

Patent No. 11,258,732  
Petition For *Inter Partes* Review

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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Whatfix Inc.  
Petitioner,

v.

WalkMe Ltd.  
Patent Owner.

Patent No. 11,258,732

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*Inter Partes* Review No. IPR2023-01379

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**PETITION FOR *INTER PARTES* REVIEW  
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *et seq.***

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Petitioner Whatfix Inc. petitions for *inter partes* review of claims 1-6, 9-16, and 18-21 (“challenged claims”) of U.S. Patent No. 11,258,732 (“the ’732 patent” (EX1001)) in accordance with 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100 *et seq.*

## **I. INTRODUCTION**

The ’732 patent’s claims are directed to a method and system for defining an automation process. The system first engages in a conversation with a user using a natural language interface to collect information, and invokes an automation process in response. For example, the ’732’s system comprises a chatbot that collects information for buying stocks, and then automatically fills out the online stock purchase form using the collected information. (EX1001, 5:14-20.)

Defining an automation process where a chatbot collects information and then the automation process is performed using the collected information was well known before the ’732 patent’s 2017 earliest priority date. Symons discloses a chatbot that engages in a conversation with a user, collects the user’s name, job role, and email address, and then performs an automation process that creates an email signature using the collected information. Allen discloses a chatbot that collects book information from the user and then performs an automation process that buys a book online using the collected information. Krishnan discloses a chatbot, and Radhakrishnan discloses a robotic process automation bot that

performs an automation process. Like the '732 patent, the automation processes in Symons, Allen, and Radhakrishnan simulate interactions with a displayed user interface (UI).

Petitioner submits that the challenged claims are unpatentable for the reasons set forth in this Petition. This Petition is supported by the Declaration of Dr. Homayoon Beigi (EX1003).

## **II. BACKGROUND OF NATURAL LANGUAGE PROCESSING AND PROCESS AUTOMATION**

Natural language processing (NLP) refers to the interaction between a computer and a human using human “natural” language, where human users are able to converse with the chatbots using every day, natural language (instead of using programming code). (EX1003, ¶17.) For example, some businesses have replaced customer service agents with chatbots. (*Id.*; EX1026, 2; EX1027.)

Process automation refers to automation of certain tasks. (EX1003, ¶18.) For example, transactional, repetitive tasks are automated using robotic process automation (RPA) bots. (*Id.*) RPA bots are being used to process insurance claims, conduct credit checks, etc. (EX1026, 2; EX1003, ¶19.)

Both NLP and process automation offer lower operational costs, high volume processing, and faster turnaround time. (EX1030, 2; EX1003, ¶20.) In 2017, a chatbot could have an intelligent conversation with a human, but may only

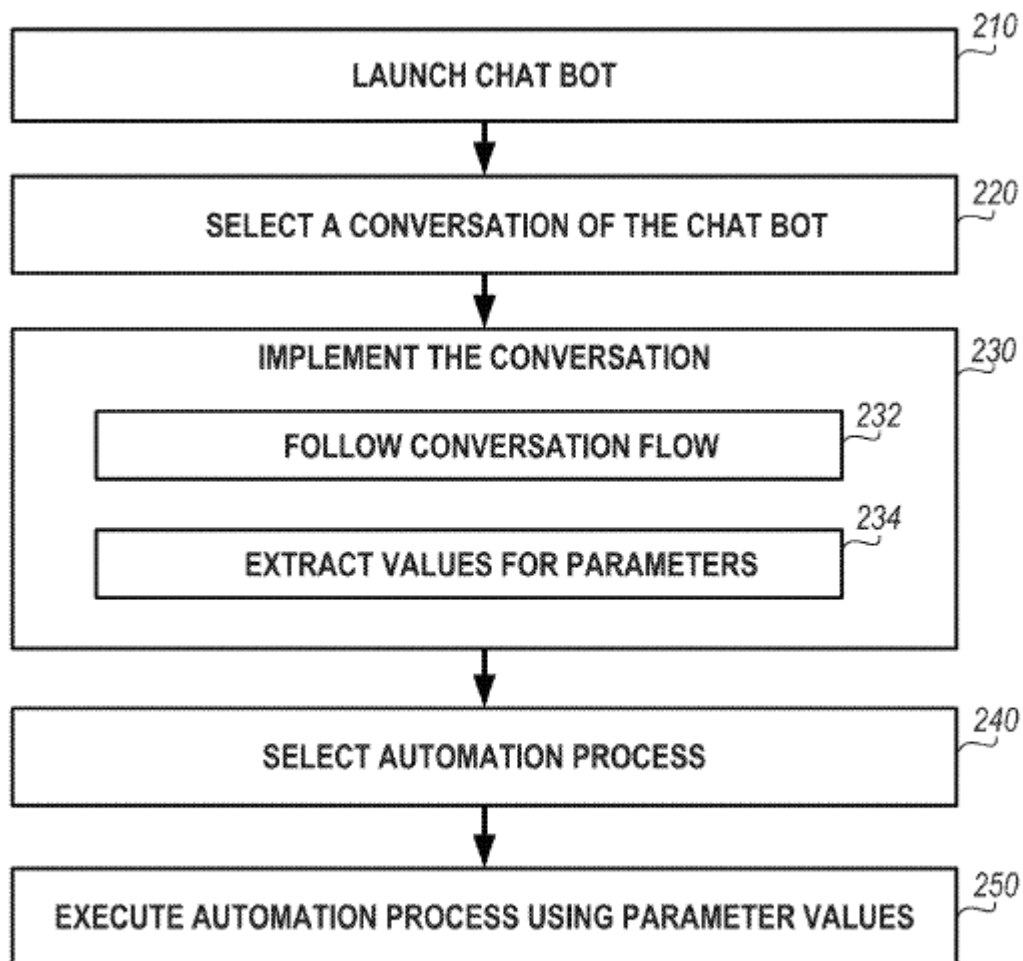
have been able to provide, *e.g.*, answers from a search engine, while an RPA bot may have been able to automatically perform more complex tasks that require, *e.g.*, analysis or executing actions. (EX1003, ¶20.) Combining the two not only exploited the benefits that both had to offer, but also expanded the capabilities that each may not have had alone. (*Id.*)

The idea of combining NLP and process automation and the associated benefits were known by at least November 5, 2017 (earliest priority date for the '664 patent). (EX1030, 6-7; EX1031, 4; EX1003, ¶21.) “[T]his harmonious alliance [of a chatbot combined with an RPA bot] is revolutionizing business operations, enhancing customer experiences, and driving efficiency gains.” (EX1026, 2.) “[E]ndless possibilities [] arise when chatbots and RPA come together.” (*Id.*)

### **III. SUMMARY OF THE '732 PATENT**

The '732 patent discloses “[a] method, apparatus and product for defining an automation process to be invoked in response to a conversation of a user with a natural language interface.” (EX1001, Abstract; EX1003, ¶23.) The chatbot is an allegedly user-friendly way to converse with a user for, *e.g.*, collecting information from the user, which is associated with the automation process. (*Id.*) The automation process utilizes a UI of the computer program to input data or execute a functionality. (*Id.*)

Fig. 2A (below) shows a flowchart involving the defined automation process. (EX1003, ¶24.) The chatbot is launched (step 210), a conversation between the chatbot and user is selected and implemented (steps 220 and 230). (EX1001, 10:23-57.) Values are extracted (collected) from the conversation (step 234), and then an automation process is selected and executed (steps 240 and 250) using the collected values. (EX1001, 10:58-11:26.)

**FIG. 2A**

**A. Effective Filing Date**

The '732 patent was filed on September 21, 2020, issued on February 22, 2022, and claims priority to a provisional application filed on November 5, 2017. For purposes of this Petition only, Petitioner relies on November 5, 2017 as the earliest effective filing date.

**B. Prosecution History**

The Examiner issued only one Office Action during prosecution of the '732 patent, rejecting the claims over Balasubramanian (EX1019) and Periorellis (EX1020). (EX1002, 85-92.)

Applicant amended and argued that the prior art does invoke an automation process or define one. (EX1002, 115.) Applicant further argued that prior art does not teach using values obtained from the user for defining the automation process. (EX1002, 116.) The Examiner responded with proposed amendments to narrow the automation process to one that utilizes a displayed UI, Applicant agreed, and a Notice of Allowance followed. (EX1002, 134, 141, 146.)

**C. Level of Ordinary Skill in the Art**

A person of ordinary skill in the art (POSITA) in the field of the '732 patent in 2017 would have bachelor's degree in engineering or computer science and two years of experience working on NLP or automation processes. Alternatively, a POSITA would have five to six years of experience working on NLP or

automation processes. (EX1003, ¶¶45-47.)

#### IV. CLAIM CONSTRUCTION

For purposes of this Petition only, Petitioner does not believe any terms require a formal construction. Each of the terms carries its “ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question” at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (citation omitted); (EX1003, ¶¶48-49.)

#### V. PRECISE REASONS FOR RELIEF REQUESTED

Pursuant to 37 C.F.R. § 42.104(b), Petitioner requests cancellation of the challenged claims based on the following references (EX1003, ¶¶25-31, 50-56):

| Prior Art Reference                                                                                                              | Abbreviation (Exhibit No.) |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| S. Symons, “When Chatbots meet RPA bots,” Medium, (2017)                                                                         | “Symons Article” (EX1004)  |
| English Translation of Screenshots of S. Symons, “RPA meets chatbot: Automatically generate e-mail signature,” Vimeo, (2017)     | “Symons Video” (EX1006)    |
| D. Williams et al., “Using artificial intelligence to optimize the value of robotic process automation,” IBM White paper, (2017) | “Williams” (EX1011)        |
| U.S. Patent No. 7,983,997                                                                                                        | “Allen” (EX1014)           |
| U.S. Pub. No. 2017/0250930                                                                                                       | “Ben-Itzhak” (EX1034)      |

|                            |                          |
|----------------------------|--------------------------|
| U.S. Patent No. 10,839,798 | “Krishnan” (EX1016)      |
| U.S. Patent No. 10,503,627 | “Radhakrishnan” (EX1018) |

The statutory grounds for the challenge of each claim are set forth below.

All statutory citations are AIA.

| Ground | 35 U.S.C. § | Claim(s)          | Prior Art Reference(s)                           |
|--------|-------------|-------------------|--------------------------------------------------|
| 1      | 103         | 1-4, 9-14, 18, 19 | Symons (Article and Video), Williams             |
| 2      | 103         | 6, 16, 21         | Symons (Article and Video), Williams, Ben-Itzhak |
| 3      | 103         | 1-5, 9-15, 18-20  | Allen                                            |
| 4      | 103         | 6, 16, 21         | Allen, Ben-Itzhak                                |
| 5      | 103         | 1-5, 9-15, 18-20  | Krishnan, Radhakrishnan                          |

Below, Petitioner discusses why the challenged claims are unpatentable under the statutory grounds raised, including how and where the prior art satisfies each element of each challenged claim, as required by 37 C.F.R. § 42.104(b)(4). Petitioner’s showing establishes a reasonable likelihood that it will prevail on each ground of unpatentability to each challenged claim.

**A. Ground 1 – Symons and Williams Renders Obvious Claims 1-4, 9-14, 18, and 19**

**1. Summary of Symons**

The Symons Article and the Symons Video (collectively “Symons”) were

publicly available on Medium and Vimeo, respectively, by at least October 19, 2017. (EX1008.) The Medium page indicates that the Symons Article was posted on October 19, 2017. (EX1004; EX1003, ¶58.) The text of the Symons Article accords with the contents of the Symons Video. (EX1004; EX1006; EX1008; EX1003, ¶59.)

The Symons Article indicates that it was posted by Senne Symons, an employee of RoboRana, who verified the authenticity of the Symons Article and Symons Video and verified public availability by at least October 19, 2017. (EX1008.) Mr. Symons was one of the names appearing in the Symons Video. (EX1006, 18.)

The Baetens Article includes a link to the Symons Article and a link to the Symons Video. (EX1009.) The Baetens Article was publicly available on Medium by at least October 20, 2017. (EX1010.) The Medium page indicates that the Baetens Article was posted on October 20, 2017. (EX1009.) The text of the Baetens Article accords with the contents of the Symons Article and the Symons Video. (EX1009; EX1006; EX1010; EX1003, ¶60.)

The Baetens Article indicates that it was posted by Wouter Baetens, a previous employee of Arinti, who verified the authenticity of the Baetens Article and the Symons Video and its public availability by at least October 20, 2017. (EX1010.) Mr. Symons and Mr. Baetens verified that they worked together on the

development of the chatbot-RPA bot system, made publicly available by at least October 20, 2017, discussed in the Symons Article, Symons Video, and Baetens Article. (EX1008; EX1010.)

Medium and Vimeo are mainstream Internet-based platforms that companies like RoboRana and Arinti use to disseminate information about products to interested members of the public, including POSITAs. (EX1003, ¶57.) These platforms were well-known, public (*e.g.*, no access restrictions), searchable, and intended to reach a wide audience. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 18 (PTAB Dec. 20, 2019) (precedential); (EX1003, ¶57). Given that Medium is known in the industry for spreading ideas and discussing technologies of interest, a POSITA would have readily located the information that RoboRana and Arinti posted on these platforms with reasonable diligence. (EX1003, ¶57.) Videos can constitute printed publications in IPR proceedings under § 311. *London Luxury LLC v. E&E Co., Ltd.*, PGR20201-00083, Paper 10 at \*18-19 (PTAB Nov. 15, 2021).

Based on this evidence taken as a whole, the Symons Article (which includes the Symons Video) was publicly available by at least October 20, 2017 and is prior art to the '732 patent at least under § 102(a)(1) as a printed publication or as being otherwise available to the public. The Examiner never found, and Applicant never cited, Symons during prosecution.

Symons discloses a computer system and program that “automate the process of creating an email signature.” (EX1004, 2; EX1003, ¶61.) “First, the chatbot collects all the information in a friendly, interactive manner. This information gets passed on to the RPA robot, which will then automatically generate the signature, save it, and email it back to the requester.” (EX1004, 2.) As explained, an “RPA bot can mimic the users actions and thus enables organizations to automate repetitive tasks.” (EX1004, 2.)

The chatbot asks a series of questions to the user to collect the user information. (EX1006, 2-6; EX1003, ¶61.) The chatbot then triggers the RPA bot, which automatically inputs the collected information in input fields to generate the email signature, and clicks on UI buttons to email the signature to the user. (EX1006, 10-17; EX1003, ¶62.)

## **2. Summary of Williams**

Williams is a white paper that was publicly available on IBM’s website by at least September 2017. (EX1012.) The September 2017 date time stamps on the first and last pages of the document means that it was freely available to the public no later than that date. (EX1003, ¶63.) One of the authors is Ira Allen, an employee of IBM during that time, who verified the authenticity of Williams and verified that Williams was made publicly available on IBM’s website by at least September 16, 2017. (EX1012.)

White papers are often made available on a company's website to disseminate the information to interested members of the public, including POSITAs. (EX1003, ¶¶64.) IBM's website was well-known, public (*e.g.*, no access restrictions), searchable, and intended to reach a wide audience. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 18 (PTAB Dec. 20, 2019) (precedential); (EX1003, ¶¶64.) IBM is a known trailblazer in the field and publishes white papers to disseminate, promote, or highlight information to POSITAs about its products. A POSITA would have readily located Williams on IBM's website with reasonable diligence. (EX1003, ¶¶64.)

Williams was also publicly available on IT World Canada's website by at least September 16, 2017. (EX1012.) The IT World Canada post indicates that Williams was posted on September 16, 2017. (EX1013.) Ira Allen verified the authenticity of the post. (EX1012.) Mr. Allen also verified that the post was made publicly available by at least September 16, 2017.

IT World Canada is an online website that was known, public (*e.g.*, no access restrictions), searchable, and intended to reach a wide audience. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 18 (PTAB Dec. 20, 2019) (precedential); (EX1003, ¶¶66). Companies like IBM use IT World Canada to disseminate information about products to interested members of the public, including POSITAs. (EX1003, ¶¶66.) A POSITA would have readily located

Williams on this website with reasonable diligence. (EX1003, ¶67.)

Based on this evidence taken as a whole, Williams was publicly available by at least September 16, 2017 and is prior art to the '732 patent at least under § 102(a)(1) as a printed publication or as being otherwise available to the public. (EX1011.) The Examiner never found, and Applicant never cited, Williams during prosecution.

Williams discloses a system and method that combines artificial intelligence and RPA. (EX1011, 2; EX1003, ¶68.) As explained, RPA offers a significant reduction in operational costs, but can have deployment challenges. (EX1011, 2; EX1003, ¶68.) Williams proposes using cognitive computing to address the challenges of RPA. (*Id.*)

Williams' intelligent automation system comprises chatbots that engage in natural language dialog with a user to determine the user's intent and collects information from the user. (EX1011, 3; EX1003, ¶69.) The chatbot then triggers an RPA bot, passes the information to the RPA bot, and the RPA bot completes the request. (EX1011, 3; EX1003, ¶70.)

