice trigger is a keyword or phrase that indicates that subsequent speech is intended. For example, "Hello Dragon" can be defined as a voice trigger that cause the device to process subsequent speech of the user.

These descriptions with respect to activating the speech enabled interface in order to populate fields of a document is fundamentally different from a conversation between the natural language interface and the user.

Accordingly, Owen fails to relate to any conversation and therefore fails to teach or suggest any automation process that is determined based on inputs from the conversation.

Galoopyn cannot cure this deficiency.

Specifically, Galoopyn fails to teach or suggest any automation process that is determined based on a conversation.

During the telephone interview of June 4, 2020, the Examiner indicated that adding the phrase "natural language" to the user inputs and to the feedback of the conversation would overcome the cited art. Accordingly, Applicant has enhanced the language of the claim to explicitly recite that the recited conversation is a "natural language" conversation that includes natural language inputs and feedbacks. Such recitation further clarifies that Owen's populating of documents cannot be read on the recited conversation.

As a result, and in view of the Examiner's agreement, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback", as is now explicitly claimed.

3.2. The cited art, alone or in combination, does not teach or suggest determining an automation process based on the first and second natural language inputs from the user

Current Claim 1 recites "determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program".

Applicant respectfully submits that the cited art does not teach or suggest this feature.

Specifically, the combination of Owen and Galoopyn fails to teach determining an automation process that is configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program.

More specifically, the combination of Owen and Galoopyn fails to teach any automation of a sequence of interactions that is determined based on both the first and second natural language inputs from the user.

Conversely, both references relate to a single action such as presenting information to a user, that is performed based on at most one user input, in contrary to the recited feature of determining an automation process that is configured to perform an automation of a sequence of interactions, based on the first and second inputs from the user.

The Office Action contended that Owen allegedly teaches the original feature of Claim 1 “determining, based on the first and second inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises inputting data to the displayed user interface or executing a functionality of the displayed user interface” (Page 3 of the Office Action).

Conversely, in the portions of Owen cited by the Office Action, Owen describes that a variable field of a medical document is made active to facilitate completion of the variable field. The field is made active when a previous field was completed by the user or based on a user selection of a field. When a variable field is active, a plurality of options for filling in the active field are presented to the user to facilitate completion of the

respective variable field. Other information to assist in completing the variable field can also be presented to the user when the respective variable field is made active (paragraphs [0048], [0049]).

Presenting to the user the plurality of options for filling in the active field, as well as presenting any other assisting information, cannot be interpreted as the recited automation process, at least since:

- The options for filling in the active field, as well as the information for assisting with filling in the field, are not determined to be presented based on both the first and second inputs from the user. Specifically, if the field became active due to the user completing the previous field, then the information that is presented is determined to be presented based on a single input (the previous field's input). Alternatively, if the field became active due to the user's selection of the field, then the information that is presented for the field is determined to be presented based on a single input – the user selection. There is no scenario in which Owen presents the information based on more than one input.
- The options for filling in the active field, as well as the information for assisting with filling in the field, are not described by Owen as a sequence of interactions with a displayed user interface of a computer program. Owen does not indicate in any way that this information is provided in a sequential manner.
- The options for filling in the active field, as well as the information for assisting with filling in the field, are predetermined for each field, teaching away from determining them, based on any user input or at all.
- The options for filling in the active field, as well as the information for assisting with filling in the field, are not interactions with a displayed user interface of a computer program, but merely present data.

Galoopyn cannot cure this deficiency.

Specifically, in the portions of Galoopyn cited by the Office Action, Galoopyn merely describes a virtual medical assistant that presents possible tasks to the user (a doctor) such as showing a patients list or showing a chart of a patient.

During the telephone interview of June 4, 2020, and in view of the above argument, the Examiner agreed that the cited art does not teach or suggest this feature.

As a result, and in view of the Examiner's agreement, the cited art, alone or in combination, fails to teach or suggest, let alone disclose "determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program", as is now explicitly claimed**.**

The same arguments are valid, *mutatis mutandis*, also in regard to current Claims 41 and 66.

Claims 2-9, 11-14, 42-45, 48, 59-65, and 67-73 depend from Claims 1, 41, and 66, and are allowable over the cited art for at least the reason of such dependence.

At least in view of the above, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 103.

NEW CLAIMS

4. Claims 70-73 are new. Applicant respectfully submits that Claims 70-73 are patentable over the cited art at least in view of them depending on Claims 1, 41, and 66, which are allowable by themselves.

Moreover, the new Claims 70-73 are patentable also because the art of record fails to teach or suggest that the displayed user interface of the computer program is a user interface of a web browser, wherein said executing the automation process comprises activating the web browser to cause the displayed user interface to be displayed, wherein the sequence of interactions is performed with respect to the user interface of the web browser, and that the automation process is configured to imitate user interactions with the displayed user interface of the computer program.

CONCLUSION

Applicant believes the amendments and remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these amendments and remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

If for any reason the Examiner feels that consultation with Applicant would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below and set an interview.

Respectfully submitted,

Dated: June 11, 2020

/Mark I. Koffsky/
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Whatfix Inc. Exhibit 1002 Page 366

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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NOTICE OF ALLOWANCE AND FEE(S) DUE

106928 7590 09/09/2020

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

EXAMINER	
SHIBEROU, MAHELET	
ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 09/09/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

TITLE OF INVENTION: Chat-Based Application Interface for Automation

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	12/09/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 02/11)

Whatfix Inc. Exhibit 1002 Page 367

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

106928 7590 09/09/2020
Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

TITLE OF INVENTION: Chat-Based Application Interface for Automation

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	12/09/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHIBEROU, MAHELET	2171	715-753000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	03/19/2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

106928 7590 09/09/2020

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Suite 733
New York, NY 10016

EXAMINER	
SHIBEROU, MAHELET	
ART UNIT	**PAPER NUMBER**
2171	

DATE MAILED: 09/09/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Whatfix Inc. Exhibit 1002 Page 369

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	**Application No.** 16/358,467	**Applicant(s)** NAHUM et al.	
	Examiner MAHELET SHIBEROU	**Art Unit** 2171	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the Amendment filed on 6/11/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ 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.

3. ☑ The allowed claim(s) is/are See Continuation Sheet . As a result of the allowed claim(s), 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.**

4. ☐ 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)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. 9/2/2020.
5. ☑ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Continuation of 3. The allowed claim(s) is/are: 1-9,11-14,41-45,48 and 59-72

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

2. Claims 1-9, 11-14, 41-45, 48 and 59-72 are allowed.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Mr. Mark Koffsky, Registration No. 41, 906 on 9/2/2020.

3. The application has been amended as follows:

Claim 1. (Currently Amended) A method comprising:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback:

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program and to simulate user interactions with the displayed user interface of the computer program , wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises an action selected from a group consisting of inputting data to the displayed user interface [[or]]and executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

Claim 41. (Currently Amended) A non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor, cause the processor to perform:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback:

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program and to simulate user interactions with the displayed user interface of the computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises an action selected from a group consisting of inputting data to the displayed user interface [[or]]and executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

Claim 66. (Currently Amended) A system comprising: a processor and coupled memory, wherein the processor is configured to perform:

using a natural language interface, receiving input from a user as part of a natural language conversation between the natural language interface and the user, wherein the natural language conversation comprises a first natural language input from the user, a natural language feedback on the first natural language input from the natural language interface, and a second natural language input from the user in response to the natural language feedback;

determining, based on the first and second natural language inputs from the user, an automation process configured to perform an automation of a sequence of interactions with a displayed user interface of a computer program and to simulate user

interactions with the displayed user interface of the computer program, wherein the user interface of the computer program is configured to be displayed on a screen, wherein each interaction of the sequence of interactions comprises an action selected from a group consisting of inputting data to the displayed user interface [[or]]and executing a functionality of the displayed user interface; and

executing the automation process, wherein said executing comprises utilizing the displayed user interface of the computer program to perform the sequence of interactions.

Claim 73. (Cancelled)

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHELET SHIBEROU whose telephone number is (571)270-7493. The examiner can normally be reached on Monday-Friday 9:00 AM-5:00 PM Eastern Time.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abdullah Al Kawsar can be reached on 571-270-3169. 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 https://ppair-my.uspto.gov/pair/PrivatePair. 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.

/MAHELET SHIBEROU/
Primary Examiner, Art Unit 2171

Examiner-Initiated Interview Summary	Application No. 16/358,467	Applicant(s) NAHUM, Nir	
	Examiner MAHELET SHIBEROU	Art Unit 2171	AIA (FITF) Status Yes

All participants (applicant, applicant's representative, PTO personnel):

(1) MAHELET SHIBEROU. (3) _____.

(2) Mark Koffsky, Registration No. 41,906. (4) _____.

Date of Interview: 02 September 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐ 101 ☐ 112 ☐ 102 ☐ 103 ☑ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1 and 73.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's representative and the examiner discussed the proposed examiner's amendments (i.e.the automation process to simulate user interaction...) to independent claims and claim 73. Applicant accepts the amendments. See the attached examiner's amendment for further details..

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

Notice of References Cited	Application/Control No. 16/358,467	Applicant(s)/Patent Under Reexamination NAHUM et al.	
	Examiner MAHELET SHIBEROU	Art Unit 2171	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180183735-A1	06-2018	Naydonov; Oleg	G06N3/006	1/1
*	B	US-20190043106-A1	02-2019	Talmor; Yoram	G06N3/006	1/1
*	C	US-10749823-B1	08-2020	Popa; Georgeta	G06F40/295	1/1
*	D	US-20190068527-A1	02-2019	CHEN; Jiang	G06Q10/00	1/1
*	E	US-20070172063-A1	07-2007	Biggs; Todd S.	H04L51/04	380/255
*	F	US-20190103111-A1	04-2019	Tiwari; Mitul	G06F16/3334	1/1
*	G	US-20190138600-A1	05-2019	Krishnan; Arvind	G06F8/34	1/1
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	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.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	**Art Unit**
	MAHELET SHIBEROU	2171

CPC								
Symbol							**Type**	**Version**
H04L	/	51	/	02			F	2013-01-01
G06F	/	3	/	16			I	2013-01-01
G06F	/	40	/	35			I	2020-01-01
G06F	/	40	/	134			I	2020-01-01
G06F	/	3	/	0482			I	2013-01-01
G06F	/	3	/	0483			I	2013-01-01
G06F	/	3	/	167			I	2013-01-01
G06F	/	9	/	542			I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	33	
/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	26 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7B

U.S. Patent and Trademark Office — Part of Paper No.: 20200826

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	Examiner	**Art Unit**
	MAHELET SHIBEROU	2171

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06F	/	3	/	048	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	33	
/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	26 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7B

U.S. Patent and Trademark Office — Part of Paper No.: 20200826

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	Art Unit
	MAHELET SHIBEROU	2171

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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9	9		19		29		39		49	14	59	32	69		
	10		20		30		40		50	15	60	33	70		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	33	
/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	26 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7B

U.S. Patent and Trademark Office — Part of Paper No.: 20200826

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	Art Unit
	MAHELET SHIBEROU	2171

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

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CLAIM		DATE								
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28	71					=				
18	72					=				
	73					-				

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	Art Unit
	MAHELET SHIBEROU	2171

CPC - Searched*		
Symbol	**Date**	**Examiner**
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	7/19/2019	MS
G06F3/0482, 0483, 16, 167, G06F9/542, G06F17/2235, G06F17/279	11/07/2019	MS
G06F3/0482, G06F3/16, G06F40/10, G06F3/16, G06F3/167	03/24/2020	MS
G06F3/0482, G06F3/16, G06F40/10, G06F3/16, G06F3/167	08/20/2020	MS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/MAHELET SHIBEROU/ Primary Examiner, Art Unit 2171	

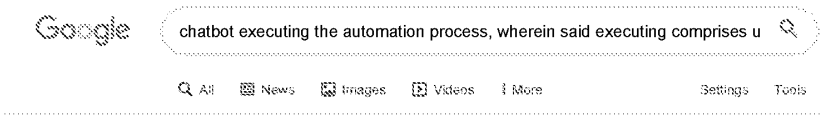
Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/358,467	NAHUM et al.
	Examiner	Art Unit
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Search Notes		
Search Notes	**Date**	**Examiner**
East Search	7/19/2019	MS
Inventor name search	7/19/2019	MS
CPC with limited text search	7/19/2019	MS
East Search	11/07/2019	MS
CPC with limited text search	11/07/2019	MS
Text search	11/07/2019	MS
Inventor name search	03/24/2020	MS
East Search	03/24/2020	MS
CPC with limited text search	03/24/2020	MS
Inventor name search	08/20/2020	MS
East Search	08/26/2020	MS
CPC combined with limited text search	08/26/2020	MS
Consulted with Class 706 (AI) Search assistances- Daniel & Vincent	08/18/2020	MS
Text search, IP.com and Google Patent	08/26/2020	MS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
	East Interference Search, USPGPUB, USPAT- See East Search History	08/26/2020	MS

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About 1,250 results (0.65 seconds)

www.google.com/patents/US20140122083

Chatbot system and method with contextual input and output ...

A chatbot system and method with contextual input/output messages. A chatbot includes a processor, an interactive dialog interface and a ...
App. - Filed Oct 26, 2012 - Published May 1, 2014 - Duan Xiaojiang - Duan Xiaojiang
Overview · Related · Discuss

www.google.com/patents/US20170193997

Conversational agent response determined using a likely ...

One or more computer programs can be configured to perform particular operations or actions by virtue of including instructions that, when executed by data ...
App. - Filed Mar 21, 2017 - Published Jul 6, 2017 - Johnny Chen - Google Inc.
Overview · Related · Discuss

www.google.com/patents/US20160352658

Chatbots

In one aspect, the invention concerns a method of operating a chatbot to engage in a conversation with a correspondent the method comprises building a profile ...
App. - Filed May 27, 2015 - Published Dec 1, 2016 - Liesl Jane Capper - International Business Machines Corporation
Overview · Related · Discuss

www.google.com/patents/US20160300570

Personality-based chatbot and methods

The system includes a storage device storing a non-transitory computer readable program; and a processor executing the non-transitory computer readable ...
App. - Filed Jun 20, 2016 - Published Oct 13, 2016 - David Gustafson - Mattersight Corporation
Overview · Related · Discuss

www.google.com/patents/US6259969

System and method for automatically verifying the ...

In an automated interface program designed to interact and communicate with users, said program executing actions when a category ... the steps of said method comprising: specifying inputs under which the program should be ... user 116 and BOT processor 100 wherein user 116 may ask questions, make declarative ...
Grant - Filed Feb 3, 1998 - Issued Jul 10, 2001 - Walter A. Tackett - Nativeminds, Inc.
Overview · Related · Discuss

www.google.com/patents/US20140164296

Chatbot system and method with entity-relevant content from ...

Chatbot computer programs are designed to simulate intelligent conversation with ... also includes one or more lines of code instructions that receive an answer to ... user 102 utilizes mobile device 112 to communicate with chatbot system 108. ... that displays chatbot dialog interface 116 to interact with chatbot system 108.
App. - Filed Dec 11, 2012 - Published Jun 12, 2014 - Xiaojiang Duan - Xiaojiang Duan
Overview · Related · Discuss

www.google.com/patents/US7861252

Intelligent software agent system architecture

The new system further includes a component called "botBox" executable on ... by the user, but made available to the remote-executing sBot only through the ... We

do not yet have a generic software agent that can work effectively with all types ... and a corresponding client part, that interact with the botServer and botMaster, Grant - Filed Mar 21, 2001 - Issued Dec 28, 2010 - Andrzej Uszok - Andrzej Uszok
Overview · Related · Discuss

www.google.com/patents/US8639638

Enabling a support service to provide automated problem ...