Fig. 1 (below) shows Williams' intelligent automation continuum. A robot is taught to drive applications like a human does through a GUI. (EX1011, Fig. 1; EX1003, ¶71.) The robot conducts complex calculations, performs actions, and triggers downstream activities and/or interact with humans using, *e.g.*, NLP. (*Id.*)

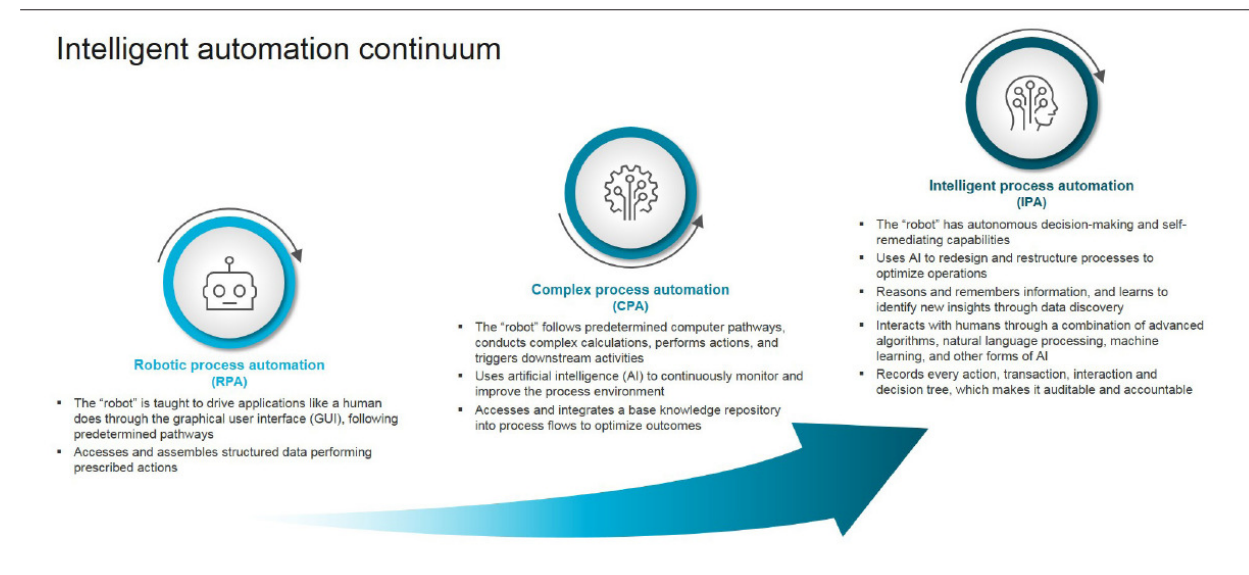


Figure 1. This diagram shows IBM's intelligent automation continuum.

### 3. Claim 1

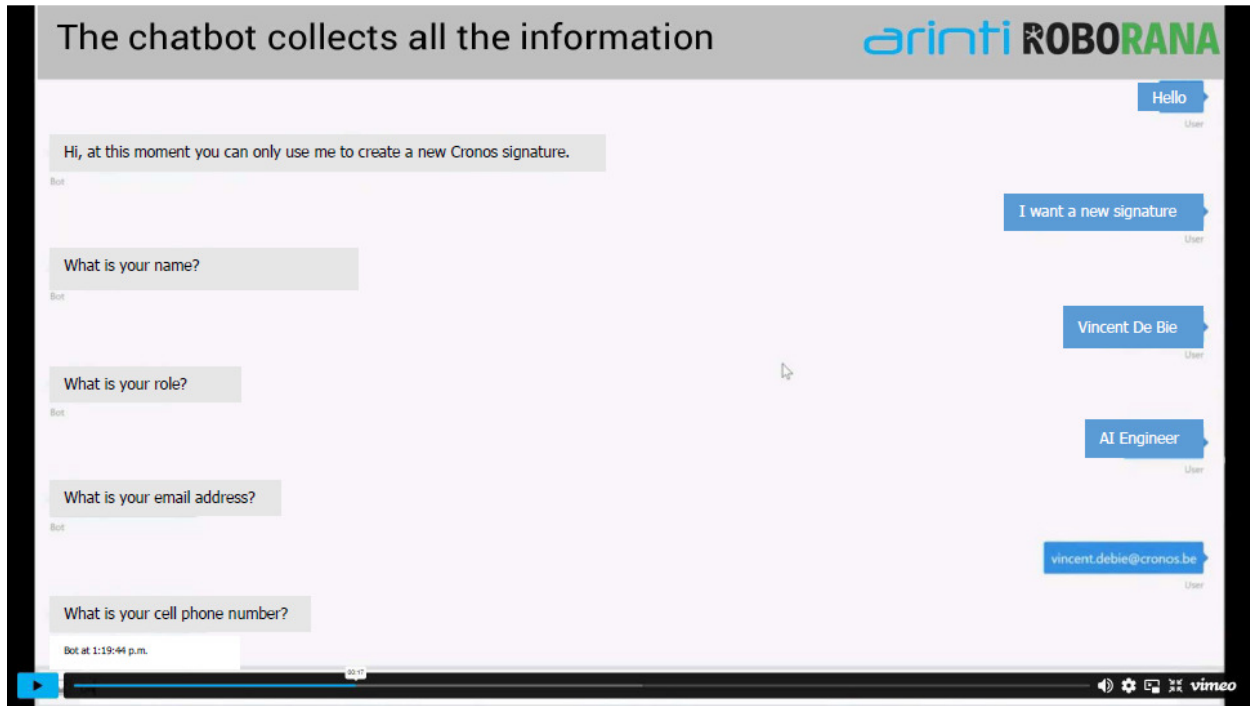
- a. **Preamble: "A method for defining an automation process, wherein the automation process is configured to be invoked in response to a conversation of a user with a natural language interface, the method comprising:"**

To the extent the preamble is limiting (which Petitioner does not concede), Symons discloses the preamble.

Symons discloses a method that "automate[s] the process of creating an email signature." (EX1004, 2; EX1003, ¶72.) "First, the chatbot collects all the necessary information in a *friendly, interactive manner*." (EX1004, 2 (emphasis added).) The chatbot engages in a conversation, where "[t]he chatbot collects all the information." (EX1006, 5; EX1003, ¶¶73-75.)

The screen below shows the conversation of the user with a natural language

interface. (EX1003, ¶76.) The questions from the chatbot (“What is your name?,” “What is your role?,” “What is your email address?”) and responses from the user (“Vincent De Bie,” “Engineer,” “vincent.debie@cronos.be”) resemble language spoken by a human. (EX1006, 5; EX1003, ¶76.)



“This information gets passed on to the RPA robot, which will then *automatically generate* the signature, save it, and email it back to the requester.” (EX1004, 2 (emphasis added).) The automation process is invoked in response to the conversation. (EX1003, ¶77.)

In order for Symons’ RPA bot to be able to automatically generate an email signature, the automation process and its functionality must have been defined. (EX1003, ¶78.)

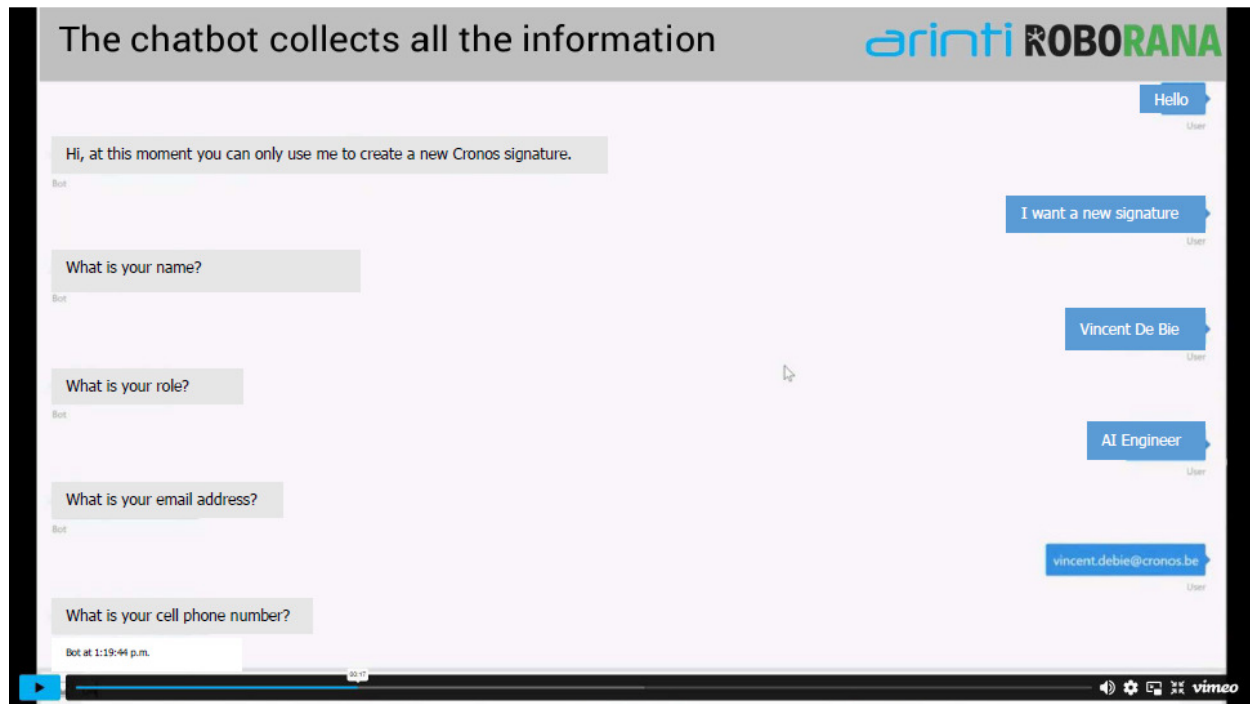
To the extent that Symons does not disclose defining an automation process, it would have been obvious. Williams discloses a system and method that combines artificial intelligence and RPA. (EX1011, 2; EX1003, ¶79.) Williams' system "allows business process owners to draft, create and amend rules and policy changes outside of the RPA product using normal conversation text. The robot then interacts with WPML to look up and apply rules related to automated process." (EX1011, 4.)

It would have been obvious to combine Symons and Williams. RPA robots are designed to execute multiple automation processes, so combining Symons and Williams, both of which disclose chatbots-RPA bot systems, is a natural extension of exploiting the full capabilities of RPA. (EX1003, ¶80.) The Symons-William combination results in a chatbot-RPA bot system capable of handling a user request for automated generation of an email signature along with other requests, such as automated generation of an electronic letterhead or an electronic invoice. (*Id.*, ¶81.) The ability to handle multiple requests and define such automation processes expands the capabilities and flexibilities of the chatbot-RPA bot without requiring much effort and with a reasonable expectation of success. (*Id.*)

- b. 1[a]: "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 associated with the automation process;”**

The conversation between Symon’s chatbot and the user is implemented by a natural language interface (below). (EX1003, ¶82.)



The conversation comprises the chatbot asking questions and then obtaining from the user values. (EX1003, ¶83.) For example, the chatbot first asks: “What is your name?,” and the user inputs “Vincent De Bie.” (EX1006, 5; EX1003, ¶83.) The chatbot continues with other questions (“What is your role?,” “What is your email address?”), and the user inputs values (“Engineer”; “vincent.debie@cronos.be”). (*Id.*)

The values are to parameters. (EX1003, ¶84.) “Vincent De Bie,” “Engineer,” and “vincent.debie@cronos.be” are values to the name, job role, and

email parameters. (*Id.*)

The values are used (associated with) in the automation process: “[f]irst, the chatbot collects all the necessary information in a friendly, interactive manner.

This information gets passed on to the RPA robot, which will then automatically generate the signature, save it, and email it back to the requester.” (EX1004, 2.)

“The chatbot triggers the RPA bot.” (EX1006, 10; EX1003, ¶85.)

Symons’ “RPA bot automatically opens browser and enters details.” (EX1006, 11.) The RPA bot enters “Vincent De Bie,” “Engineer,” and “vincent.debie@cronos.be” in the name, job role, and email input fields as part of the email signature generation automation process (annotated below). (EX1006, 10; EX1003, ¶86.) Value(s) to parameter(s) are associated with the automation process. (EX1003, ¶86.)

one or more  
values to one  
or more  
parameters  
associated  
with the  
automation  
process

The RPA bot automatically opens browser and enters details **arinti ROBORANI**

**CRONOS EMAIL SIGNATURE GENERATOR**

Entity:

Name:

Role:

Email:

Phone:

Mobile:

Fax:

Social Media

Logo:  

Link 1

Text:

URL:

Preview

 Vincent De Bie  
AI Engineer  
M 0412345678  
vincent.debie@cronos.be  
www.cronos.be  
Veldkant 33A - 2550 Kortrijk

Cronos recognised as 2016 Microsoft Country Partner of the Year

In order for Symons' chatbot to be able to engage in a conversation with the user, the chatbot and its functionality (the conversation it engages in) must have been defined. (*Id.*, ¶87.) To the extent that Symons does not disclose defining a conversation, it would have been obvious because then a chatbot would interact better with the user when the conversation (*e.g.*, which questions to ask) is defined. (*Id.*, ¶88.)

**c. 1[b]: “associating the conversation with the automation process,”**

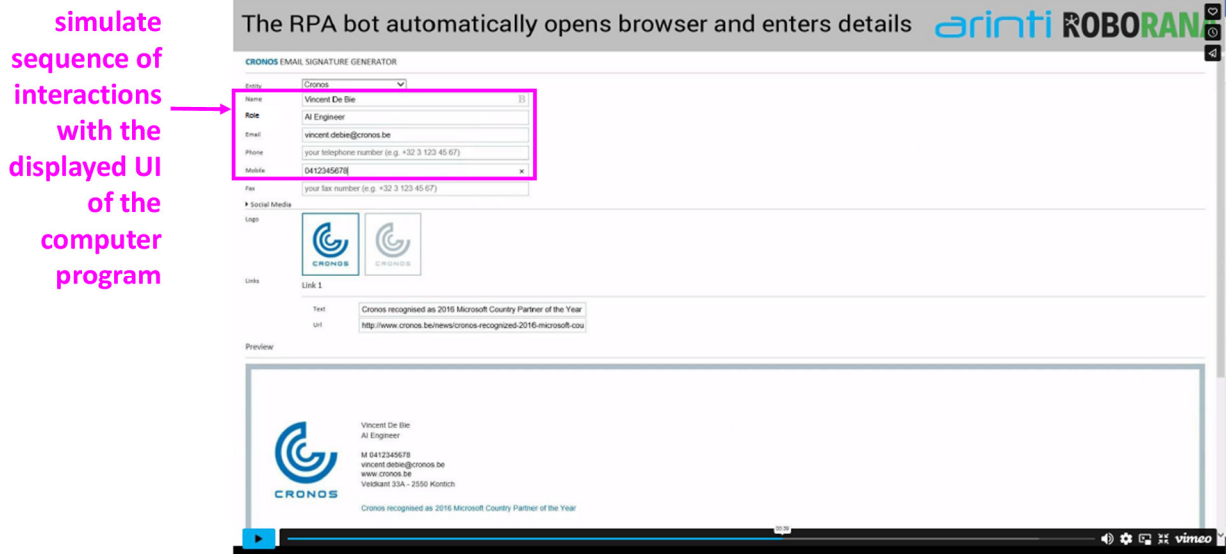
The values obtained from the user during the conversation implemented by the natural language interface are used in the automation process, so Symons discloses associating the conversation with the automation process. (*See* element 1[a]; EX1003, ¶89.)

**d. 1[c]: “wherein the automation process is configured to utilize a displayed user interface of a computer program to simulate sequence of interactions with the displayed user interface of the computer program and execute a functionality of the computer program, wherein the automation process is a parameterized automation process depending on the one or more parameters; and”**

As explained, an “*RPA bot can mimic [(simulate)] the users actions* and thus enables organizations to automate repetitive tasks.” (EX1004, 2 (emphasis added); EX1003, ¶90.) Symons' automation process utilizes a displayed UI of a computer program to simulate a sequence of interactions (annotated below).

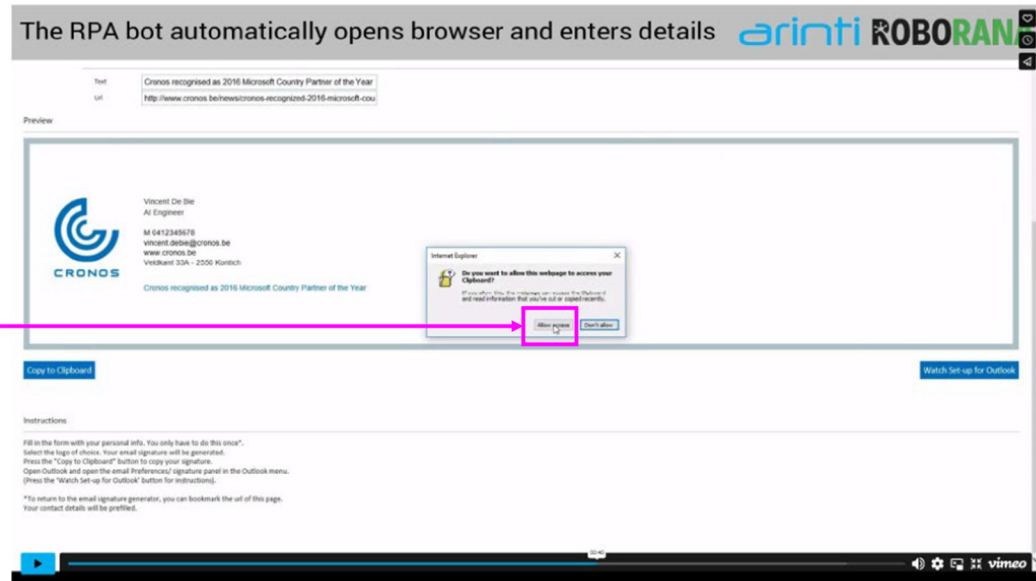
(EX1003, ¶¶90.) “The RPA bot automatically opens browser and enters details.”