As is known by those of skill in the art, a chatbot is a computer program designed to simulate an intelligent conversation with one or more human users, via ... Grant - Filed Jan 21, 2011 - Issued Jan 28, 2014 - Zon-Yin Shae - International Business Machines Corporation
Overview · Related · Discuss

www.google.com/patents/US8738739

Automatic message selection with a chatbot



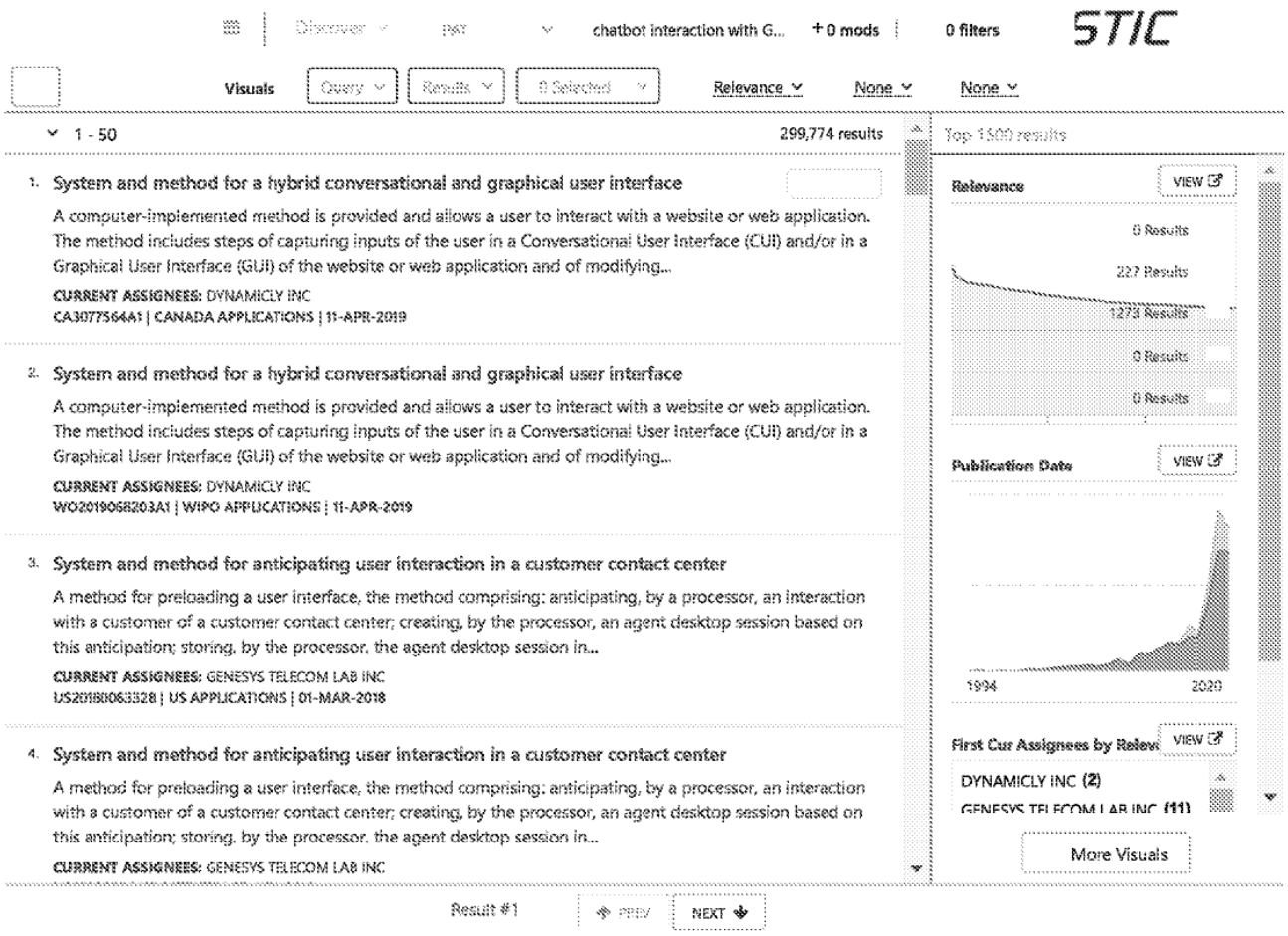
The terms "program", "software application", and the like as used herein, are defined as a sequence of instructions designed for execution on an information ... Grant - Filed Oct 20, 2011 - Issued May 27, 2014 - Michael G. Makar - The Delfin Project, Inc.
Overview · Related · Discuss

www.google.com/patents/US20060150119

Method for interacting with automated information agents ...



In order to reduce or eliminate ergonomic inefficiencies arising when an ... The streamlined graphical user interface displays an agent selection screen showing ... App. - Filed Dec 31, 2004 - Published Jul 6, 2006 - Pascal Chesnais - France Telecom
Overview · Related · Discuss


Discover
INXT
chatbot interaction with G...
+ 0 mods
0 filters
STIC
Visuals
Query
Results
0 Selected
Relevance
None
None
1 - 50
299,774 results
Top 1500 results
1. System and method for a hybrid conversational and graphical user interface
A computer-implemented method is provided and allows a user to interact with a website or web application. The method includes steps of capturing inputs of the user in a Conversational User Interface (CUI) and/or in a Graphical User Interface (GUI) of the website or web application and of modifying...
CURRENT ASSIGNEES: DYNAMICLY INC
CA3077564A1 | CANADA APPLICATIONS | 11-APR-2019
2. System and method for a hybrid conversational and graphical user interface
A computer-implemented method is provided and allows a user to interact with a website or web application. The method includes steps of capturing inputs of the user in a Conversational User Interface (CUI) and/or in a Graphical User Interface (GUI) of the website or web application and of modifying...
CURRENT ASSIGNEES: DYNAMICLY INC
WO2019068203A1 | WIPO APPLICATIONS | 11-APR-2019
3. System and method for anticipating user interaction in a customer contact center
A method for preloading a user interface, the method comprising: anticipating, by a processor, an interaction with a customer of a customer contact center; creating, by the processor, an agent desktop session based on this anticipation; storing, by the processor, the agent desktop session in...
CURRENT ASSIGNEES: GENESYS TELECOM LAB INC
US20180063328 | US APPLICATIONS | 01-MAR-2018
4. System and method for anticipating user interaction in a customer contact center
A method for preloading a user interface, the method comprising: anticipating, by a processor, an interaction with a customer of a customer contact center; creating, by the processor, an agent desktop session based on this anticipation; storing, by the processor, the agent desktop session in...
CURRENT ASSIGNEES: GENESYS TELECOM LAB INC
Relevance
VIEW
0 Results
227 Results
1273 Results
0 Results
0 Results
Publication Date
VIEW
1994
2020
First Cur Assignees by Relev
VIEW
DYNAMICLY INC (2)
GENESYS TELECOM LAB INC (11)
More Visuals
Result #1
PREV
NEXT

EAST Search History

EAST Search History (Prior Art)

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S1	0	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/06/03 09:15
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S8	15	"20180025085".pn. "20190102078".pn. "20190066694".pn. "20170286269".pn. "20180330720".pn. "20180287968".pn. "20170180276".pn. "20190207875".pn. "20180083894".pn. "20170293834".pn. "20180332167".pn. "20180248818".pn. "20180174020".pn. "20180181558".pn."20190138171".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:15
S9	2	("20110213642" | "20170310613").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:25
S10	6	"20080089490".pn. "20110213642".pn. "8949377".pn. "8224906".pn. "20090292778".pn. "20180239837".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/05 10:41
S14	47	((chat adj bot) or (virtual adj agent) or (virtual adj assistance)) same (web or webpage or user adj interface) near3 (form or input adj field or data adj entry)	US-PGPUB; USPAT	OR	ON	2019/07/05 11:09
S15	12	("20100082620" | "20160358234" | "20140081925" | "20140108308" | "20150193693" | "9229800" | "20160217119" | "7685144" | "20170032029" | "20110029862" | "20160217124" | "20170091320").PN.	US-PGPUB; USPAT	OR	ON	2019/07/05 11:25
S16	45	("6604090" | "20030093428" | "6832196" | "6983307" | "20080270224" | "7295664" | "6466654" | "20040128136" | "20070226198" | "7366766" | "7373300" |	US-PGPUB; USPAT	OR	ON	2019/07/05 12:12

		"6539080" | "6604075" | "20010056479" | "20030012344" | "7146323" | "7222074" | "20030035519" | "6570974" | "20050135571" | "6807529" | "6895084" | "7275086" | "6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" | "5915001" | "7143042" | "7487440").PN.				
S17	6	"20170255445".pn. "20190126463".pn. "20180107653".pn. "8713540".pn. "7487095".pn. "20190103101".pn.	US-PGPUB; USPAT	OR	ON	2019/07/05 12:24
S18	17	"20060129379".pn. "20120078611".pn. "8594997".pn. "20050210061".pn. "20130103384".pn. "20190087398".pn. "7613719".pn. "20070174350".pn. "9015030".pn. "20020063734".pn. "20180137178".pn. "20110214067".pn. "20090077494".pn. "20060020886".pn. "20120110459".pn. "9058105".pn. "20160260433".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/18 09:35
S19	1	"9015030".pn.	US-PGPUB; USPAT	OR	OFF	2019/07/18 10:15
S20	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/07/18 10:24
S21	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/18 12:56
S43	7	("20050172261" | "20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
S44	5	(Nahum near3 Nir).inv.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:26
S45	1	(Sasson near3 Shlomi).inv.	US-PGPUB; USPAT	OR	OFF	2019/07/19 11:27
S46	229	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:28

S48	46	(chat near3 bot) with (user adj interface or application) with (input or command)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:30
S49	49	((chat adj bot) or (virtual adj agent) or (virtual adj assistance)) same (web or webpage or user adj interface or application) near3 (form or input adj field or data adj entry or table)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:31
S50	29	S46 and (G06F3/0482 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F3/167).CPC.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:33
S51	34	("6539080" | "6604075" | "20010056479" | "20030012344" | "7146323" | "7222074" | "20030035519" | "6570974" | "20050135571" | "6807529" | "6895084" | "7275086" | "6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" | "5915001" | "7143042" | "7487440").PN.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:34
S52	229	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/07/19 11:37
S53	48	S52 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/07/19 11:37
S54	2	"20180137178".pn. "20050210061".pn.	US-PGPUB; USPAT	OR	ON	2019/11/04 10:59
S55	52	(non-human or non near2 human or robot) near3 (chat) with (website or webpage or service)	US-PGPUB; USPAT	OR	ON	2019/11/04 11:22
S56	16	("7379087" | "20070186172" | "7861176" | "20010032244" | "8335825" | "20120072440" | "7305350" | "8271509" | "20130332537" | "20120036245" | "20120036245" | "7263526" | "20030037110" | "20090234926" | "8335495" | "20010054064" | "20100076837" | "20010032244" | "20090234926" | "7305350" | "8271509" | "8335495").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 11:38

S57	0	(non-human or non near2 human or robot or chat adj bot) near3 (help or assistance) near3 (suggest$3 or recommend$3 or feedback) near7 (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:26
S58	32	(non-human or non near2 human or robot or chat adj bot) near3 (help or assistance) same (suggest$3 or recommend$3 or feedback) same (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:26
S59	48	(chat adjs bot) near3 (list$3 or present$3 or display$3) same (help or assistance) same (suggest$3 or recommend$3 or feedback) same (website or webpage or application or program or form or user adj interface)	US-PGPUB; USPAT	OR	ON	2019/11/04 12:28
S73	6	"20180144126".pn. "20180189408".pn. "20070168480".pn. "20170237692".pn. "20180189795".pn. "20090281966".pn.	US-PGPUB; USPAT	OR	ON	2019/11/04 13:06
S74	142	(chat adj bot or bot or robot) with (complet$3 or finish$3 or help$3 or assist$4) with (task or job or interaction) near3 (application or web or website or webpage or program)	US-PGPUB; USPAT	OR	ON	2019/11/04 13:21
S76	1,011	(chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user	US-PGPUB; USPAT	OR	ON	2019/11/04 13:27
S77	2	("20150063556" | "20170324866").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 13:34
S78	40	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) with (task or (fill$3 or complet$3) near2 (form or field))	US-PGPUB; USPAT	OR	ON	2019/11/04 13:41
S79	111	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) near3 service	US-PGPUB; USPAT	OR	ON	2019/11/04 13:53
S80	27	((chat adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user) near3 (interact$3 near3 (application or user adj interface))	US-PGPUB; USPAT	OR	ON	2019/11/04 13:54
S81	1	("20120215871").PN.	US-PGPUB; USPAT	OR	ON	2019/11/04 14:06
S82	200	(application or user adj interface or program or website or webpage or web) near5 ((chat	US-PGPUB; USPAT	OR	ON	2019/11/04 14:15

		adj bot or bot or robot) near4 (convers$4 or chat$3 or messag$3) near3 user)				
S83	3	"20180005216".pn. "20190207875".pn. "20180005215".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/04 14:30
S84	3	"20190287537".pn. "20190066694".pn. "20180102989".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/04 14:34
S85	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:11
S86	1	"20160283463".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:29
S87	11	"20160283463".pn. "20040083092".pn. "20140278343".pn. "10419489".pn. "20170293610".pn. "20180081950".pn. "20180212904".pn. "9201865".pn. "20090229264".pn. "8346563".pn. "20140019116".pn.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:37
S88	13	("9130900" | "9201865" | "20090313055" | "20120150922" | "20100125456" | "20130110519" | "6952665" | "20130198360" | "20110035452" | "20120271640" | "7103553" | "20090248587" | "10042836").PN.	US-PGPUB; USPAT	OR	OFF	2019/11/07 14:53
S90	9	"20140006082".pn. "20180039478".pn. "20190310824".pn. "20100318398".pn. "20140012574".pn. "20180039477".pn. "20180144308".pn. "20140343950".pn."20140115456".pn.	US-PGPUB; USPAT	OR	ON	2019/11/07 15:12
S91	8	("20120209586" | "20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2019/11/07 15:54
S93	293	(chat near3 bot) with (user adj interface or application)	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03
S94	63	S93 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03
S95	63	S94 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2019/11/08 13:03

S96	21	(user adj interface or GUI) with (chat near bot) with (inpu$4 or click$4 or execut$3)	US-PGPUB; USPAT	OR	OFF	2020/03/16 10:56
S97	0	(chat near bot) with (interact$3 near3 display$3 near4 (application or user adj interface or GUI))	US-PGPUB; USPAT	OR	OFF	2020/03/16 11:09
S98	148	(chat near bot) same (interact$3 or input$3) with (application or user adj interface or GUI)	US-PGPUB; USPAT	OR	OFF	2020/03/16 11:11
S99	42	(chat near bot) same (interact$3 or input$3 or click$3 or enter$3 or navigat$3 or fill$3) near3 (data or information or region or page or field) same (application or form or page or user adj interface or GUI)	US-PGPUB; USPAT	OR	OFF	2020/03/16 11:17
S100	0	(natural near languge) with (assist$4 or help$3 or perform$3) with (interact$3 or input$3 or click$3 or enter$3 or navigat$3 or fill$3) near3 (data or information or region or page or field) with (application or form or page or user adj interface or GUI)	US-PGPUB; USPAT	OR	OFF	2020/03/16 11:41
S101	2	(chat near bot) with (assist$4 or help$3 or perform$3) with (interact$3 or input$3 or click$3 or enter$3 or navigat$3 or fill$3) near3 (data or information or region or page or field) with (application or form or page or user adj interface or GUI)	US-PGPUB; USPAT	OR	OFF	2020/03/16 11:41
S102	466	(chat near bot) with (interact$3 or input$3 or click$3 or enter$3 or navigat$3 or fill$3)	US-PGPUB; USPAT	OR	ON	2020/03/16 11:44
S103	63	S102 and G06f3/048$.CPC.	US-PGPUB; USPAT	OR	ON	2020/03/16 11:46
S104	134	(chat near bot) with (interact$3 or input$3) with (application or user adj interface or GUI)	US-PGPUB; USPAT	OR	ON	2020/03/16 11:48
S105	6	(Nahum near3 Nir).inv.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:29
S106	1	(Sasson near3 Shlomi).inv.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:30
S107	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:38
S108	13	("20160171119" | "20150339942" | "20020194164" | "8024660" | "20110185288" | "20140310596" |	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:50