(EX1006, 11.) The RPA bot enters the user’s name “Vincent De Bie” and “Engineer” in the name and job role input fields of the displayed UI (annotated below). (*Id.*; EX1003, ¶¶90.)



The RPA bot also simulates user interactions via GUI button clicks (annotated below). (EX1006, 13; EX1003, ¶¶91.) The GUI button click is used to execute a functionality of the computer program (annotated below): copying the email signature onto the clipboard. (EX1006, 13; EX1003, ¶¶91.)

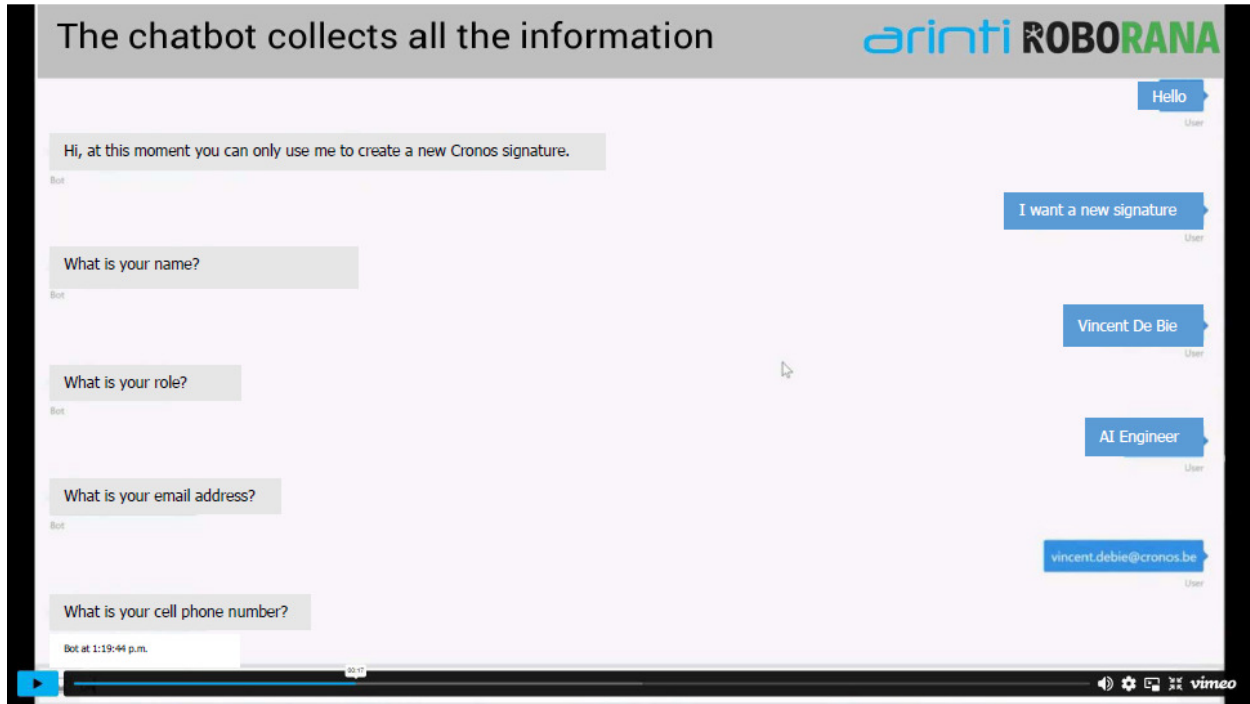
simulate  
sequence of  
interactions  
with the  
displayed UI  
of the  
computer  
program



After the chatbot collects the values for the parameters, it utilizes the values in the automation process of creating an email signature. (See element 1[a]; (EX1003, ¶¶92.) Symon’s automation process is a parameterized automation process depending on the parameter(s). (Id.)

- e. **1[d]: “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,”**

Symons’ screen (below) shows that it publishes the conversation, accessible to a user via the natural language interface. (EX1003, ¶¶93.)



The chatbot asks questions, and the user responds, enabling the user to interact with the natural language interface in accordance with the conversation. (EX1003, ¶¶94.) For example, the chatbot first asks: “What is your name?”), and the user inputs “Vincent De Bie.” (EX1006, 5; EX1003, ¶¶94.) The chatbot continues with other questions (“What is your role?;” “What is your email address?”), and the user inputs values (“Engineer”; “vincent.debie@cronos.be”). (*Id.*)

- f. **1[e]: “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.”**

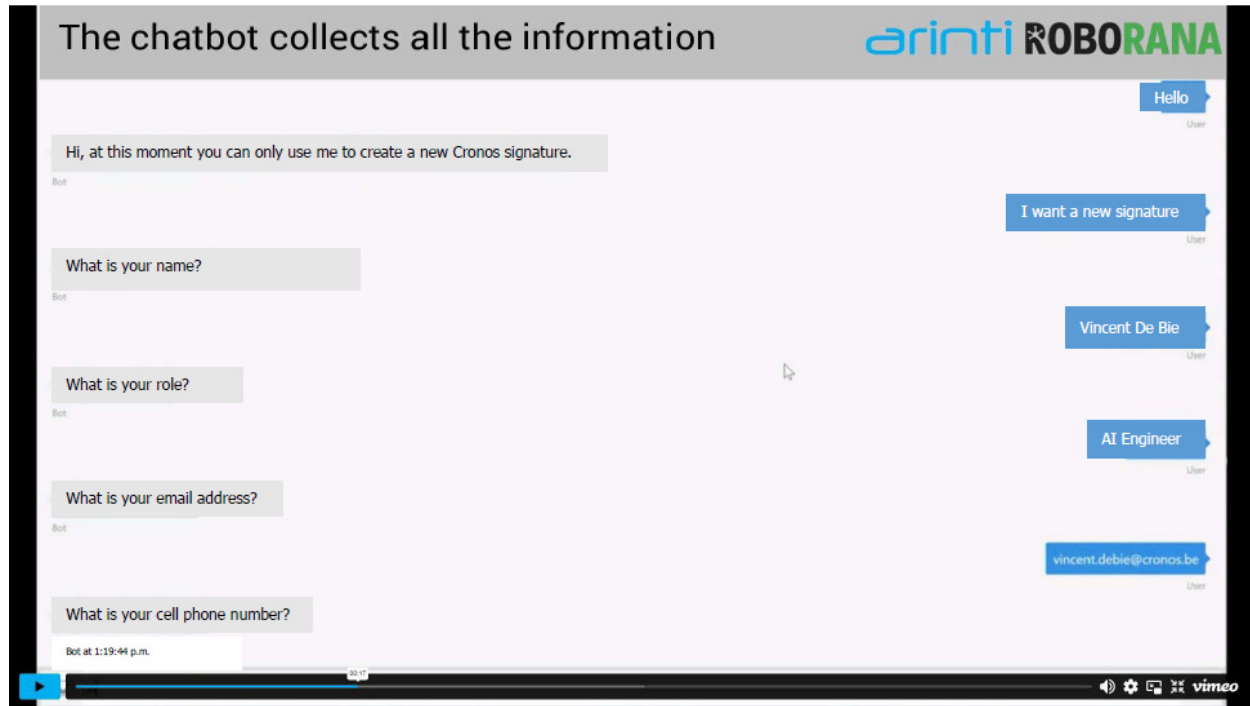
Symons’ “chatbot triggers the RPA bot,” which performs the parameterized

automation process. (EX1006, 10; *see* element 1[c]; EX1003, ¶¶95.) The parameterized automation process is invoked automatically by the natural language interface. (*Id.*) The automation process uses the values (“Vincent De Bie”; “Engineer”; “vincent.debie@cronos.be”) provided by the user to the natural language interface for the parameters (name, job role, email address). (*See* element 1[a]; EX1003, ¶¶96.)

4. **Claim 2: “The method of claim 1, 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.”**

Symons discloses a conversation flow that defines an order between conversation elements. (EX1003, ¶¶97.) The chatbot asks questions (below). (*See* element 1[a]; EX1003, ¶¶97-98.) An action for the automation process is associated with each chatbot question and user answer. (*Id.*) For example, an action of inputting the user’s name in the name input field is associated with the name question and answer, an action of inputting the user’s job role in the job role input field is associated with the job-title question and answer, and an action of inputting the user’s email address in the name input field is associated with the email-address question and answer. (*Id.*) Symons discloses the conversation elements comprise at least a question element and an action element, where the

action element is associated with automation process. (*Id.*)



To the extent that Symons does not disclose determining a conversation flow, it would have been obvious in view of Williams. (EX1003, ¶¶99.) Williams discloses a method comprising “chatbots or digital assistants [] deployed within helpdesk functions to interact with an end user, replacing the human agent in a traditional call center. These chatbots can engage in natural language dialog with the caller and *discern, through a series of interactions, the nature of the call and then capture information required to further handle the request.* The chatbot will then trigger a robot, passing the required information to the robot to complete the request.” (EX1011, 3 (emphasis added).)

A POSITA would have been motivated to have a chatbot that discerns the

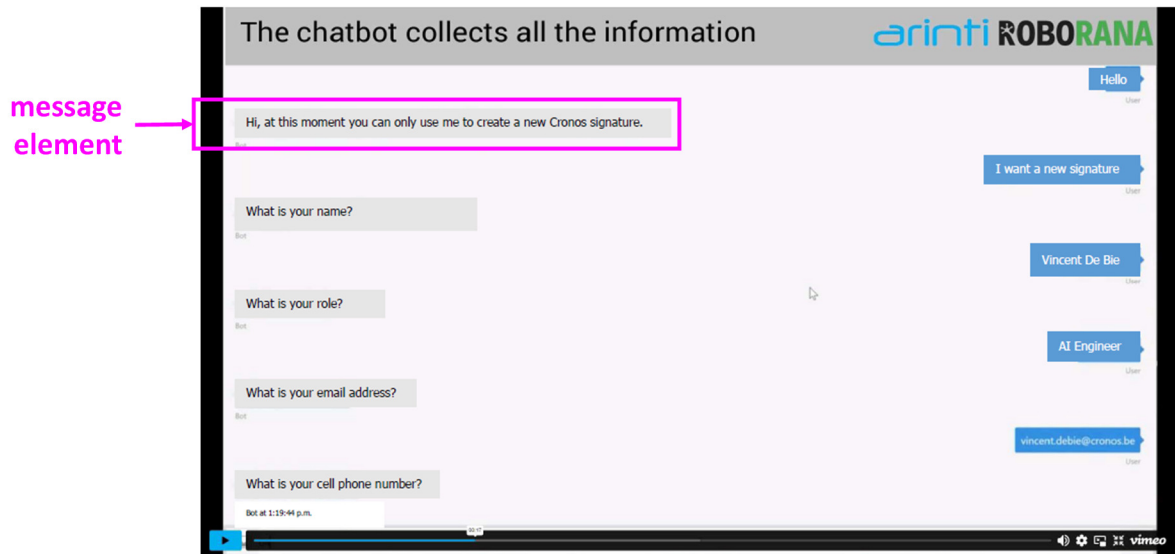
user’s intent (the nature of the call) so that the RPA can handle multiple requests, improving the costs and time for, *e.g.*, operations of transactional activities. (EX1003, ¶100.) RPA robots are designed to execute multiple automation processes, so combining Symons and Williams, both of which disclose chatbots-RPA bot systems, is a natural extension of exploiting the full capabilities of RPA. (*Id.*) As one example, “[u]sing chatbots, we have replaced the call center agent and now use a virtual agent to interact directly with the supplier. Through several scripted questions, the virtual agent can surmise that the supplier is asking for status on their payment and, thus, trigger an RPA robot . . . .” (EX1011, 3; EX1003, ¶101.) The Symons-Williams combination results in a chatbot-RPA bot system capable of handling a user request for automatic generation of an email signature along with other requests, such as automatic generation of an electronic letterhead or an electronic invoice. (EX1003, ¶¶102-103.) The ability to handle multiple requests expands the capabilities and flexibilities of the chatbot-RPA bot without requiring much effort and with a reasonable expectation of success. (*Id.*)

**5. Claim 3: “The method of claim 2, wherein the conversation elements comprise at least one of: a message element and a condition element.”**

Claim 3 requires “at least one of: a message element and a condition element,” which means having one satisfies the claim. (EX1003, ¶104.)

Symons’ conversation elements comprise a message element (“Hi, at this

moment you can only use me to create a new Cronos signature” (annotated below). (*Id.*, ¶105.) Also, Williams states, “They can monitor and survey system and business processes and initiate robotic work dispatching to perform actions based upon observations and conditional logic.”



6. **Claim 4: “The method of claim 2, 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.”**

Symons is silent on whether its conversation elements comprise a second action element associated with a second automation process. (EX1003, ¶106.) However, Williams discloses a method comprising “chatbots or digital assistants [] deployed within helpdesk functions to interact with an end user, replacing the human agent in a traditional call center. These chatbots can engage in natural

language dialog with the caller and *discern, through a series of interactions, the nature of the call and then capture information required to further handle the request*. The chatbot will then trigger a robot, passing the required information to the robot to complete the request.” (EX1011, 3 (emphasis added); EX1003, ¶106.)

Discerning the nature of the call means there are multiple user requests, which requires the chatbot (natural language interface) selectively invoke different automation processes (an automation process or a second automation process) based on the user request (interaction with the user). (EX1003, ¶107.) For example, one request may be to handle payment transactions, and another request to handle healthcare record transactions. (*Id.*, ¶108.) Based on the discerned nature of the call, the chatbot triggers an automation process for automatically setting up a payment for the payment transaction, or a second automation process for automatically filling in an electronic medical record for the healthcare record transaction. (*Id.*) One action element would be associated with the (first) automation process, and a second action element would be associated with the second automation process. (*Id.*)

It would have been obvious to combine Symons and Williams. (*See* claim 2; EX1003, ¶109.)

## 7. Claim 9:

- a. 9[a]: “The method of claim 1, wherein the automation process is configured to execute a new functionality of the computer program, wherein the new functionality is defined based on the values to the one or more parameters,”

Williams discusses one of the technical limitations with the prior art being the “[a]bility to accommodate for changing rules or business logic with relative ease.” (EX1011, 3.) Williams’ system “allows business process owners to *draft, create and amend rules and policy changes* outside of the RPA product.” (*Id.*, 4 (emphasis added).) The “*‘robot’ is taught* to drive applications like a human does through the *graphical user interface (GUI)*” (*Id.*, Fig. 1 (annotated below)). In other words, the automation process executes a new functionality of the computer program. (*Id.*, 4; EX1003, ¶110.)

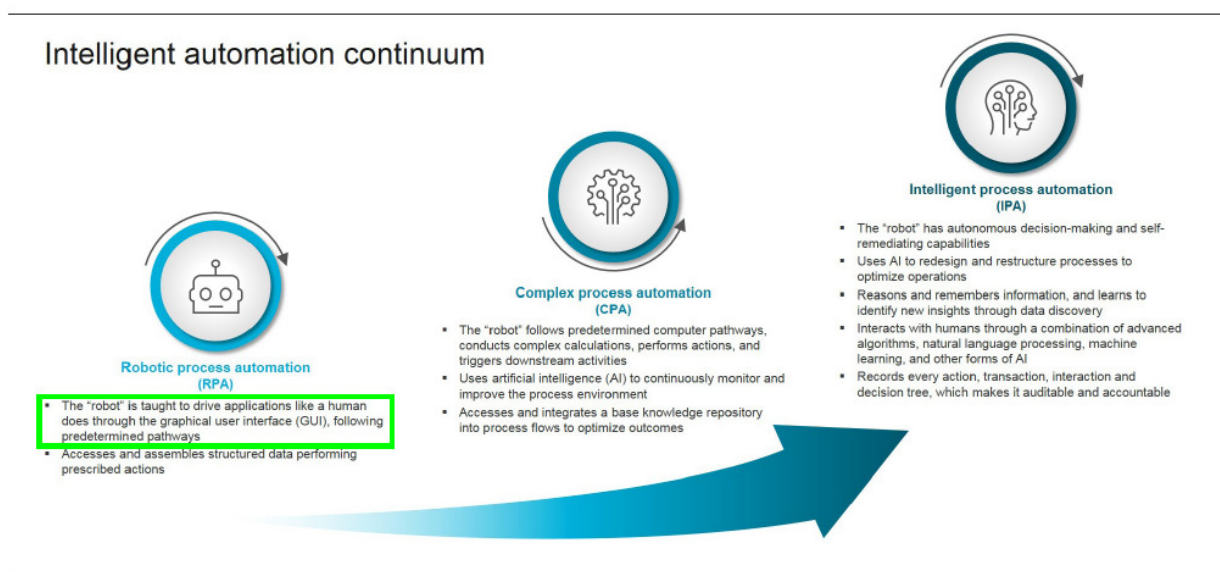


Figure 1. This diagram shows IBM's intelligent automation continuum.