		"20120317481" | "20140068498" | "8984441" | "20120022951" | "20150310488" | "20070300174" | "20080313149").PN.				
S110	8,622	(voice or vocal or speech or speaker or natural adj language or chat near bot) near6 (interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application)	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:52
S111	7,681	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 (voice or vocal or speech or speaker or natural adj language or chat near bot)	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:54
S114	6,969	S111 and @ad<"20171105"	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:56
S115	659	S114 and (G06F3/0482, G06F3/16, G06F40/10, G06F3/16, G06F3/167).CPC.	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:57
S119	62	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 ((chat adj bot) or (virtual adj agent) or (virtual adj assistance))	US-PGPUB; USPAT	OR	OFF	2020/03/24 11:59
S120	76	(interact$4 or manipulat$3 or navigat$3 or action) near6 (document or application) near4 ((chat adj bot) or (virtual adj agent) or (virtual adj assistance))	US-PGPUB; USPAT	OR	ON	2020/03/24 11:59
S121	5	("20100138239" | "20120084096" | "20140013199" | "20140324477" | "6826727").PN.	US-PGPUB; USPAT	OR	OFF	2020/03/24 12:05
S122	75	(natural near3 language or chat near bot) near4 (interact$4 or manipulat$3 or navigat$3 or fill$3 or complet$3) near4 (document)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:05
S132	1,391	(natural near language or (chat adj bot) or (virtual adj agent) or (virtual adj assistance) or smart adj speaker or voice or vocal or speech) with (smart near4 (document or application))	US-PGPUB; USPAT	OR	ON	2020/03/24 12:15
S134	313	(smart near4 (document or application)) with (voice or vocal or speech) with (input or command)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:15
S135	54	(smart near4 (document or application)) with (voice or vocal or speech) with (input or command) with (navigat$4 or manipulat$3 or fill$3 or hover$3 or click$3 or select$4 or scroll$3 or flip$3 or highlight$3)	US-PGPUB; USPAT	OR	ON	2020/03/24 12:17

S136	7	("20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:18
S137	13	("20010032244" | "8335825" | "20120072440" | "7305350" | "8271509" | "20130332537" | "20120036245" | "20120036245" | "7263526" | "20030037110" | "20090234926" | "8335495" | "20010054064" | "20100076837" | "20010032244" | "20090234926" | "7305350" | "8271509" | "8335495").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:18
S138	7	("20120265528" | "20100077085" | "20120016678" | "20050203757" | "20130019320" | "6636831" | "7921156" | "20050203757" | "7921156").PN.	US-PGPUB; USPAT	OR	ON	2020/03/24 12:20
S139	10	("20120150922" | "20100125456" | "20130110519" | "6952665" | "20130198360" | "20110035452" | "20120271640" | "7103553" | "20090248587" | "10042836").PN.	US-PGPUB; USPAT	OR	OFF	2020/03/24 12:20
S140	1	"20140249830".pn.	US-PGPUB; USPAT	OR	OFF	2020/03/25 12:08
S141	1	"20180137178".pn.	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:33
S142	0	convers$3 with chat near3 bot with (webpage or web near page)	US-PGPUB; USPAT	OR	ON	2020/08/14 09:42
S143	23	(conversation or natural near language) same chat near3 bot same (webpage or web near page)	US-PGPUB; USPAT	OR	ON	2020/08/14 09:43
S144	16	("20090007011" | "7027975" | "9369410" | "20150142704" | "7027975" | "20090070113" | "8346563" | "20150142704" | "8346563" | "8001469" | "20100005081" | "9472185" | "20150014270" | "20160343378" | "20170116982" | "8719200" | "9043407" | "20100005081" | "20140343950" | "9472185" | "20140034395").PN.	US-PGPUB; USPAT	OR	ON	2020/08/14 10:06
S145	26	("20020133347" | "20030046689" | "20030182391" | "20040162724" | "20040210661" | "20050015350" | "20060069546" | "20060150119" | "20060155765" | "20070203693" | "20140297568" | "6570555" | "8001250" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/14 10:13

		"8311513" | "8630961" | "8719200").PN. OR ("9369410").URPN.				
S146	6	"20180239837".pn. "8949377".pn. "20080089490".pn. "9042540".pn. "7962578".pn. "20190103111".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/14 10:50
S147	1	(chat$bot or chat near2 bot or conversational near2 agent) with (communicat$3 or convers$4) with (natural$language or natural near2 language) with (help$3 or assist$3 or process$3 or execut$3) with (navigat$3 or fill$3 near out or hover$3 or click$3 or redirect$3) with (page or webpage or GUI or user adj interface or web)	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 11:30
S148	95	(chat$bot or chat near2 bot or conversational near2 agent) with (communicat$3 or convers$4) with (natural$language or natural near2 language)	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 11:32
S149	1	"20170366479".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 11:34
S150	1	16/358467.app.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 11:43
S151	29	("20120260263" | "8326928" | "8825735" | "8660244" | "20070172063" | "20080288467" | "20090055485" | "7437292" | "7752554" | "8204984" | "20030182391" | "8250192" | "20080025328" | "7747785" | "7949869" | "8027839" | "20070043878" | "20100122082" | "8769028" | "20170324866" | "7287057" | "7870199" | "9043407" | "20170324868" | "20160322050" | "20030220972" | "20090234638" | "8352873" | "8787553").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 11:55
S152	17	("6158011" | "7043230" | "20030163739" | "20050010811" | "20030217105" | "5311596" | "20030093480" | "6874090" | "6496932" | "20020004831" | "6894999" | "6574628" | "6401080" | "20050193203" | "20030163739" | "20030093480" | "20040073795" | "6580718" | "6477578").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 13:28

S153	104	bank near4 bot	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 13:29
S154	19	("20170324866" | "20190215282" | "20190370629" | "20080307038" | "20160300570" | "20200099633" | "20160100130" | "20160300570" | "20170324867" | "20010048449" | "20020198009" | "20180025726" | "9794199" | "20160308799" | "9794199" | "20170230312" | "20160360039" | "20180090137" | "20170230312" | "20170180284" | "20170358296" | "20160352656").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 13:32
S156	5	((website or webpage or web) near3 bank) near4 bot	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 15:09
S157	3	(website or webpage or web) near4 automation near4 bot	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 15:11
S158	118	(website or webpage or web) near4 (chat or conversation) near4 bot	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 15:12
S159	9	("20080294619" | "20170116982" | "20170230312" | "20170310613" | "6418440" | "8630961" | "8930296" | "9369410" | "9372858").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 15:19
S160	17	("20160110071" | "20190236137" | "20120296638" | "20190188326" | "20120232885" | "20180039695" | "8566102" | "20190147029" | "20170116982" | "20180246877" | "20160342702" | "20170116982" | "20120245944" | "20180365567" | "20190228099" | "7783642" | "9548050" | "20170147554").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 15:23
S161	21	("20030182391" | "20050102065" | "20050125370" | "20070043878" | "20070168480" | "20090281966" | "20110078105" | "20160352658" | "20170048170" | "20170357638" | "20180039618" | "20180083894" | "20180083898" | "20180083901" | "20180102989" | "20180107461" | "20180109526" | "20180210874" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/14 16:41