The conversation obtains from the user the values to the parameters. (See

element 1[a]; EX1003, ¶111.) Since the new functionality is defined “using normal conversation text,” then the new functionality is defined based on the values to the parameters. (EX1011, 4; EX1003, ¶111.)

**b. 9[b]: “without relying on a dedicated Application Programming Interface (API) of the computer program.”**

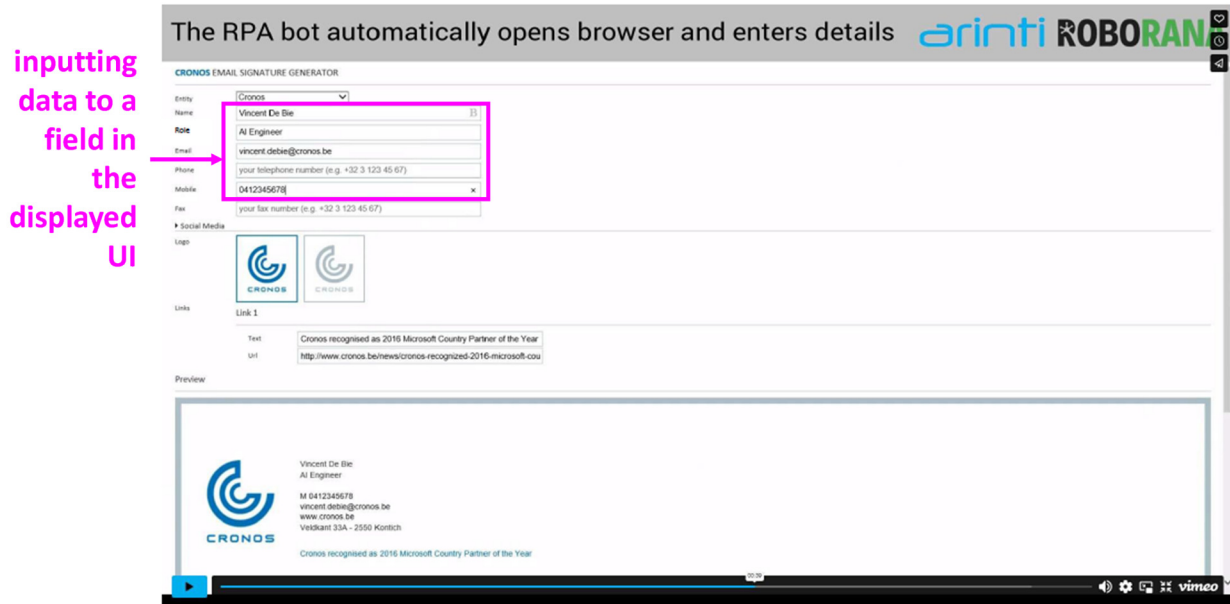
Symons’ executing is performed without relying on a dedicated API of the computer program. (EX1003, ¶¶112-113.) To the extent that Symons does not disclose without relying on a dedicated API, Williams discloses “RPA enlists software robots to perform complex, nested routines that cut across multiple applications and *interact with these systems without the need to build complex and rigid system-to-system interfaces. Although robots can be configured to interface directly with applications through pre-existing application programming interfaces (APIs), these platforms are equally able to work through systems’ graphical interfaces, including web browsers and Citrix terminal sessions.*” (EX1011, 2 (emphasis added).) Williams recommends not relying on a dedicated API of the computer program because it is “an attractive way to drive operational cost reduction.” (EX1003, ¶113.) Without relying on a dedicated API, “robotic automation can be deployed in a relatively short period of time measured in days and weeks, instead of more heavy, traditional IT programming efforts that can take months and require a much larger upfront

investment.” (*Id.*; EX1003, ¶114.)

It would have been obvious to combine Symons and Williams. (*Id.*, ¶115.) Symons interfaces with multiple platforms: an email signature platform, Microsoft Word, and Microsoft Outlook. (*Id.*) A POSITA would be motivated to reduce the costs, time, and efforts needed to interface with the multiple platforms, especially since traditional IT programming efforts are not needed, and the prior art has demonstrated reasonable expectation of success for interfacing to other systems without relying on a dedicated API. (*Id.*)

**8. Claim 10: “The method of claim 1, wherein the functionality of the computer program comprises inputting data to a field in the displayed user interface.”**

Symons’ “RPA bot automatically opens browser and enters details.” (EX1006, 11.) The RPA bot inputs data to a field in the displayed UI (annotated below): inputting “Vincent De Bie,” “Engineer,” “vincent.debie@cronos.be,” and “0412345678” in the name, job role, email, and mobile input fields. (EX1006, 12; EX1003, ¶116.)



## 9. Claim 11

- a. **Preamble: “A computerized apparatus for defining an automation process, wherein the automation process is configured 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:”**

To the extent the preamble is limiting (which Petitioner does not concede), Symons alone, or in combination with Williams, discloses the preamble.

Symons alone, or in combination with Williams, discloses the preamble of claim 1. The preamble of claim 11 is similar to the preamble of claim 1 but requires a “computerized apparatus” for defining an automation process.

(EX1003, ¶117.) Symons discloses a computer program, operated by a computer system (computerized apparatus), that “automate[s] the process of creating an

email signature.” (EX1004, 2; EX1003, ¶118.)

The preamble of claim 11 also requires the “computerized apparatus compris[e] a processor and coupled memory.” (*Id.*, ¶119.) Symons discloses a computer program, operated by a computer system, which comprises a processor and coupled memory. (*Id.*) The processor is adapted to perform the steps of a computer program. (*Id.*)

**b. Elements 11[a]-11[e]**

Elements 11[a]-11[e] mirror elements 1[a]-1[e], which Symons discloses or renders obvious. (EX1003, ¶¶120-124.)

**10. Claims 12-14**

Claims 12-14 mirror claims 2-4, which Symons-Williams renders obvious or Symons discloses. (EX1003, ¶¶125-127.)

**11. Claim 18**

- a. Preamble: “A non-transitory computer readable medium for defining an automation process, wherein the automation process is configured 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:”**

To the extent the preamble is limiting (which Petitioner does not concede), Symons discloses the preamble.

Symons alone, or in combination with Williams, discloses the preamble of claim 1. The preamble of claim 18 is similar to the preamble of claim 1, but requires a “non-transitory computer readable medium” for defining an automation process, “the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor cause the processor to perform.” (EX1003, ¶128.)

Symons discloses a computer program, operated by a computer system, that “automate[s] the process of creating an email signature.” (EX1004, 2.) A computer system comprises a non-transitory computer readable medium retaining program instructions (of the computer program). (EX1003, ¶129.) The processor performs steps according to the program instructions when read by the processor. (*Id.*)

**b. Elements 18[a]-18[e]**

Elements 18[a]-18[e] mirror elements 1[a]-1[e], which Symons discloses or renders obvious. (EX1003, ¶¶130-134.)

**12. Claim 19**

Claim 19 mirrors claim 2, which Symons-Williams renders obvious. (EX1003, ¶135.)

**B. Ground 2 – Symons, Williams, and Ben-Itzhak Render Obvious Claims 6, 16, and 21**

**1. Summary of Ben-Itzhak**

Ben-Itzhak published on August 31, 2017, qualifying as prior art to the '732 patent at least under § 102(a)(1). (EX1034.) The Examiner never found and Applicant never cited, Ben-Itzhak during prosecution.

Ben-Itzhak discloses an “interactive communication-based personalized content recommendation provisioning method and system” comprising a conversation agent that presents the user with personalized content recommendation. (EX1034, Abstract; EX1003, ¶137.) For example, the conversation agent provides the user with a Uniform Resource Locator (URL) link. (*Id.*) The user accesses and consumes the recommended content by interacting with the URL link. (*Id.*)

**2. Claim 6: “The method of claim 1, 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.”**

Ben-Itzhak discloses an “interactive communication-based personalized content recommendation provisioning method and system.” (EX1034, Abstract.) “[T]he user may engage in a conversation . . . with the conversation agent,” which “present[s] [the user] with the personalized content recommendation.” (*Id.*,

[0016], [0018], [0019]; EX1003, ¶138.) The “user may be associated with one or more third party application, platform, device, system, or network IDs.” (EX1034, [0028], [0031]; EX1003, ¶139.)

The conversation agent provides “a Uniform Resource Locator (URL) link . . . to the user as a message or response to the one or more user messages in the active conversation. In this example, the user may interact with the provided URL link associated with the personalized content recommendation to access and consume the recommended content.” (EX1034, [0018]; EX1003, ¶¶140-141.)

It would have been obvious to combine Symons-Williams and Ben-Itzhak. Williams and Symons both disclose different platforms interfacing with each other. (EX1011, 2; EX1006, 11, 15, 21; EX1003, ¶142.) As explained, “RPA is the application of technology that allows computer software or a ‘robot’ to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and *communicating with other digital systems*.” (EX1011, 2 (emphasis added).) “[T]hese platforms are equally able to work through system’s graphical interfaces including web browsers and Citrix terminal sessions.” (*Id.*) A POSITA would be motivated to interface with a different platform without using an API—by generating and providing a link—because doing so leads to shorter times for deployment, lower upfront costs, and lower operational costs. (*Id.*; EX1003, ¶¶142-143.)

### **3. Claims 16, 21**

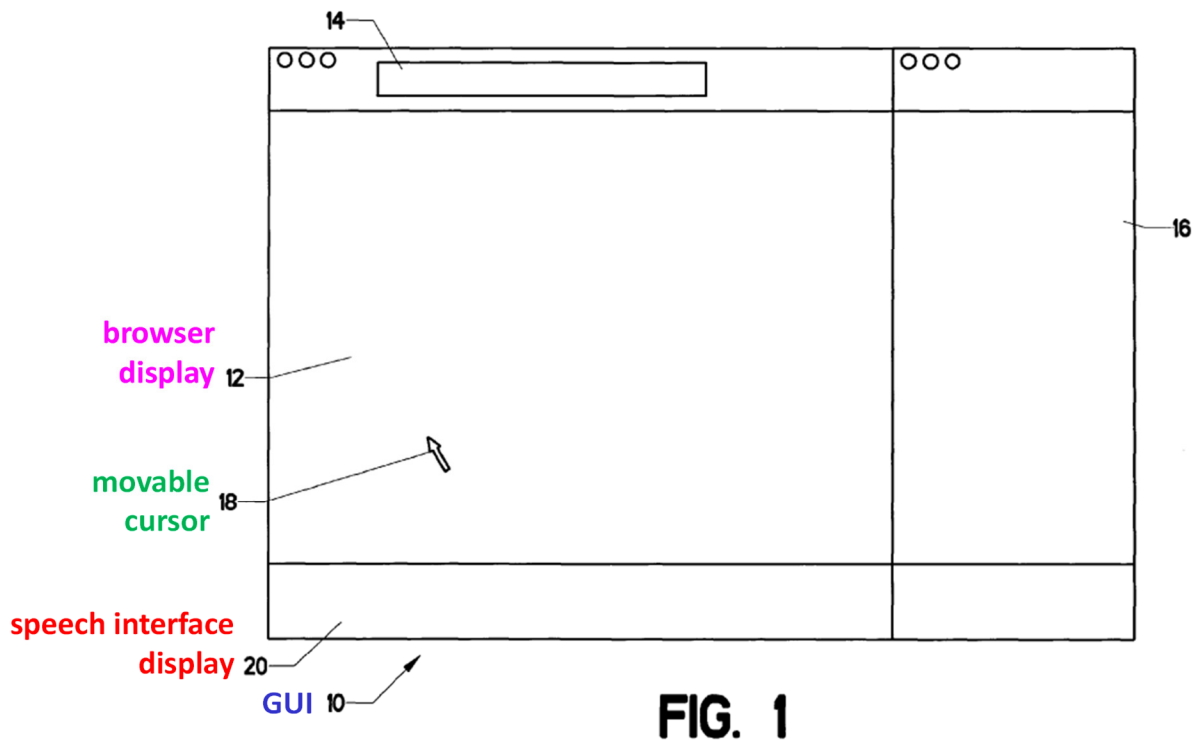
Claims 16 and 21 mirror claim 6, which Symons-Williams-Ben-Itzhak renders obvious. (EX1003, ¶¶144-145.)

## **C. Ground 3 – Allen Renders Obvious Claims 1-5, 9-15, and 18-20**

### **1. Summary of Allen**

Allen published on July 19, 2011, qualifying as prior art to the '732 patent at least under § 102(a)(1). (EX1014.) The Examiner never found and Applicant never cited, Allen during prosecution.

Allen discloses a system that allows a user to teach it how to perform complex, repetitive tasks that a user performs using a GUI. (EX1014, Abstract; EX1003, ¶146.) The user teaches the system the task steps by inputting natural language (displayed in speech interface display 20) and demonstrating actions with the browser display 12 and movable cursor of the GUI 10 (Fig. 1 (annotated below)). (EX1014, Abstract; EX1003, ¶147.) After the complete task has been taught, the user instructs the system to perform the task, and the system automatically executes it. (*Id.*)



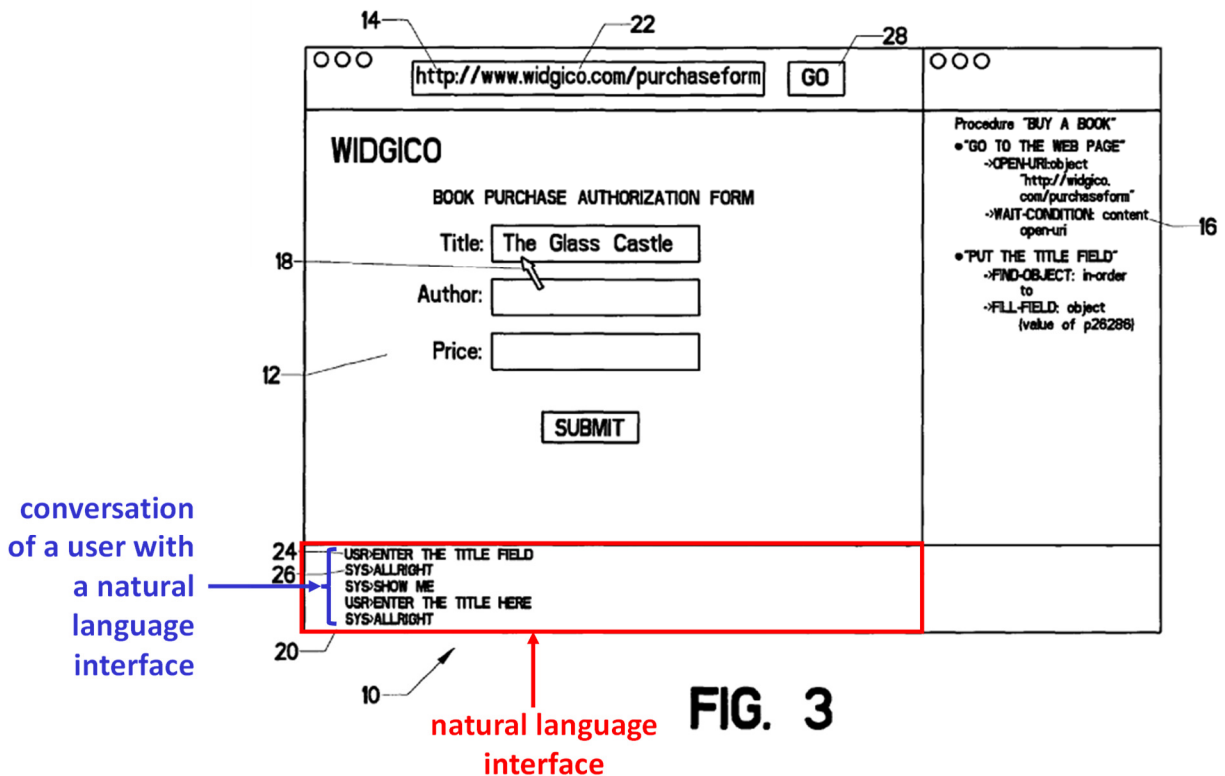
## 2. Claim 1

- a. **Preamble: “A method for defining an automation process, wherein the automation process is configured to be invoked in response to a conversation of a user with a natural language interface, the method comprising:”**

To the extent that preamble is limiting (which Petitioner does not concede), Allen discloses the preamble.