		"6363301" | "6754647" | "9959868").PN. OR ("10333868").URPN.				
S162	3	(chat$bot or chat near2 bot or conversational near2 agent) with (communicat$3 or convers$4) with (natural$language or natural near2 language) with (navigat$3 or interaction or fill$3 near out or hover$3 or click$3 or redirect$3 or highlight$3 or focus$3) with (page or webpage or GUI or user adj interface or web or form)	US-PGPUB; USPAT; USOCR	OR	ON	2020/08/14 17:50
S163	10	("10218649" | "20130275164" | "9031586" | "10068174" | "20150348551" | "9031216" | "10116596" | "20090006391" | "20130297317" | "20030182391").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/17 09:34
S164	21	("20030097301" | "20030182391" | "20070016585" | "20070174244" | "20070219901" | "20080263458" | "20090006333" | "20090254417" | "20090276400" | "20090313115" | "20100114684" | "20100180217" | "20100274796" | "20110151899" | "20130167044" | "20140074951" | "20140136506" | "20140255895" | "7603413" | "9031216").PN. OR ("10218649").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/17 09:39
S165	12	(chatbot near7 (hover$3 or click$3 or manipulat$3)) near4 (user adj interface or object or UI or application or webpage or web)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/17 09:45
S166	7	("10542077" | "20080120380" | "20090077212" | "20160226829" | "20160232339" | "20170078448" | "20170329466").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/17 09:49
S167	150	("20010044791" | "20020072951" | "20020082892" | "20020129352" | "20020140731" | "20020143997" | "20020162090" | "20020165742" | "20030004971" | "20030018705" | "20030018830" | "20030066031" | "20030066032" | "20030069936" | "20030070000" | "20030070004" | "20030070005" | "20030074418" | "20030120675" | "20030151633" | "20030159136" | "20030187921" | "20030189600" | "20030204427" | "20030206192" | "20030225730" | "20040001092" | "20040010489" | "20040015981" | "20040027388" | "20040128001" | "20040186860" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/17 09:55

		"20040193510" | "20040199489" | "20040199536" | "20040199543" | "20040249854" | "20040260534" | "20040260659" | "20040268299" | "20050050555" | "20050091098" | "20060021019" | "20080249972" | "20090063414" | "20090100342" | "20090177744" | "20110247051" | "20120042218" | "20120218958" | "20120233137" | "20130212497" | "20130218948" | "20130218949" | "20130218966" | "20130247216" | "5577188" | "5608872" | "5649104" | "5715450" | "5761419" | "5819038" | "5821937" | "5831610" | "5873096" | "5918159" | "5963953" | "6092083" | "6161149" | "6169534" | "6178425" | "6189011" | "6216135" | "6233617" | "6266669" | "6295530" | "6324568" | "6324693" | "6336137" | "6367077" | "6393605" | "6405220" | "6434550" | "6446089" | "6535909" | "6549908" | "6553563" | "6560461" | "6574635" | "6577726" | "6601087" | "6604117" | "6604128" | "6609150" | "6621834" | "6654032" | "6665648" | "6665655" | "6684438" | "6711565" | "6724399" | "6728702" | "6728960" | "6732095" | "6732100" | "6732111" | "6754681" | "6763351" | "6763501" | "6768904" | "6772229" | "6782383" | "6804330" | "6826565" | "6826582" | "6826745" | "6829655" | "6842748" | "6850895" | "6850949" | "7062502" | "7069231" | "7181758" | "7289976" | "7340411" | "7356482" | "7401094" | "7412455" | "7508789" | "7620655" | "7698160" | "7730478" | "7779475" | "8014943" | "8015495" | "8032297" | "8082301" | "8095413" | "8095594" | "8209308" | "8275836" | "8457545" | "8484111" | "8490025" | "8504945" | "8510045" | "8510664" | "8566301" | "8646103" | "D454139").PN.				
S168	5,065	(chatbot or chat-bot or chat near bot or robot) near7 (interact$3 or hover$3 or click$3 or manipulat$3 or typing or entering or fill or filling) near4 (user adj interface or object or UI or application or webpage or website or web or form or document or electronic adj2 form)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/17 09:58

S169	3,420	(chatbot or chat-bot or chat near bot or robot) near3 (interact$3 or hover$3 or click$3 or manipulat$3 or typing or entering or fill or filling) near4 (user adj interface or object or UI or application or webpage or website or web or form or document or electronic adj2 form)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/17 10:01
S170	114	S169 and G06F3/048$.CPC.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/17 10:04
S171	5	("20190347142" | "20190132264" | "20190228068" | "20190132264" | "20190392285" | "20190171758").PN.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/17 10:18
S172	1,050	(chatbot or chat-bot or chat near bot or robot) near7 (interact$3 or hover$3 or click$3) near4 (element or UI or object)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 10:18
S173	71	(chatbot or chat-bot or chat near bot) near7 (interact$3 or hover$3 or click$3) near4 (element or UI or object or user adj interface)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 10:19
S174	12	(chatbot or chat-bot or chat near bot) with (fill$3 or highlight$3) with (form or field or box) with (application or webpage or user adj inteface or form or PDF)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 10:40
S175	19	("20120041903" | "20150066479" | "20180097749" | "20150178371" | "20170116173" | "20130317826" | "20050022106" | "20140122619" | "20160308795" | "20180314689" | "20160042359" | "20130268260" | "20180240135" | "20140279050" | "20160099843" | "20170116173" | "20180025726" | "20170344532" | "20130275875" | "20080275694").PN.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 10:47
S176	7	"10530718".pn. "20190147029".pn. "10121186".pn. "20180217970".pn. "20170236196".pn.	US-PGPUB; USPAT;	OR	ON	2020/08/18 10:53

			EPO; JPO; IBM_TDB			
S177	7	("20130262574" | "20180095940" | "20180121394" | "20190034395" | "8938669" | "9348803" | "9456012").PN. OR ("10530718").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/18 11:32
S178	54	(chatbot or chat-bot or chat near bot) same (fill$3 or highlight$3 or flag$3) same (form or field or box or element or object) same (application or webpage or user adj inteface or form or PDF)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 12:11
S179	2	"20180143758".PN. "20040226002".PN.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 13:50
S180	7	("20180143758" | "20040226002" | "20140195621" | "20180239837" | "20140019884" | "20080005269" | "20190130073").PN.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/18 13:54
S181	8	"20120221331".pn. "20190147029".pn. "8718242".pn. "20190332358".pn. "10217462".pn. "20200034399".pn. "20200226663".pn. "20090187410".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/18 14:58
S182	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/08/18 15:11
S183	1	"8462917".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/18 15:28
S184	79	("20010056479" | "20020078140" | "20020128821" | "20020164000" | "20030012183" | "20030012344" | "20030078779" | "20030078987" | "20030093428" | "20030200094" | "20040128136" | "20040205614" | "20050076089" | "20050131625" | "20050135571" | "20050182770" | "20070226198" | "20090292529" | "20100098224" | "20120221331" | "5913193" | "5915001" | "6173263" | "6233544" | "6266637" | "6311182" | "6345250" | "6366883" | "6401094" | "6456699" | "6466654" | "6505158" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/18 15:28

		"6539080" | "6567745" | "6570974" | "6587786" | "6587822" | "6604075" | "6604090" | "6615177" | "6624803" | "6633846" | "6636504" | "6662340" | "6807529" | "6832196" | "6859776" | "6859910" | "6895084" | "6925288" | "6934684" | "6944592" | "6983307" | "6996609" | "7038807" | "7099453" | "7143042" | "7146323" | "7177862" | "7197460" | "7200677" | "7222074" | "7275086" | "7366766" | "7373300" | "7434162" | "7437357" | "7487440" | "7577593" | "7580842" | "7609829" | "7660400" | "7869998" | "8060369" | "8065151" | "8090583" | "8175230").PN. OR ("8462917").URPN.				
S186	5	(webpage near5 (dialog or conversation)) near6 (fill$3 with field)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:12
S187	68	(webpage near5 (dialog or conversation)) near6 (chatbot or bot or agent)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:13
S188	5	("20130226925" | "20150026155" | "20150364057" | "20150378975" | "20160350336").PN. OR ("10558693").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/19 11:22
S189	13	(webpage near5 (dialog or conversation)) same (fill$3 with field)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:24
S190	549	(webpage or document or wedsite or browser or application) same (dialog or conversation or chatbot or chat$bot or chat near bot) same (fill$3 with field)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:27
S191	552	(webpage or document or website or browser or application) same (dialog or conversation or chatbot or chat$bot or chat near bot) same (fill$3 with field)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:27
S192	44	S191 and G06F3/048$.CPC.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/19 11:32
S193	32	S191 and G06F40/174.cpc.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/19 11:41