Allen’s “system which allows a user to *teach a computation device* how to perform complex, repetitive tasks that the user usually would perform using the device’s graphical user interface (GUI). . . . After a complete task has been taught, the system is able to *automatically execute the task* in new situations.” (EX1014, Abstract (emphases added); EX1003, ¶148.)

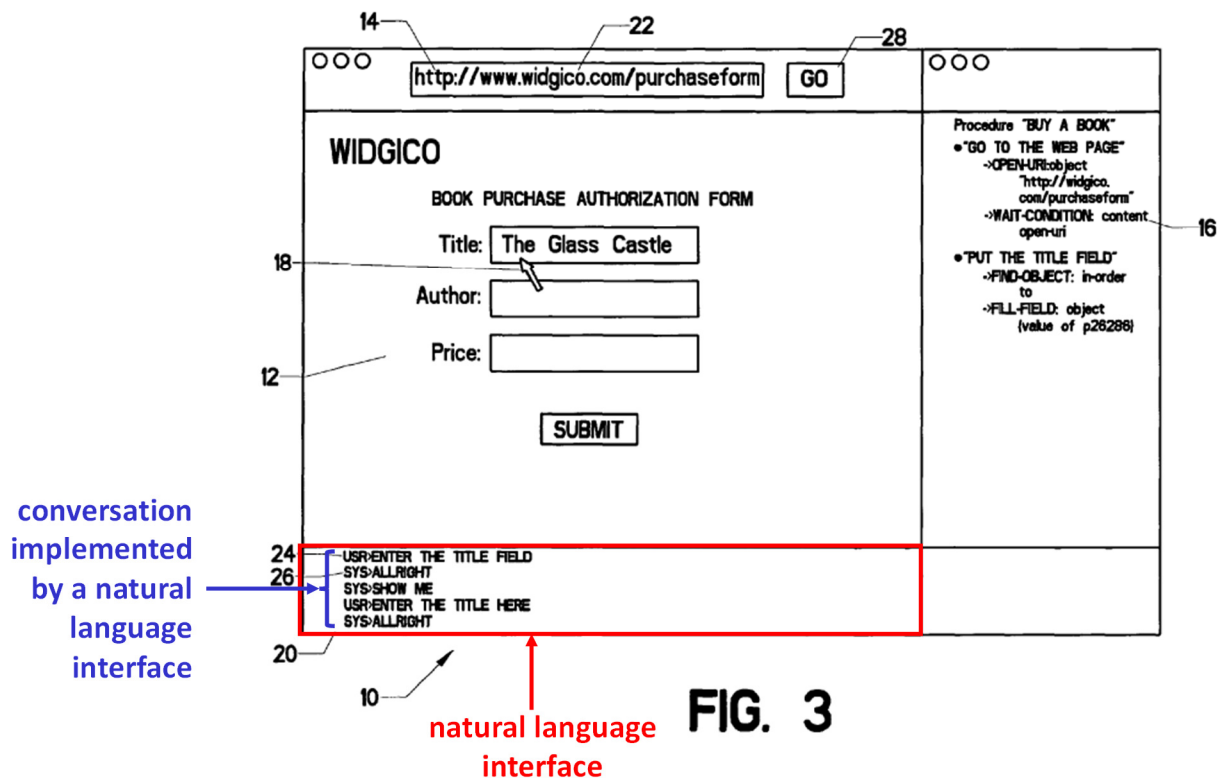
“Once a task has been successfully taught to the system, *a user can ask the system to perform that task. The system will then execute the steps* it previously learned.” (*Id.*, 3:44-46 (emphasis added).) For example, the user says, “I want to buy a book,” and in response, the system asks “What is the title of the book?” (*Id.*, 12:64-66; EX1003, ¶149.) The automation process is invoked in response to a conversation of a user. (*Id.*) Fig. 3 (annotated below) shows the user’s speech 24 and the system’s speech 26 in the speech interface display 20 (conversation of a user with a natural language interface). (*Id.*, ¶150.)



- b. 1[a]: “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 associated with the automation process;”

Allen’s “software includes a *natural dialog-based interface* whereby said *user can communicate with said software* using natural dialog-based language” (Fig. 3 (annotated below)). (EX1014, 18:47-49 (emphases added); EX1003, ¶151.)



The user utters a request, and the system “perform[s] the steps it was previously taught and complete[s] the transaction.” (EX1014, 12:66-13:1; EX1003, ¶152.) If, for example, the user says, “I want to buy a book” to the system, then the system asks questions related to the requested automated task, such as “What is the title of the book?” (EX1014, 12:64-65; EX1003, ¶152.) If the user utters a different request (*e.g.*, user requests a search for hotels), the

system asks different, but related questions such as “What is the address?”

(EX1014, 16:35-40; EX1003, ¶153.) Allen defines a conversation implemented by the natural language interface. (EX1003, ¶153.)

The conversation comprises the chatbot asking questions and then obtaining from the user values. (*Id.*, ¶154.) For example, when the system asks “What is the title of the book?”, the user provides an answer, here, the title of the book.

(EX1014, 12:65-66; EX1003, ¶154.) The system also “obtain[s] price and delivery date information, then provide this information back to the user and ask whether the user wishes to complete the transaction.” (EX1014, 13:2-5.) For example, the price for “The Glass Castle” book may be \$10.99, with a delivery date of Jan. 7, 2007. (EX1003, ¶154.)

The obtained values are to parameters. (EX1003, ¶155.) “The Glass Castle,” \$10.99, and Jan. 7, 2007 are values for the title, price, and delivery date parameters. (*Id.*) The values are used in (associated with) the automation process: “[t]he user would only need to say something like ‘I want to buy a book.’ The system would then ask, ‘What is the title of the book?’ Once that information is provided, [the system] perform[s] the steps it was previously taught and complete[s] the transaction.” (EX1014, 12:64-13:1.) The system was previously taught to navigate to a web page, enter the user-provided title in the title field, select among the books, enter shipping information, and enter payment

information, as part of the automation process. (*Id.*, 5:63-67, 6:27-53; EX1003, ¶155.) Value(s) to parameter(s) are associated with the automation process. (EX1014, 5:63-67, 6:27-53; EX1003, ¶155.)

**c. 1[b]: “associating the conversation with the automation process,”**

The values obtained from the user during the conversation implemented by the natural language interface are used in the automation process, so Allen discloses associating the conversation with the automation process. (*See* element 1[a]; EX1003, ¶156.)

**d. 1[c]: “wherein the automation process is configured to utilize a displayed user interface of a computer program to simulate sequence of interactions with the displayed user interface of the computer program and execute a functionality of the computer program, wherein the automation process is a parameterized automation process depending on the one or more parameters; and”**

Allen discloses “[f]or each step a user teaches the system, the system attempts to recognize the user’s intent. The system then learns to automatically execute steps by observing the user’s actions and analyzing the verbal instructions the user provides.” (EX1014, 6:61-65.)

The system learns how to execute the steps in the automation process of buying a book by observing a sequence of user interactions with a displayed UI of a computer program, such as inputting the title in the title entry box 30, navigating

to an online vendor site, pulling down and selecting the “Books” category, picking and inputting data in the text entry box 58, actuating the “GO” button, opening a specific book page, identifying the book price, and entering the book price on the purchase form. (EX1014, 12:11-61; EX1003, ¶¶157-158.) The steps execute a functionality of the computer program, such as visiting online websites. (*Id.*, ¶158.) Since the system learns how the user interacts with the displayed UI of the computer program, performing the steps it was previously taught means the automation process utilizes a displayed UI of a computer program to simulate sequence of interactions. (*Id.*, ¶159.)

After the chatbot is provided with the value for the parameters, it utilizes the values in the automation process of buying a book. (*See* element 1[a]; EX1003, ¶160.) Allen’s automation process is a parameterized automation process having a parameter. (*Id.*)

To the extent that Allen does not disclose performing an automation of a sequence of interactions with a displayed UI of the computer program and simulating user interactions with the displayed UI, it would have been obvious. Allen discloses a “graphical user interface (‘GUI’) is preferably provided so that the *user can easily monitor [the system’s] actions.*” (EX1014, 4:66-5:1 (emphasis added).) It would have been obvious that in order for the user to easily monitor the system’s actions, the system’s actions have to be displayed. (EX1003, ¶161.) As a

result, the system's actions (simulated user interactions) are with a displayed UI.

(*Id.*)

- e. **1[d]: “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,”**

Fig. 1 (below) shows Allen's GUI 10, which publishes the conversation (user speech 24 and system speech 26) in the speech interface display 20, accessible to a user via the natural interface. (EX1014, 5:33-34, 5:47-48; EX1003, ¶¶162-163.)

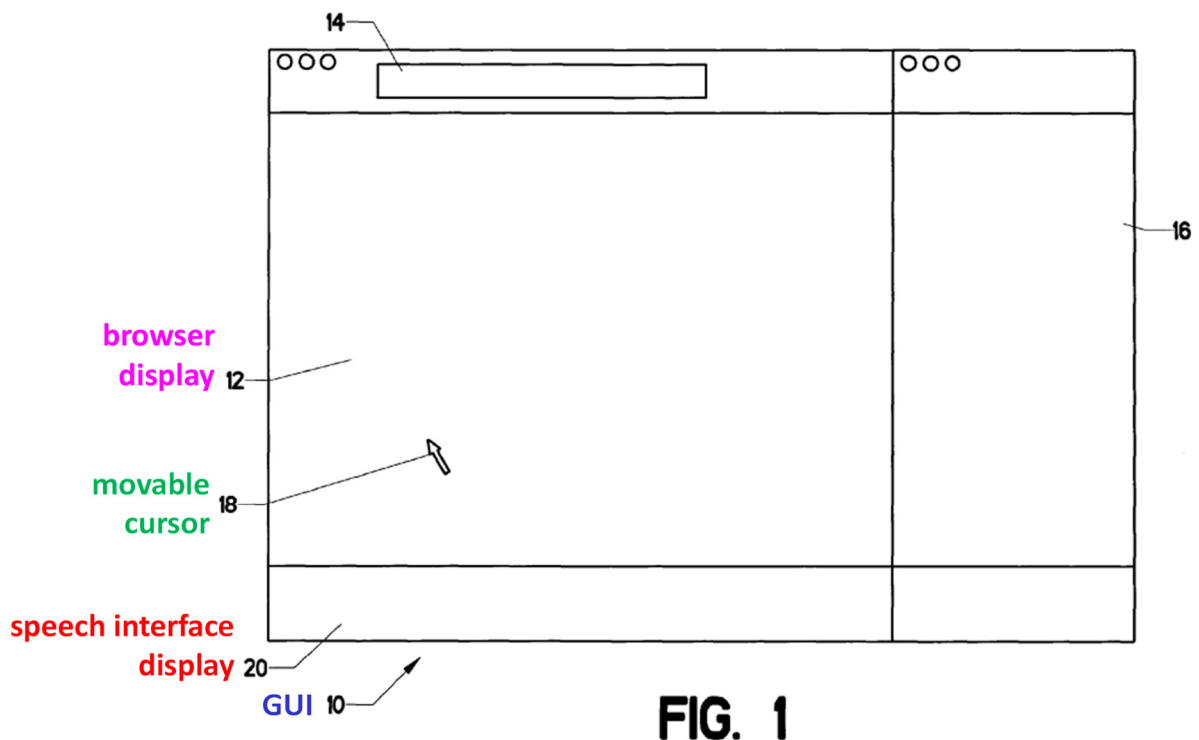


**FIG. 1**

The conversation comprises the chatbot asking questions and the user responding. (EX1003, ¶164.) For example, when the system asks “What is the

title of the book?”, the user provides an answer, here, the title of the book.

(EX1014, 12:65-66; EX1003, ¶164.) The system also “obtain[s] price and delivery date information, then provide this information back to the user and ask whether the user wishes to complete the transaction.” (EX1014, 13:2-5.) The user is enabled to interact with the natural language interface in accordance with the conversation. (EX1003, ¶164.)

- f. **1[e]: “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.”**

In Allen, the automation process is invoked automatically by the natural user interface: “[o]nce a task has been successfully taught to the system, *a user can ask the system to perform that task. The system will then execute the steps it previously learned.*” (EX1014, 3:44-46 (emphasis added); EX1003, ¶¶165-166.)

Allen’s automation process is a parameterized automation process. (See element 1[c]; EX1003, ¶166.) The automation process uses the values (“The Glass Castle,” a price such as \$10.99, a delivery date such as Jan. 7, 2007) provided by the user to the natural language interface for the parameters (title, price, delivery data). (See element 1[a]; EX1003, ¶166.)

3. **Claim 2: “The method of claim 1, 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.”**

Allen discloses a conversation flow that defines an order between conversation elements. (EX1003, ¶167.) In the book buying task, the chatbot asks questions, *e.g.*, first for the book’s title and then for authorization to complete the transaction based on the obtained price and delivery date information. (EX1014, 12:62-13:5; *see* element 1[a].) The conversation elements comprise a question element. (EX1003, ¶167.)

An action element is associated with each chatbot question and user answer, and the conversation elements comprise an action element. (*Id.*, ¶168.) An action of inputting the book’s title in the title input field is associated with the title question and answer, and an action of obtaining the book price and delivery date information is associated with the authorization question and answer. (*Id.*, ¶169.) Allen discloses the conversation elements comprise at least a question element and an action element, where the action element is associated with the automation process. (*Id.*)

Allen also discloses determining a conversation flow. (*Id.*, ¶170.) The “software receives the user’s input and processes the input through an intent

recognition component, which seeks to determine what the user wishes to do.”

(EX1014, 3:19-21.) The system determines the conversation flow based on the user’s intent so that it can execute the correct automated task. (EX1003, ¶170.)

The system asks questions to obtain values for parameters for corresponding ontological properties. (EX1014, 3:47-56; EX1003, ¶170.) For example, if the system determines that the user wishes to buy a book, it determines the conversation flow as comprising questions to obtain the title and author of the book. (EX1014, 7:2-6, 11:33-40, 12:64-66; EX1003, ¶170.) On the other hand, if the system determines that the user wishes to search for a hotel, it determines the conversation flow as comprising questions to obtain an address or proximity information. (EX1014, 16:36-54; EX1003, ¶171.)

**4. Claim 3: “The method of claim 2, wherein the conversation elements comprise at least one of: a message element and a condition element.”**

Claim 3 requires “at least one of: a message element and a condition element,” which means having one satisfies the claim. (EX1003, ¶172.)

Allen’s conversation elements for the book buying task comprises a message element, such as a message that “provide[s] [the price and delivery date] information back to the user.” (EX1014, 13:2-5; EX1003, ¶¶173-175.)

5. **Claim 4: “The method of claim 2, 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.”**

Allen’s system “‘learns’ in a fashion that resembles human learning. It . . . expands its knowledge as it is taught additional tasks. The system will become more flexible and adaptive as it *stores more learned tasks. Once a task has been successfully taught to the system, a user can ask the system to perform that task.* The system will then execute the steps it previously learned.” (EX1014, 3:40-46 (emphasis added); EX1003, ¶176.)

The user asking the system to perform a task, where the system has learned multiple tasks, means the natural language interface selectively invokes different automation processes (either the automation process or the second automation process) based on the user’s request (interaction with the user). (*Id.*, ¶176.) For example, the user says “I want to buy a book,” and then the system executes the steps it previously learned for the book buying task. (EX1014, 7:2-6, 11:33-40, 12:64-66; EX1003, ¶177.) As explained, its “system identifies task input parameters using three sources: First, it uses the initial task description to define an objective. The system identifies ontological properties of the objective.” For the book buying task, the system translates the user’s uttered words into the

ontological concepts “Action: BUY; Object: BOOK.” (EX1014, 3:39-41; EX1003, ¶177.)

As another example, the user asks the system to search for hotels (*e.g.*, “I want to search for a hotel”), and then the system executes the steps for a hotel searching task. (EX1014, 16:36-54; EX1003, ¶178.) It would have been obvious for the system to translate the user’s uttered words into ontological concepts, such as, Action: SEARCH; Object: HOTEL. (*Id.*) The conversation elements comprise a second action element associated with a second automation process. (*Id.*)

The natural language interface selectively invokes either the automation process (*e.g.*, book buying task) or the second automation process (*e.g.*, hotel searching task) based on interaction with the user (*e.g.*, “I want to buy a book” vs. “I want to search for a hotel”). (*Id.*, ¶179.)

## 6. Claim 5

- a. 5[a]: “The method of claim 1, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation;”**

In Allen, the natural language interface is associated with a plurality of conversations. (EX1003, ¶180.) For example, as Allen discloses, one conversation may be about a book buying task, and another may be about a hotel searching task. (*See* claim 4; EX1003, ¶180.) The plurality of conversations comprise the conversation about the book buying task, which is “the conversation”

of claim 1. (*Id.*)

**b. 5[b]: “wherein each of the plurality of conversations is associated with one or more terms,”**

As explained, its “system identifies task input parameters using three sources: First, it uses the initial task description to define an objective. The system identifies ontological properties of the objective.” (EX1003, ¶181.) For the book buying task, the system translates the user’s uttered words into the ontological concepts “Action: BUY; Object: BOOK.” (EX1014, 3:39-41; EX1003, ¶181.) In other words, a conversation for a book buying task is associated with the terms “buy” and “book.” (*Id.*)

Another example task that Allen discloses is searching for a hotel. (EX1014, 16:36-54; EX1003, ¶182.) For a hotel searching task, it would have been obvious for the system to translate the user’s uttered words into the ontological concepts “Action: SEARCH; Object: HOTEL.” (*Id.*) A conversation for the hotel searching task would be associated with the terms “search” and “hotel.” (*Id.*) Allen renders obvious each of the plurality of conversations being associated with term(s).