S196	29,327	(webpage or document or website or browser or application) near7 (conversation or chatbot or chat$bot or chat near bot or natural adj language)	US-PGPUB; USPAT	OR	ON	2020/08/19 11:43
S197	32	S193 and G06F40/174.cpc.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/19 11:43
S198	40	(chatbot or chat$bot or chat near bot or natural adj language) near4 (fill$4 near3 (form or field))	US-PGPUB; USPAT	OR	ON	2020/08/19 11:50
S199	58	(chatbot or chat$bot or chat near bot or virtual adj agent or non$humand adj agent) same (fill$4 near4 (form or field))	US-PGPUB; USPAT	OR	ON	2020/08/19 12:01
S200	20	("20160110071" | "20190188326" | "20180039695" | "20190147029" | "20120245944" | "20180365567" | "7783642" | "20160342702" | "20170116982" | "20190228099" | "20130246435" | "20120232885" | "20170147554" | "20190236137" | "8566102" | "20180246877" | "20080114800" | "9548050" | "20120296638" | "20120150838").PN.	US-PGPUB; USPAT	OR	ON	2020/08/19 12:06
S201	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/08/20 15:31
S202	8	(Nahum near3 Nir).inv.	US-PGPUB; USPAT	OR	OFF	2020/08/20 15:32
S203	1	(Sasson near3 Shlomi).inv.	US-PGPUB; USPAT	OR	OFF	2020/08/20 15:32
S204	14	("20100251128" | "20160171119" | "20150339942" | "20020194164" | "8024660" | "20110185288" | "20140310596" | "20120317481" | "20140068498" | "8984441" | "20120022951" | "20150310488" | "20070300174" | "20080313149").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/20 15:32
S205	874	(webpage or document or website or browser or application) near5 (chatbot or chat$bot or chat near bot or virtual adj assistance)	US-PGPUB; USPAT	OR	ON	2020/08/20 15:36

S206	5	(webpage or document or website or browser or application) near5 (chatbot or chat$bot or chat near bot or virtual adj assistance) near5 (convers$4 or messag43 or talk43 or help$3) near5 (action or activit$3 or task or interaction)	US-PGPUB; USPAT	OR	ON	2020/08/20 15:38
S207	7	("20080010259" | "20120016678" | "20120303273" | "20140331176" | "20150198452" | "20170103088" | "20190003849").PN. OR ("10749823").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/20 15:41
S208	102	(webpage or document or website or browser or application) same (chatbot or chat$bot or chat near bot or virtual adj assistance) same (convers$4 or messag43 or talk43 or help$3) same (action or activit$3 or task or interaction)	US-PGPUB; USPAT	OR	ON	2020/08/20 15:45
S209	47	S208 and @ad<"20171105"	US-PGPUB; USPAT	OR	OFF	2020/08/20 15:47
S210	40	("7295664" | "6466654" | "20040128136" | "20070226198" | "7366766" | "7373300" | "6539080" | "6604075" | "20010056479" | "20030012344" | "7146323" | "7222074" | "20030035519" | "6570974" | "20050135571" | "6807529" | "6895084" | "7275086" | "6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" | "5915001" | "7143042" | "7487440").PN.	US-PGPUB; USPAT	OR	ON	2020/08/20 15:59
S211	58	(chatbot or chat$bot or chat near bot or virtual adj agent or (non$human or robotic) adj agent) same (fill$4 near4 (form or field))	US-PGPUB; USPAT	OR	ON	2020/08/20 16:00
S212	120	S205 and (G06F3/0482 OR G06F3/0483 OR G06F3/16 OR G06F3/167 OR G06F9/542 OR G06F16/284 OR G06F16/248 OR G06F3/04895 OR G06F17/279).CPC.	US-PGPUB; USPAT	OR	ON	2020/08/20 16:01
S213	9	S205 and G06F40/174.cpc.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/20 16:02

S214	6	("20060112123" | "20130110803" | "20130110810" | "7613719" | "8145990" | "8935277").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/20 16:03
S215	48	(conversation or chata$3 or communication or messag$3) with (chat adj bot or chat$bot or chat near bot or virtual adj agent or virtual adj assistance) with (web or webpage or website or user adj interface) with (form or input adj field or data adj entry)	US-PGPUB; USPAT	OR	ON	2020/08/20 16:06
S216	102	(conversation or chat$3 or communicat$4 or messag$3) with (chat adj bot or chat$bot or chat near bot or virtual adj agent or virtual adj assistance) with (web or webpage or website or user adj interface) with (form or input adj field or data adj entry)	US-PGPUB; USPAT	OR	ON	2020/08/20 16:07
S217	23	(conversation or chat$3 or communicat$4 or messag$3) with (chat adj bot or chat$bot or chat near bot or virtual adj agent or virtual adj assistance) with (web or webpage or website or user adj interface) with ((fill$3 or complet$3 or input$2) near3 (form or input adj field) or data adj entry)	US-PGPUB; USPAT	OR	ON	2020/08/20 16:08
S219	1	"9922008".pn.	USPAT	OR	OFF	2020/08/20 16:51
S220	17	("6158011" | "7043230" | "20030163739" | "20050010811" | "20030217105" | "5311596" | "20030093480" | "6874090" | "6496932" | "20020004831" | "6894999" | "6574628" | "6401080" | "20050193203" | "20030163739" | "20030093480" | "20040073795" | "6580718" | "6477578").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/20 17:24
S221	22	("6624803" | "6633846" | "20030078779" | "7437357" | "20030078987" | "6925288" | "7177862" | "20020161647" | "20050182770" | "6311182" | "20020164000" | "6567745" | "6587786" | "6587822" | "6615177" | "20040205614" | "6401094" | "6996609" | "20020128821" | "5915001" | "7143042" | "7487440").PN.	US-PGPUB; USPAT	OR	ON	2020/08/20 17:35
S222	10	("20050042593" | "20070015118" | "20070239760" | "20080288922" | "7506248" | "7546585" | "7555743" | "7617519" | "8065610" | "8717383").PN. OR ("9922008").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/20 17:35

S223	20	("20050055210" | "20050203751" | "20110060587" | "20020091528" | "20120166178" | "20130152092" | "20150242385" | "7266537" | "8311835" | "20140297282" | "20040083092" | "20080082329" | "6999930" | "7228275" | "2009150156" | "8024196" | "20110060587" | "20130268260" | "20140380285" | "8024196" | "20140297282" | "20150242385" | "6868385" | "7647225" | "20020091528" | "8332218").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/20 19:01
S224	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/08/25 16:58
S227	21	script$2 near5 chatbot	US-PGPUB; USPAT	OR	OFF	2020/08/25 17:10
S229	10	("20070239760" | "7555743" | "20080288922" | "20070015118" | "8065610" | "20080288922" | "7546585" | "7617519" | "8717383" | "20070015118" | "7506248" | "20050042593" | "20070239760" | "20050042593").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/25 17:26
S230	1	"20070172063".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/25 17:31
S231	3	chatbot with sequenc$4 with automat$4	US-PGPUB; USPAT	OR	OFF	2020/08/25 17:32
S232	1	15/395543.app.	US-PGPUB; USPAT	OR	OFF	2020/08/25 17:57
S233	31	("10051103" | "20170324868" | "20180158068" | "20120203846" | "20120042263" | "20130166275" | "20140244744" | "20150347432" | "20170098284" | "20170236196" | "20140081636" | "20140143683" | "20130129076" | "20140237057" | "20180174020" | "20130080928" | "20180052928" | "20130311621" | "20160117740" | "20170076264" | "20120290950" | "20120084811" | "20140258032" | "10332170" | "9191615" | "20180150524" | "20130232204" | "20170324867" | "20100030578" | "20150254675" | "20150163358").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/25 18:08

S236	1	chatbot same imitat$3 same interaction	US-PGPUB; USPAT	OR	OFF	2020/08/25 18:16
S240	1	"20170329466".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/26 07:52
S241	23	HR adj2 chatbot	US-PGPUB; USPAT	OR	OFF	2020/08/26 07:55
S242	42	form adj2 chatbot	US-PGPUB; USPAT	OR	OFF	2020/08/26 07:58
S248	126	(website or web or webpage) same chatbot near5 (click$3 or hover$3 or select$4 or interact$3 or manipulat$3)	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:26
S249	18	(website or web or webpage) same chatbot near5 (click$3 or hover$3 or select$4 or interact$3 or manipulat$3 or fill$3) near5 (user adj interface or UI or element or menu or form or input adj field or object)	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:28
S253	6	chatbot with (fill$up or fill$4) with (form or field)	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:35
S254	52	chatbot same (fill$up or fill$4 or complet$3) same (form or field)	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:36
S255	2	("20170293681" | "20170330077").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:48
S256	2	"20180143758".pn. "20040226002".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/26 09:58
S257	19	("20010037265" | "20140341369" | "20120016678" | "20170249592" | "20120016678" | "20170249592" | "20130275164" | "20110057029" | "20150286943" | "20120059896" | "20150286943" | "20130007648" | "20160112362" | "20130110518" | "20130268260" | "20140058967" | "20170242852" | "6366925" | "7558782" | "20150310446" | "20170011383" | "20180181922").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/26 10:18
S258	5	chatbot with (fill$up or fill$4 or complet$3) with (form or field) with (data or value or information)	US-PGPUB; USPAT	OR	OFF	2020/08/26 10:45

S259	2	chatbot with (activat$3 or interact$3) with (pointer or cursor or mouse)	US-PGPUB; USPAT	OR	OFF	2020/08/26 10:46
S260	29	chatbot near4 input$3 near4 data	US-PGPUB; USPAT	OR	OFF	2020/08/26 10:48
S261	6	("20140250195" | "20150161615" | "20180068365" | "20190034828" | "20190140986" | "20190149489").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/26 10:51
S263	7	("20080010259" | "20120016678" | "20120303273" | "20140331176" | "20150198452" | "20170103088" | "20190003849").PN. OR ("10749823").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/08/26 11:00
S264	3	"9213687".pn. "20140279050".pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/26 11:42
S265	1	"20160110502".pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2020/08/26 11:43
S271	3	"20190243889".pn. "20190220727".pn. "20140122056".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/26 12:09
S272	41	("20120120184" | "20140337048" | "20190311792" | "20040109470" | "20130167025" | "20130212501" | "20170000422" | "9591996" | "20140278605" | "6665647" | "8771206" | "10628635" | "20110126207" | "20120075464" | "20140171834" | "20160253890" | "20190259475" | "20120229634" | "20130127620" | "7233872" | "20190385749" | "20170337274" | "20190116212" | "20020196944" | "20140128691" | "20150109442" | "20090094285" | "20180189756" | "20050035862" | "20070238936" | "20120025989" | "20130237395" | "20130289449" | "20140243686" | "20160217264" | "20120179067" | "20140148733" | "20140232600" | "20160267327" | "20170147154" | "20190282130").PN.	US-PGPUB; USPAT	OR	OFF	2020/08/26 12:21

S273	1	16/358467.app.	US-PGPUB; USPAT	OR	OFF	2020/08/26 12:30
S274	2	"9947319".pn. "8630961".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/26 12:37
S275	2	"20190068527".pn. "20070172063".pn.	US-PGPUB; USPAT	OR	OFF	2020/08/26 13:32
S276	4	chatbot near3 (simulat$3 or imitat$3) near4 (hover$3 or click$3 or focus$3 or fill$4 or interact$4)	US-PGPUB; USPAT	OR	OFF	2020/08/26 14:44
S277	11	(chat near bot or chat$bot or chatbot) near3 (simulat$3 or imitat$3) near4 (hover$3 or click$3 or focus$3 or fill$4 or interact$4)	US-PGPUB; USPAT	OR	OFF	2020/08/26 14:44

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S281	49	((chat near bot or chat$bot or chatbot) interact$4 user adj interface).clm.	US-PGPUB; USPAT	AND	OFF	2020/08/26 15:57
S283	1	((chat near bot or chat$bot or chatbot) sequence automation).clm.	US-PGPUB; USPAT	AND	OFF	2020/08/26 16:32

8/26/2020 4:32:51 PM
C:\Users\mshiberou\Documents\EAST\Workspaces\16358467.wsp

Bibliographic Data

Application No: 16/358,467

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /MAHELET SHIBEROU/ (Examiner's Signature) | (Initials)

Title: Chat-Based Application Interface for Automation

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/19/2019	715	2171	1179.0130 (583-6.3 NP)
RULE			

APPLICANTS

WalkMe LTD., Tel Aviv, ISRAEL

INVENTORS

Nir NAHUM, Tel Aviv, ISRAEL

Shlomi SASSON, Givat Zeev, ISRAEL

CONTINUING DATA

This application is a CON of PCT/IL2018/051168 11/04/2018

PCT/IL2018/051168 has PRO of 62581714 11/05/2017

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

04/04/2019

STATE OR COUNTRY

ISRAEL

ADDRESS

Koffsky Schwalb LLC
349 Fifth Avenue
Suite 733
New York, NY 10016
UNITED STATES

FILING FEE RECEIVED

$7,320

Doc Code: IFEE PTOL/85B-EFS

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
16358467	19-Mar-2019	Nir NAHUM	1179.0130 (583-6.3 NP)	1560

TITLE OF INVENTION :

Chat-Based Application Interface for Automation

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Regular Undiscounted	Utility under 35 USC 111(a)	2171	753000	MAHELET SHIBEROU

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$1000	$0	$1000	09-Dec-2020	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
106928 Koffsky Schwalb LLC 349 Fifth Avenue Suite 733 New York NY 10016 UNITED STATES 646.553.1590 eofficeaction@appcoll.com	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

○ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

◉ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

WEB IFEE 1.0

Doc Code: IFEE PTOL/85B-EFS

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

☒ Issue Fee	☐ I authorize USPTO to apply my previously paid issue fee to the current fees due
☐ Publication Fee	☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____
☐ Advance Order - # of copies _____	☐ If **in addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number _____ . The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

1.

2.

3.

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
WALKME LTD.	Tel Aviv		israel	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Mark I. Koffsky/	**Date**	09-20-2020
Name	MARK I KOFFSKY	**Registration Number**	41906

WEB IFEE 1.0

Electronic Patent Application Fee Transmittal

Application Number:	16358467
Filing Date:	19-Mar-2019
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Filer:	MARK I KOFFSKY
Attorney Docket Number:	1179.0130 (583-6.3 NP)

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1000**

Electronic Acknowledgement Receipt	
EFS ID:	40608602
Application Number:	16358467
International Application Number:	
Confirmation Number:	1560
Title of Invention:	Chat-Based Application Interface for Automation
First Named Inventor/Applicant Name:	Nir NAHUM
Customer Number:	106928
Filer:	MARK I KOFFSKY
Filer Authorized By:	
Attorney Docket Number:	1179.0130 (583-6.3 NP)
Receipt Date:	20-SEP-2020
Filing Date:	19-MAR-2019
Time Stamp:	23:06:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1000
RAM confirmation Number	E20209JN06500747
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	45555 d5af1a7b8d108fcc245f7d55f9ba0b83ec4e8370	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32057 8f37e1b09637b1b63948c06c01a7e0fe4f7a7ab3	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	77612		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/358,467	10/27/2020	10819664	1179.0130 (583-6.3 NP)	1560

106928 7590 10/07/2020

Koffsky Schwalb LLC
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New York, NY 10016

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Nir NAHUM, Tel Aviv, ISRAEL;
WalkMe LTD., Tel Aviv, ISRAEL;
Shlomi SASSON, Givat Zeev, ISRAEL;

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IR103 (Rev. 10/09)