**c. 5[c]: “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,”**

Allen disclose determining a conversation flow, which comprises selecting a

conversation from a plurality of conversations, based on the user's intent so that the system can execute the correct automation process. (*See* claim 2; EX1003, ¶183.)

“When the user utters words describing an action (‘Let me teach you how to buy a book’), the system translates the user's uttered words into ontological concepts (Action: BUY; Object: BOOK),” based on a word lexicon. (EX1014, 3:37-40.) Allen discloses a user intent matching term(s). (EX1003, ¶184.)

“The system identifies task input parameters using three sources: First, it uses the initial task description to define an objective. If, as an example, the objective is buying a book, the system identifies the objective as a book and identifies the ontological properties of a book, such as the fact that it will have a title and that it will have been created by an author.” (EX1014, 3:47-52.) In other words, the system determines the initial task (user's intent) based on matches to words (terms), such as “buy” and “book.” (EX1003, ¶185.) Then, the system asks questions related to the ontological properties, such as title and author, selecting a conversation from the plurality of conversation based on the user intent. (*Id.*)

**d. 5[d]: “wherein the user intent is determined based on interaction of the user with the natural language interface.”**

The system determines the user's intent based on the words the user's uttered words to the system. (*See* element 5[c]; EX1003, ¶186.) “Once a task has

been successfully taught to the system, *a user can ask the system to perform that task. The system will then execute the steps it previously learned.*” (EX1014, 3:44-46 (emphasis added).) The user’s intent it used to determine the automated task to execute, based on interaction of the user with the natural language interface. (EX1003, ¶186.)

**7. Claim 9:**

- a. 9[a]: “The method of claim 1, wherein the automation process is configured to execute a new functionality of the computer program, wherein the new functionality is defined based on the values to the one or more parameters,”**

Allen discloses the automation process executing a new functionality of the computer program: “[f]ollowing receiving the *initial statement from the user*, [the system] *creates a title for the new process it is about to learn.*” (EX1014, 5:56-59 (emphases added); EX1003, ¶187.) “As an example, the intent recognition module may discern the intent to *add a new step to the process of buying a book.* . . . The collaborative actor module recognizes that a new step is desired, but that no definition has yet been provided for the new step. . . . Once the definition of the new step is deemed valid and opened, *the system monitors the user’s actions* and records them in the task database.” (EX1014, 8:18-23 (emphases added).) The user statements (such as an initial statement from the user) and the monitored user’s actions provide values (*e.g.*, title of the book as entered by the user in the

title input field) to the parameters, so the new functionality is defined based on the values to the parameters. (*See* element 1[a]; EX1003, ¶188.)

**b. 9[b]: “without relying on a dedicated Application Programming Interface (API) of the computer program.”**

Allen’s “system can [] function in a web-based environment in which *information is transferred using HTML, XHTML, CSS, and/or scripts.*”

(EX1014, 3:26-31 (emphasis added).) The “user ‘teaches’ task steps by inputting natural language and demonstrating actions with the GUI.” (EX1014, Abstract.) This means the automation process is defined to perform any functionality that a non-programmer user can perform in the GUI. (EX1003, ¶189.) Executing is performed without relying on a dedicated API of the computer program (without requiring the user provide any line of code). (*Id.*)

**8. Claim 10: “The method of claim 1, wherein the functionality of the computer program comprises inputting data to a field in the displayed user interface.”**

Allen’s system automatically executes the steps that the “user usually would perform using the device’s graphical user interface (GUI).” (EX1014, Abstract; EX1003, ¶100.) The GUI comprises input fields, such as title, author, and price input fields (Fig. 3 (annotated below)). (*Id.*) The system inputs data (*e.g.*, title of the book) (“[t]he system would then ask, ‘What is the title of the book?’,” and the user provides the information) to a field in the displayed UI. (EX1014, 12:62-66;

EX1003, ¶(100.)

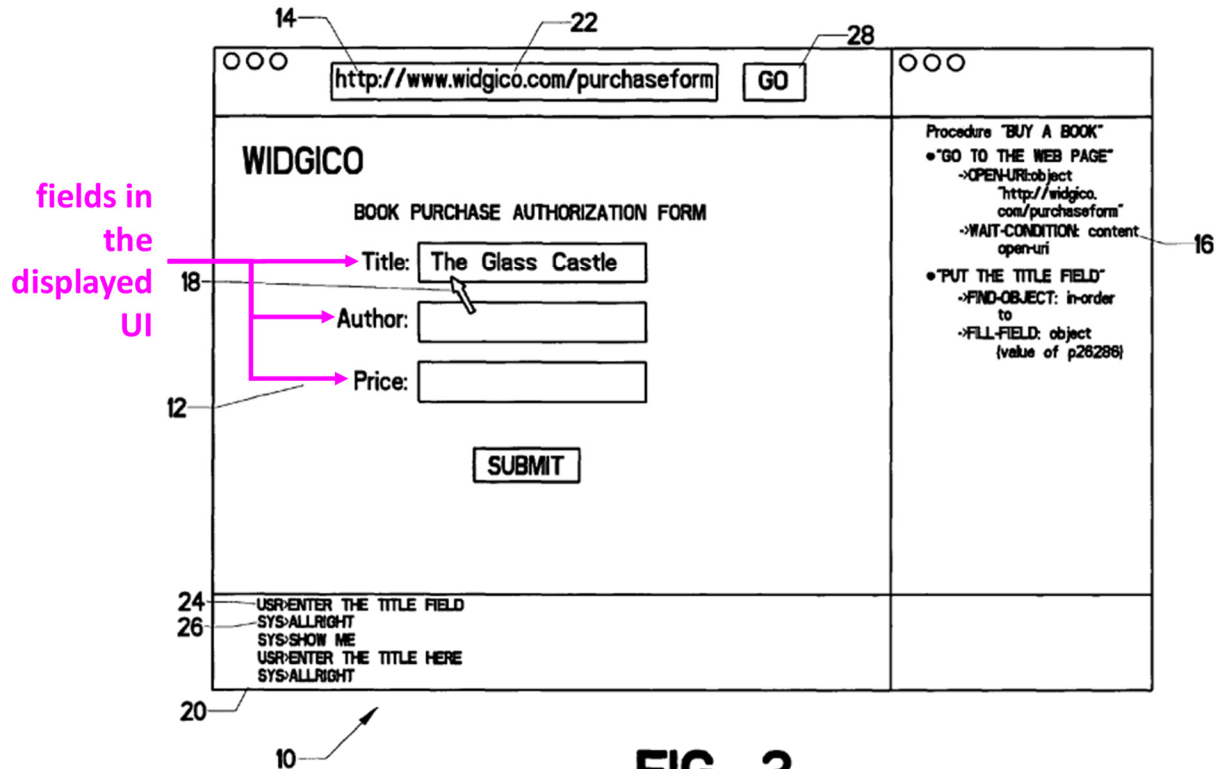


FIG. 3

## 9. Claim 11

- a. **Preamble:** "A computerized apparatus for defining an automation process, wherein the automation process is configured 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:"

To the extent the preamble is limiting (which Petitioner does not concede), Allen discloses the preamble.

Allen discloses the preamble of claim 1. The preamble of claim 11 is similar

to the preamble of claim 1, but requires a “computerized apparatus” for defining an automation process. (EX1003, ¶191.) Allen’s “system [] allows a user to teach a ***computational device*** how to perform complex, repetitive tasks.” (EX1014, 3:6-8 (emphasis added); EX1003, ¶192.) Allen discloses a computerized apparatus. (*Id.*)

The preamble of claim 11 also requires the “computerized apparatus compris[e] a processor and coupled memory.” (EX1003, ¶193.) A computational device comprises a processor and coupled memory. (*Id.*)

**b. Elements 11[a]-11[e]**

Elements 11[a]-11[e] mirror elements 1[a]-1[e], which Allen discloses or renders obvious. (EX1003, ¶¶194-198.)

**10. Claims 12-15**

Claims 12 and 13 mirror claims 2 and 3, which Allen discloses. (EX1003, ¶¶199-200.) Claims 14 mirrors claim 4 and claim 15 mirrors claim 5, which Allen renders obvious. (*Id.*, ¶¶201-202.)

11. Claim 18

- a. **Preamble: “A non-transitory computer readable medium for defining an automation process, wherein the automation process is configured 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:”**

To the extent the preamble is limiting (which Petitioner does not concede), Allen discloses the preamble.

Allen discloses the preamble of claim 1. The preamble of claim 18 is similar to the preamble of claim 1, but requires a “non-transitory computer readable medium” for defining an automation process, “the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor cause the processor to perform.” (EX1003, ¶¶203.)

Allen discloses software running on a user’s computational device that is part of a “system which allows a user to *teach a computation device* how to perform complex, repetitive tasks that the user usually would perform using the device’s graphical user interface (GUI). . . . After a complete task has been taught, the system is able to *automatically execute the task* in new situations.” (EX1014, Abstract (emphases added), 3:8-10.) A computational device comprises a non-transitory computer readable medium retaining software (program instructions).

(EX1003, ¶204.) The processor performs steps according to the program instructions when read by the processor. (*Id.*)

**b. Elements 18[a]-18[e]**

Elements 18[a]-18[e] mirror elements 1[a]-1[e], which Allen discloses or renders obvious. (EX1003, ¶¶205-209.)

**12. Claim 19, 20**

Claims 19 and 20 mirror claims 2 and 5, which Allen discloses or renders obvious. (EX1003, ¶¶210-211.)

**D. Ground 4 – Allen and Ben-Itzhak Render Obvious Claims 6, 16, and 21**

**1. Claim 6: “The method of claim 1, 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.”**

As discussed in Section B.2, Ben-Itzhak discloses a conversation agent (natural language interface) implemented by a third-party messaging service. (EX1003, ¶¶212-213.) “[T]he user may interact with the provided URL link associated with the personalized content recommendation to access and consume the recommended content.” (EX1034, [0018].)

It would have been obvious to combine Allen and Ben-Itzhak. Allen discloses “the system can [] function in a web-based environment in which

information is transferred using HTML, XHTML, CSS, and/or scripts.” (EX1014, 3:26-31.) Ben-Itzhak similarly generates and provides a link for accessing and consuming associated content. (EX1034, [0018]; EX1003, ¶214.) Applying Ben-Itzhak’s teachings (generating and providing a link) to Allen’s system results in accessing content associated with webpages, such as amazon.com, mapquest.com). (EX1014, 2:48-49, 11:46-47.) Interacting with the link (as Ben-Itzhak teaches) helps the user consume content associated with the webpages. Consuming content in Allen corresponds to the computer interacting with the webpage (causing execution of the automation process). A POSITA would have been motivated with interaction of the link causing execution of the automation process because then the user can see whether the system understood the speech correctly and executes the task properly (consistent with Allen’s objectives). (*Id.*, 5:24-40; EX1003, ¶214.)

## **2. Claims 16, 21**

Claims 16 and 21 mirror claim 6, which Allen-Ben-Itzhak renders obvious. (EX1003, ¶¶215-216.)

## **E. Ground 5 – Krishnan and Radhakrishnan Render Obvious Claims 1-5, 9-15, and 18-20**

### **1. Summary of Krishnan**

Krishnan was filed on January 30, 2018, claims priority to a provisional application filed on November 3, 2017, and published on May 9, 2019. The

provisional application provides support for at least claim 1 of the Krishnan patent. (EX1017, [0001]-[0004], [0008]-[0015], [0019], [0020], [0021], [0024], [0028]-[0030], [0032], [0045]-[0048], Figs. 2, 3, 6, 7; EX1003, ¶217.) The specific subject matter relied upon as prior art is also supported by the provisional application. (EX1017, [0001]-[0004], [0006], [0009]-[0011], [0014]-[0015], [0018]-[0019], [0021], [0024]-[0025], [0030], [0045]-[0046], [0048]-[0049], [0057], Figs. 1, 9; EX1003, ¶217.) Krishnan qualifies as prior art to the '732 patent at least under § 102(a)(2). (*Id.*); *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1382-83 (Fed. Cir. 2015). The Examiner cited, but never characterized or discussed Krishnan during prosecution.

Krishnan discloses a visual chatbot builder and corresponding chatbot. (EX1016, Abstract; EX1003, ¶218.) The chatbot interfaces with customers via a conversation where the chatbot responds by retrieving and providing the requested information, requesting additional input or information from the customer, or performing an action and providing the user with status updates about the progress of the action. (EX1016, 2:40-44; EX1003, ¶219.) Fig. 1 (annotated below) shows an example interface and conversation between the chatbot and a customer.

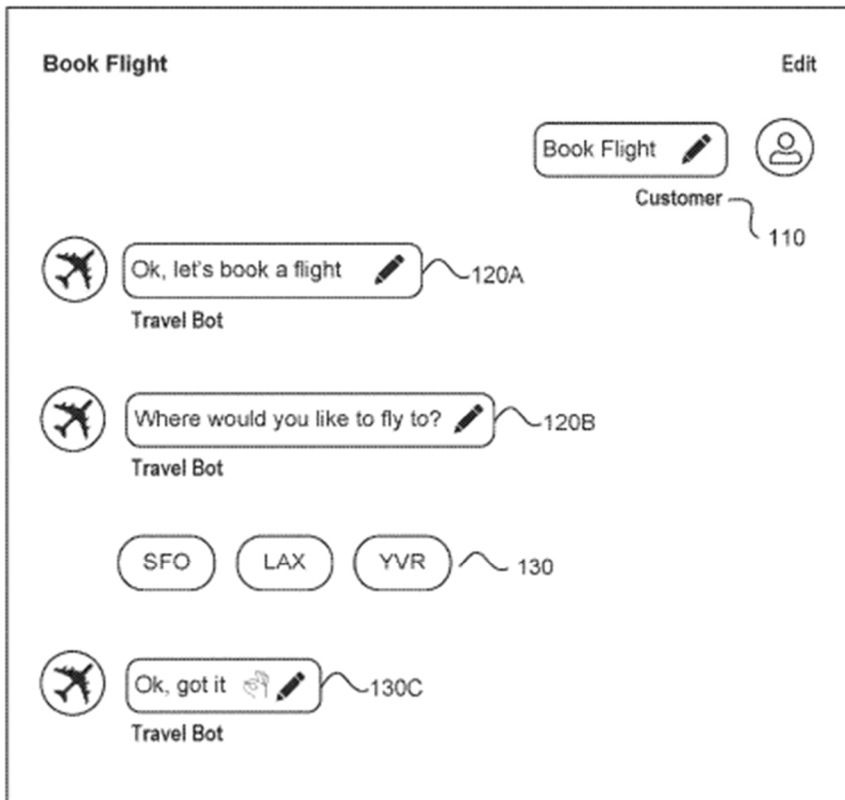


FIG. 1

## 2. Summary of Radhakrishnan

Radhakrishnan was filed on October 30, 2017 and published on May 2, 2019, qualifying as prior art to the '732 patent at least under § 102(a)(2). The Examiner never characterized or discussed Krishnan during prosecution.

Radhakrishnan discloses an RPA module that simulates user operations with a GUI for generating and transmitting an operation record when a computer software-related error occurs (*e.g.*, program crash, file corruption, etc.) (Fig. 2 (below)). (EX1018, Abstract; EX1003, ¶219.) The operation record is used for

reproducing, diagnosing, and rectifying the error. (EX1018, 1:7-19; EX1003, ¶219.)

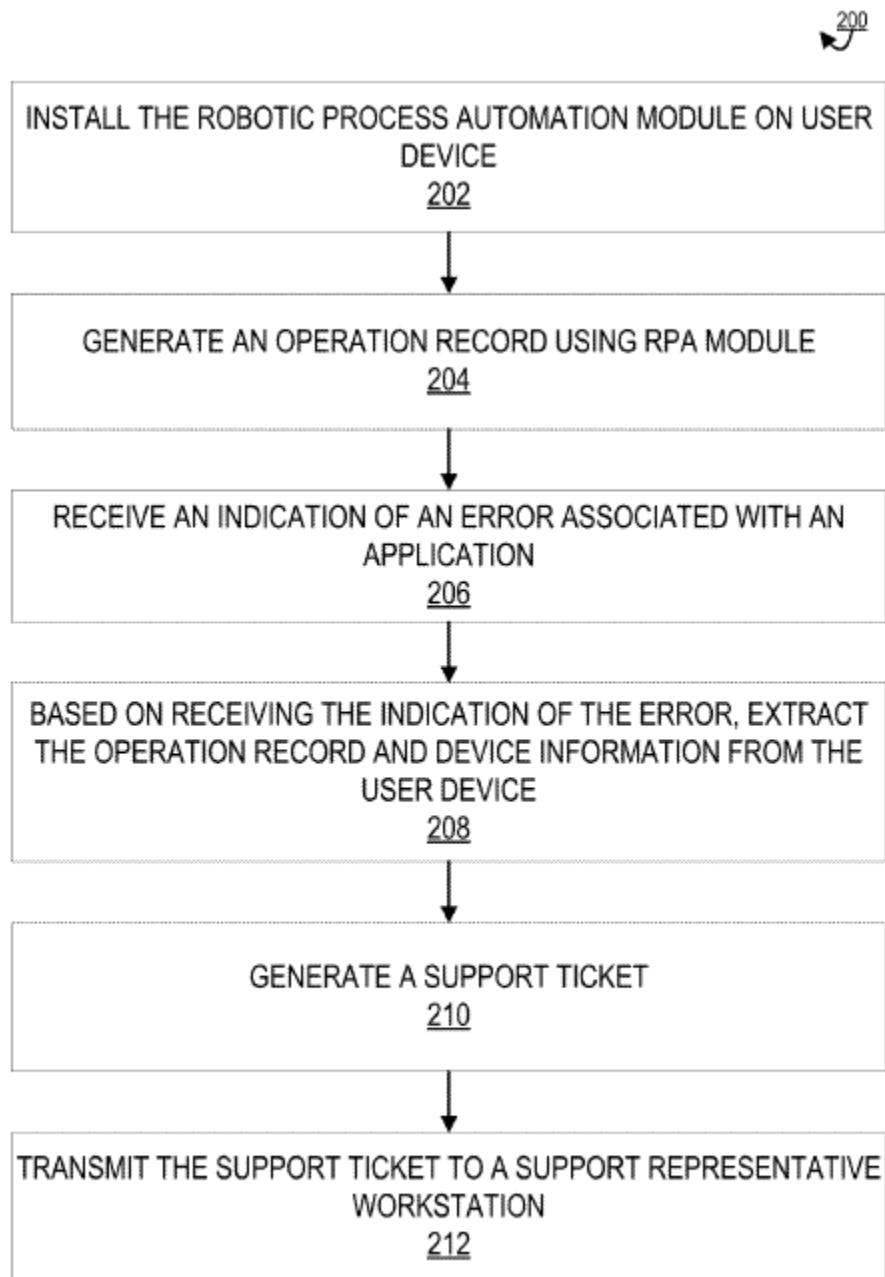


**FIG. 2**

**3. Claim 1**

- a. Preamble: “A method for defining an automation process, wherein the automation process is configured to be invoked in response to a conversation of a user with a natural language interface, the method comprising:”**

To the extent the preamble is limiting (which Petitioner does not concede), Krishnan and Radhakrishnan render obvious the preamble.

Krishnan discloses a method of “conduct[ing] a conversation with a user and is designed to simulate a human conversational pattern.” (EX1016, 1:17-19; EX1003, ¶220.) “The chat bot may respond to customer input by retrieving and providing the requested information, requesting additional input or information from the user, or performing an action and providing the user with status updates about the progress of the action. This *back-and-forth interaction between a user and chat bot may be referred to as a conversation.*” (EX1016, 2:40-46 (emphasis added).)

Fig. 1 (annotated below) shows the conversation of a user with a natural language interface for an example automation process of booking a flight. (EX1003, ¶220.) The chatbot requests information “necessary to book the flight, such as locations, dates of travel, seat preferences, and credit card information, and then processes the request to book the flight.” (EX1016, 2:67-3:3; EX1003, ¶221.)

## conversation of a user with a natural language interface

100

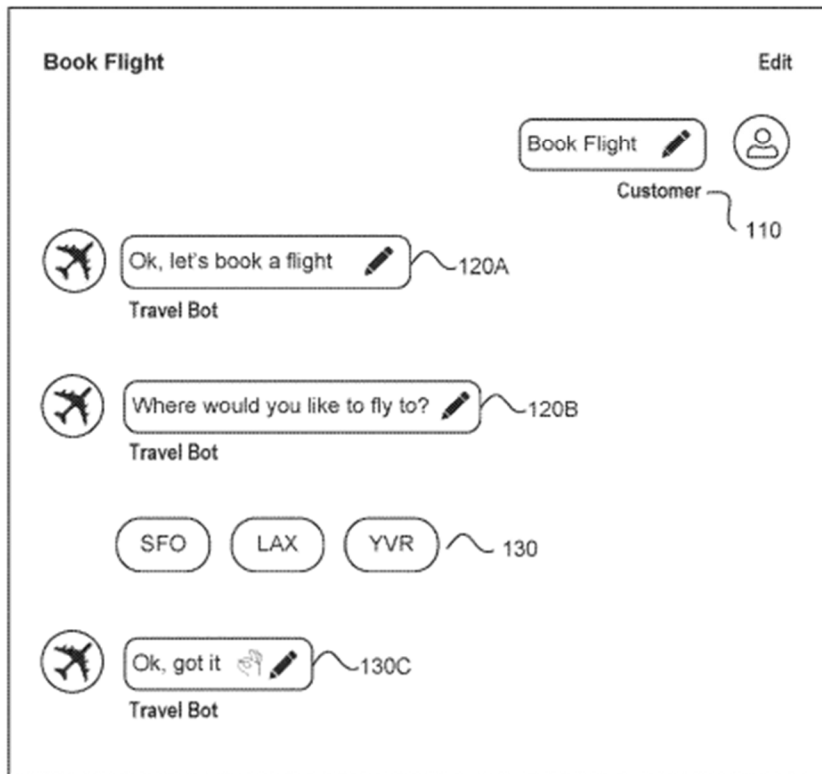


FIG. 1

natural language  
interface

Radhakrishnan discloses “leverag[ing] the unique interactions of a robotic process automation module with a UI of an application to *simulate user operations with the user device* to generate an operation record for automatically generating and transmitting a diagnosis and correction record to a workstation.” (EX1018, Abstract (emphasis added).) The RPA modules or “bots” are “trained to *mimic*

*user activity directly with a UI*” of the device. (EX1018, 5:49-50 (emphasis added); EX1003, ¶222.)

In order for Radhakrishnan’s RPA bot to be able to simulate user operations with the user device, its automation process must have been defined. (EX1003, ¶223.) As explained, “[RPA] bots can be ‘trained’ or essentially programmed to execute tasks.” (EX1018, 5:59-61.)

It would have been obvious to combine Krishnan and Radhakrishnan. (EX1003, ¶224.) Krishnan discloses using a chatbot to provide customer service to users. (EX1016, 2:7-11; EX1003, ¶224.) Radhakrishnan discloses an RPA bot that helps diagnose computer software-related errors, such as program crashes, file corruption, and operating errors that are typical when using “computer systems . . . to complete various tasks and increase user and/or process efficiency.” (EX1018, 1:8-10; EX1003, ¶224.) Both aim for better user convenience, lower operational costs, and increased user and/or process efficiency. (EX1016, 2:7-11; EX1018, 6:21-34; EX1003, ¶224.) Krishnan teaches achieving these objectives by using a chatbot as an interface between the user and, *e.g.*, a back-end system. (EX1016, 2:33-35; EX1003, ¶225.) Radhakrishnan teaches using an RPA bot to automatically execute processes, such as a back-end process, at the presentation layer of the computing system (without an API). (EX1018, 5:21-23, 5:49-51; EX1003, ¶225.)

Krishnan provides one example for its chatbot: “a user may visit or log into a website and have customer service requests fulfilled by a chat bot.” (EX1016, 2:10-12; EX1003, ¶226.) A POSITA would have been motivated to fulfill these customer service requests by an RPA bot, particularly when the customer service request involves more complicated tasks. (EX1018, 5:32-35; EX1003, ¶226.) Diagnosing and rectifying computer software-related errors is a complicated task, requiring a dedicated and specialized IT support staff. (EX1018, 1:9-15; EX1003, ¶226.) The RPA bot automatically and efficiently diagnoses and rectifies program crashes, file corruption, and operating errors, thereby lowering operational costs, and increasing user and/or process efficiency. (EX1018, 1:9-36; EX1003, ¶¶226-227.) A POSITA would be motivated to invoke the RPA bot in response to a conversation by the chatbot. (*Id.*, ¶228.) Information from the conversation of the user with the chatbot is provided to the RPA bot, which then executes the automation process (as designed). (*Id.*) Better convenience, costs, and efficiencies (Krishnan and Radhakrishnan’s objectives) results since no intervention is required when the RPA bot is invoked in response to the conversation. (*Id.*)

- b. 1[a]: “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 associated with the automation process;”**

Krishnan discloses a visual bot builder for a “chat bot [] to execute dialogs in response to user input and user requests.” (EX1016, 2:16-17; EX1003, ¶229.)

“The chat bot may respond to customer input by retrieving and providing the requested information, *requesting additional input or information from the user*, or performing an action and providing the user with status updates about the progress of the action.” (EX1016, 2:40-44 (emphasis added).)

Krishnan discloses a flight booking task as an example automation process, where the chatbot service prompts the user by “requesting additional information 120B,” such as a value for the destination parameter (Fig. 1 (annotated below)).

(EX1016, 2:65-66, Fig. 1; EX1003, ¶230.) The information requested is “necessary to book the flight, such as locations . . . , and then processes the request to book the flight.” (EX1016, 2:67-3:3; EX1003, ¶230.) That is, after the chatbot collects all the values for the parameters, it utilizes the values in the automation process of booking a flight. (See preamble of claim 1; EX1003, ¶230.) The conversation obtains from the user value(s) to parameter(s) associated with the automation process. (*Id.*)

obtain from  
the user one  
or more  
values to one  
or more  
parameters  
associated  
with the  
automation  
process

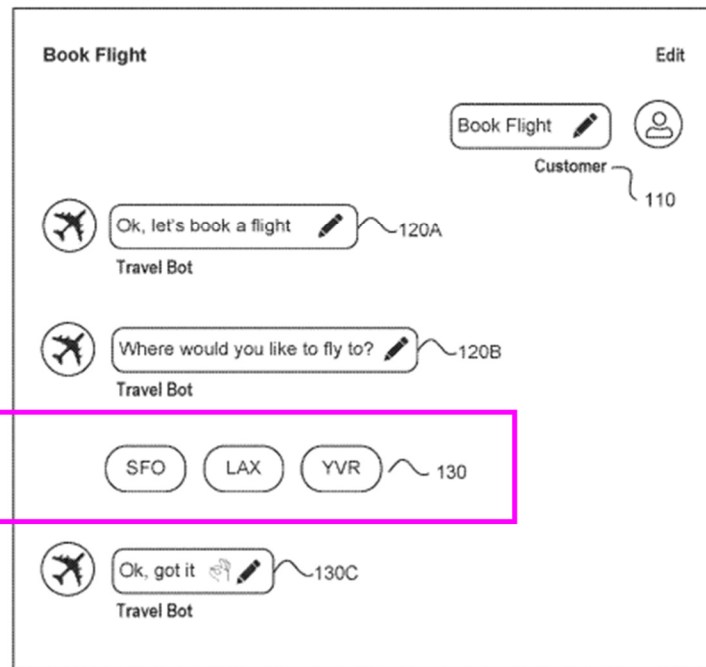


FIG. 1

It would have been obvious to combine Krishnan and Radhakrishnan, where the conversation (between the chatbot and user) obtains values (as taught by Krishnan) used in the automation process (as taught by Krishnan and Radhakrishnan). (EX1003, ¶231.)

**c. 1[b]: “associating the conversation with the automation process,”**

In Krishnan-Radhakrishnan, the values obtained from the user during the conversation implemented by the natural language interface are used in the automation process, so Krishnan-Radhakrishnan discloses associating the conversation with the automation process. (See element 1[a]; EX1003, ¶232.)

- d. 1[c]: “wherein the automation process is configured to utilize a displayed user interface of a computer program to simulate sequence of interactions with the displayed user interface of the computer program and execute a functionality of the computer program, wherein the automation process is a parameterized automation process depending on the one or more parameters; and”

Radhakrishnan discloses “leverag[ing] the unique interactions of a robotic process automation module with a user interface of an application to *simulate user operations with the user device* to generate an operation record for automatically generating and transmitting a diagnosis and correction record to a workstation.” (EX1018, Abstract (emphasis added).) The RPA modules or “bots” are “trained to *mimic user activity directly with a UI*” of the device. (EX1018, 5:49-50 (emphasis added); EX1003, ¶233.) “[T]he simulated operations generated by the RPA module may act as a *mirror of the actual user operations* and be used as an accurate, complete operation record which details their user operations in their entirety.” (EX1018, 11:32-36 (emphasis added).) The simulated user operations are for reproducing a program crash, file corruption, or the like, when executing a functionality of a computer program (*e.g.*, generating an email message). (EX1018, 2:4-6; EX1003, ¶233.)

After the chatbot collects the values for the parameters, the values are utilized in the automation process of, *e.g.*, booking a flight (Krishnan), generating

an email message (Radhakrishnan), or reproducing computer software-related errors (Radhakrishnan). (*See* element 1[a]; EX1003, ¶234.)

Krishnan-Radhakrishnan renders obvious a parameterized automation process having a parameter. (*Id.*)

- e. **1[d]: “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,”**

Krishnan’s Fig. 1 (annotated below) shows that it publishes the conversation, accessible to a user via the natural language interface. (EX1003, ¶235.)

## conversation of a user with a natural language interface

100

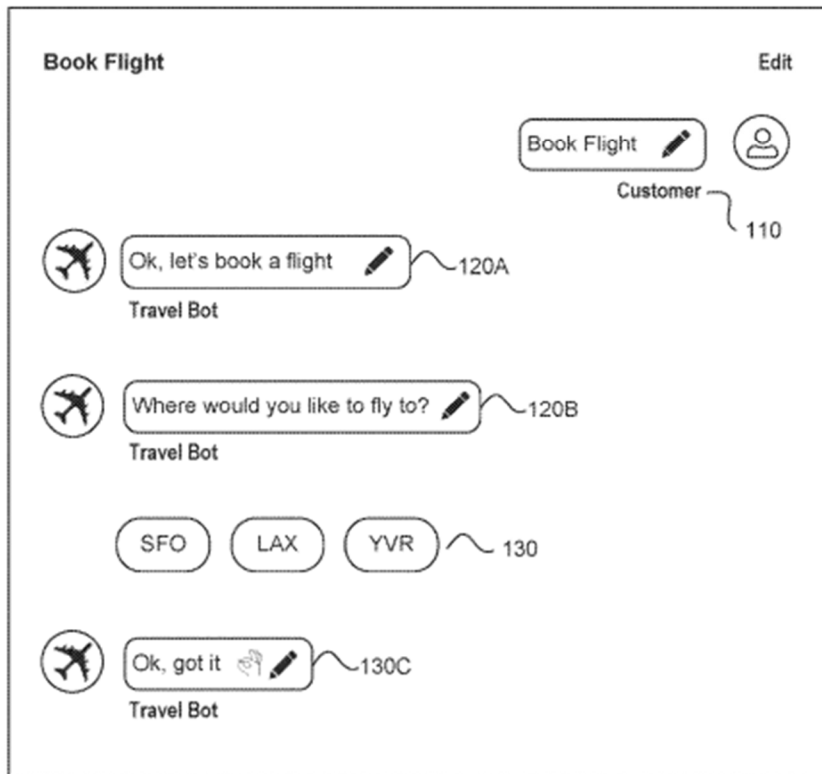


FIG. 1

**natural language  
interface**

The chatbot receives input from a user. (EX1003, ¶236.) For example, the chatbot greets the user with a welcome dialog, and then the user asks to book a flight, using the natural language interface (Fig. 1 (above)). (EX1016, 2:56-58; EX1003, ¶236.) “The chat bot may respond to customer input by retrieving and providing the requested information, requesting additional input or information

from the user, or performing an action and providing the user with status updates about the progress of the action. This *back-and-forth interaction between a user and chat bot may be referred to as a conversation.*” (EX1016, 2:40-46 (emphasis added).) The user is enabled to interact with the natural language interface in accordance with the conversation. (EX1003, ¶236.)

- f. **1[e]: “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.”**

Krishnan discloses a natural language interface, and both Krishnan and Radhakrishnan disclose an automation process. (*See* preamble of claim 1; EX1003, ¶237.) It would have been obvious to combine Krishnan and Radhakrishnan, where the (parameterized) automation process is invoked automatically by the chatbot (natural language interface). (*See* preamble of claim 1; EX1003, ¶237.) The values provided by the user to the natural language interface for parameters are used in the automation process. (*See* element 1[a]; EX1003, ¶237.)

4. **Claim 2: “The method of claim 1, 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.”**

Krishnan discloses a conversation flow that defines an order between conversation elements. (EX1003, ¶238.) The chatbot asks questions (question element), such as “Where would you like to fly to?” (below). (*See* element 1[a]; EX1003, ¶238.) “If the . . . user needs help . . . the developer, using bot-builder interface 200, may *configure how the bot would respond* to the message. For example, . . . *displaying a message, or by calling another function or dialog.*” (EX1016, 3:32-35 (emphases added).) After the chatbot collects all the values for the parameters, it utilizes the values in the flight booking task (automation process). (*See* element 1[c]; EX1003, ¶239.) In the flight booking task, it would have been obvious that the called function or dialog would be associated with booking a flight. (*Id.*) For example, when the user responds with destination 130, the chatbot provides a confirmation message “Ok, got it,” and then invokes the flight booking task (automation process) for the corresponding destination. (*Id.*) The conversation elements comprise at least a question element and an action element, where the action element is associated with the automation process. (*Id.*)

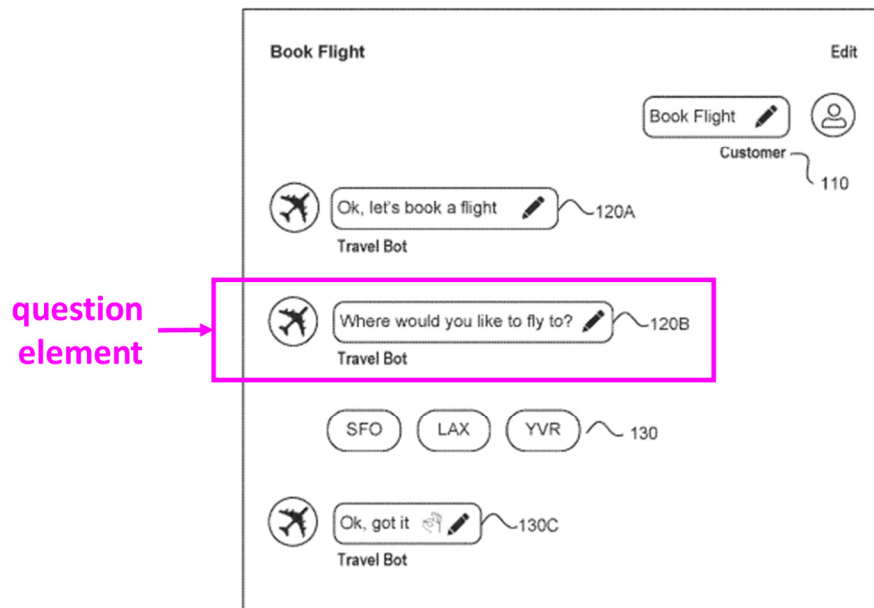


FIG. 1

5. **Claim 3: “The method of claim 2, wherein the conversation elements comprise at least one of: a message element and a condition element.”**

Claim 3 requires “at least one of: a message element and a condition element,” which means having one satisfies the claim. (EX1003, ¶240.)

Krishnan’s conversation elements comprise a message element (*e.g.*, “Ok, let’s book a flight” 120A,” “Ok, got it” 130C) (Fig. 1 (annotated below)). (*See* claim 2; EX1003, ¶241.) Krishnan also discloses a condition element (Fig. 3 (annotated below)), where the chatbot asks “Can I help with anything else?”

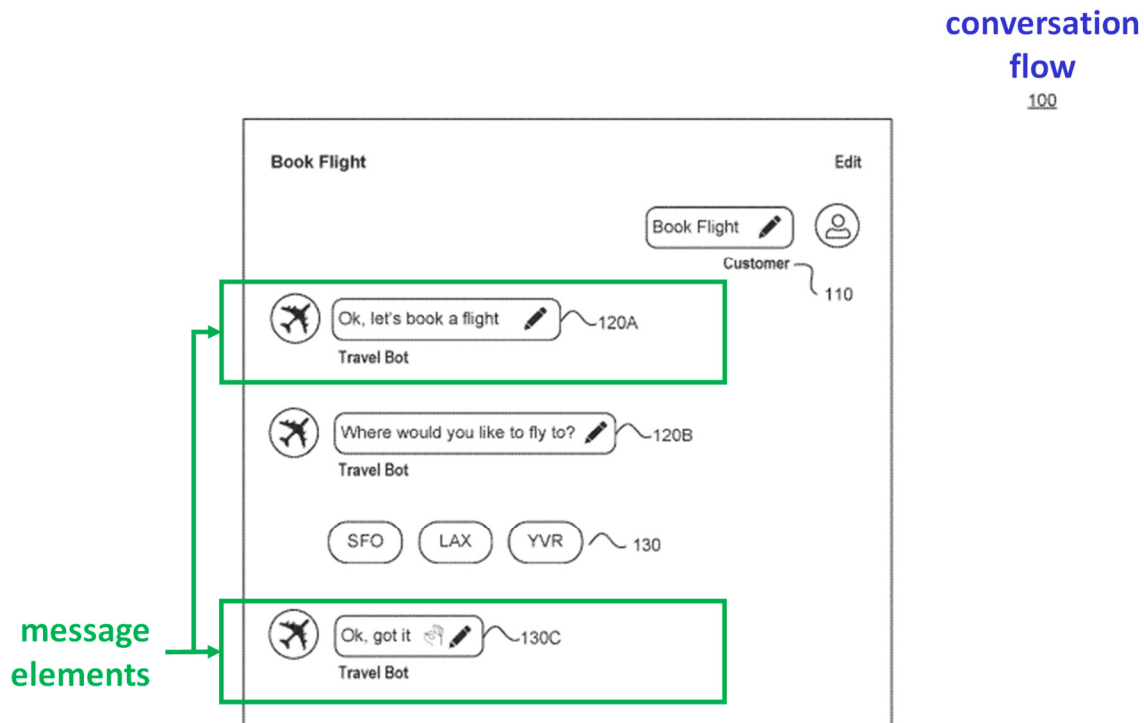


FIG. 1

6. **Claim 4:** “The method of claim 2, 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.”

Krishnan discloses “[b]ased on different user responses, the bot-builder interface 300 may enable a developer to cause the chat bot to call and execute different dialogs (conversation flows or interactions with the user).” (EX1016, 3:50-53.) Krishnan also discloses “*configur[ing] [] the bot [to] respond[] to different user input, by performing different actions*, requesting information, or calling various dialogs.” (EX1016, 6:25-28 (emphasis added); EX1003, ¶242.)

It would have been obvious for different elements to be associated with different users and different actions. (EX1003, ¶243.) One action element would be associated with a first user input and (first) automation process, and a second action element would be associated with a second user input and (second) automation process. (*Id.*) Performing different actions in response to different user inputs means that the natural language interface selectively invokes either the automation process or the second automation process based on interaction with the user. (*Id.*) For example, based on different user input, the chatbot (natural language interface) may trigger a flight booking task (automation process) associated with an action element, or trigger a food ordering action (second automation process) associated with a second action element. (EX1016, 2:27-33, 2:62-3:3, 7:38-45, Fig. 1; EX1003, ¶243.)

## 7. Claim 5

- a. **5[a]: “The method of claim 1, wherein the natural language interface is associated with a plurality of conversations, wherein the plurality of conversations comprise the conversation;”**

Krishnan discloses “configur[ing] [] the bot [to] *respond[] to different user input*, by performing different actions, requesting information, *or calling various dialogs.*” (EX1016, 6:25-28 (emphases added).) “During the course of a conversation, a chat bot may call or execute multiple different dialogs.” (*Id.*, 2:46-47.) For example, as Krishnan discloses, one conversation may be about a booking

a flight (automation process) (Fig. 1 (below)), and another conversation may be about ordering food (second automation process) (Fig. 5 (annotated below)). (*Id.*, 2:27-33, 7:38-45.) The plurality of conversations comprise the conversation about a booking a flight, which is “the conversation” of claim 1. (EX1003, ¶244.)

**conversation about  
automation process**



100

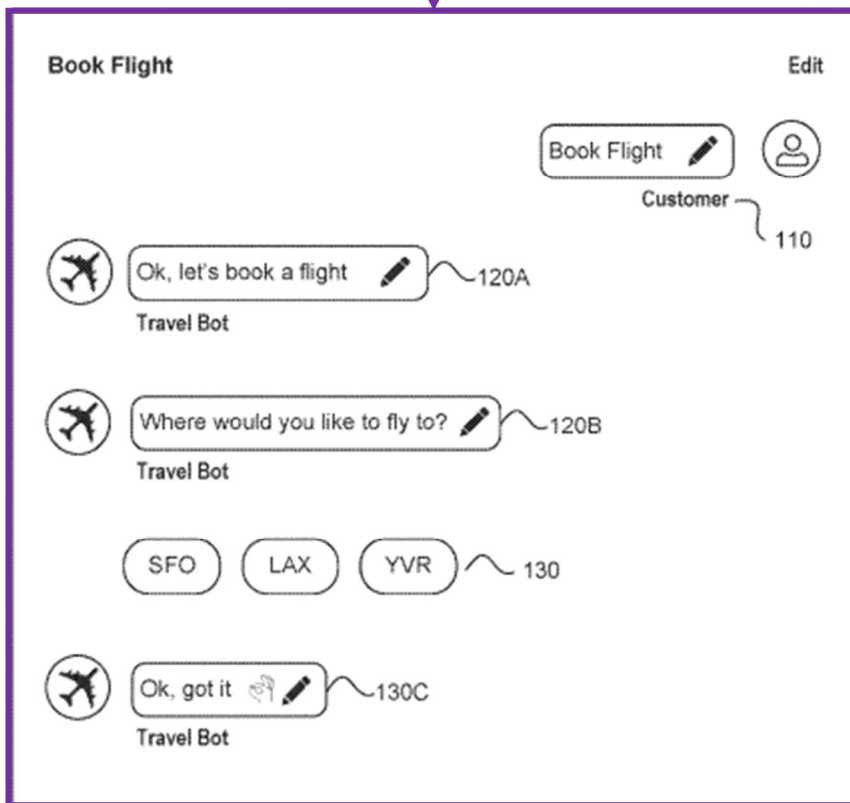


**FIG. 1**

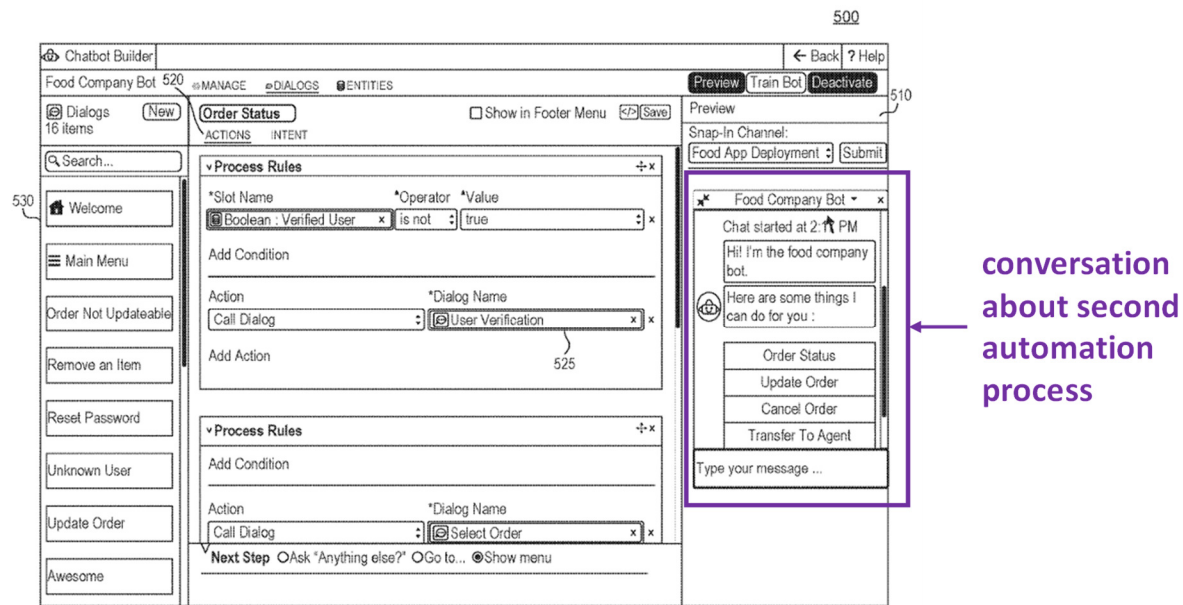


FIG. 5

- b. 5[b]: “wherein each of the plurality of conversations is associated with one or more terms,

Intent 610 in Krishnan’s Fig. 6A (annotated below) “shows *various phrases* the user can enter that may be interpreted as communicating an *intent*.” (EX1016, 7:30-32 (emphases added).) “Bot-builder interface 600 may train (or enable a developer to train) the bot to *identify different keywords or phrases that may be used to trigger an execution of the particular dialog*. . . Example input that may trigger an execution of the order status dialog include: check my order status, where is my order, it’s been too long, and where is my food.” (EX1016, 7:35-43 (emphasis added).) Different keywords or phrases that trigger execution of different dialogs means each of the plurality of dialogs (conversations) is associated with keywords/phrases (terms). (EX1003, ¶245.)

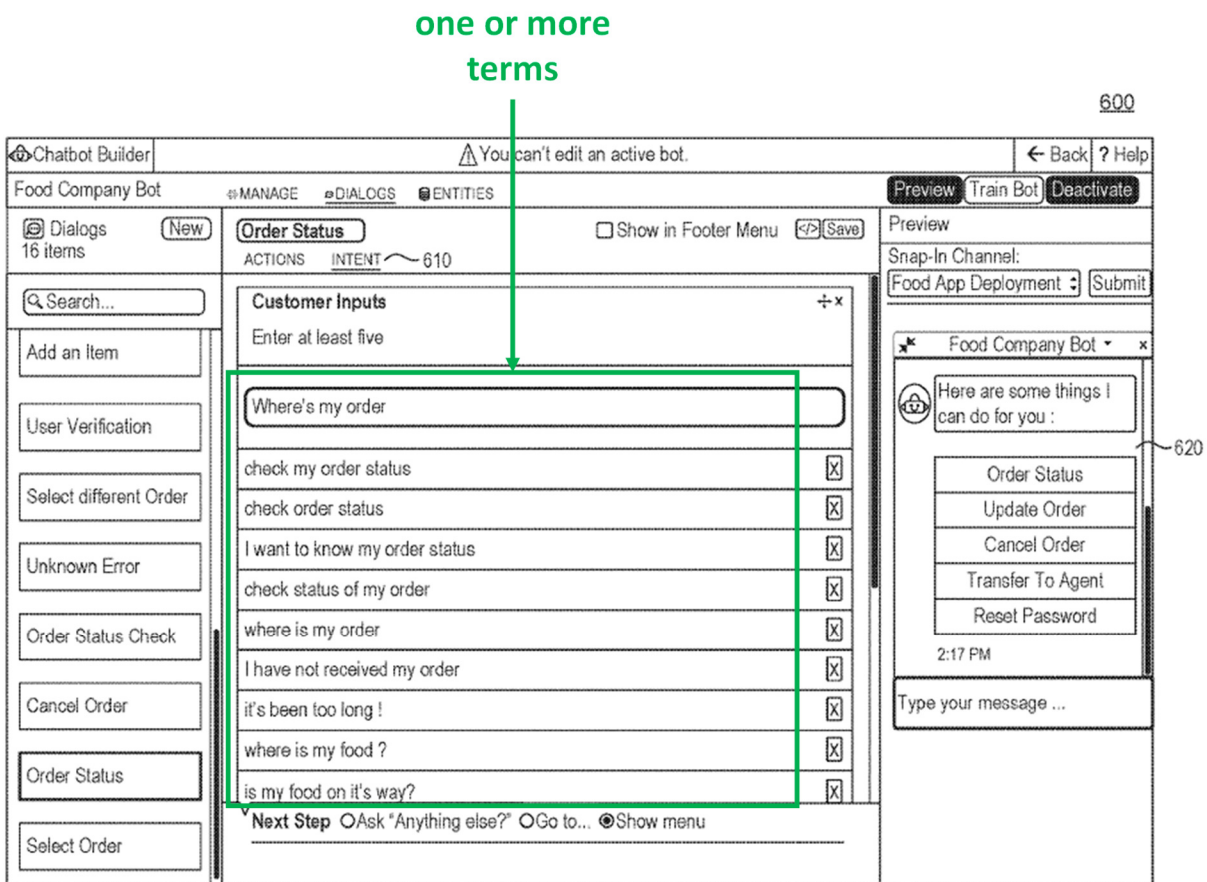


FIG. 6A

- c. 5[c]: “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,”

Krishnan’s “bot-builder interface 300 enables a developer to *select a call dialog function as a response to user input*. Then in a linear fashion, the developer may *select which dialog(s) are to be executed in response to the user intent* or response.” (EX1016, 4:15-20 (emphases added).) Intent 610 in Krishnan’s Fig. 6A (annotated below) “shows *various phrases* the user can enter that may be interpreted as communicating an *intent*.” (*Id.*, 7:30-32 (emphases

added).) A dialog (conversation) is selected from a plurality of dialogs based on phrases interpreted as intent (user intent matching terms) (Fig. 10 (annotated below)). (EX1003, ¶246.)

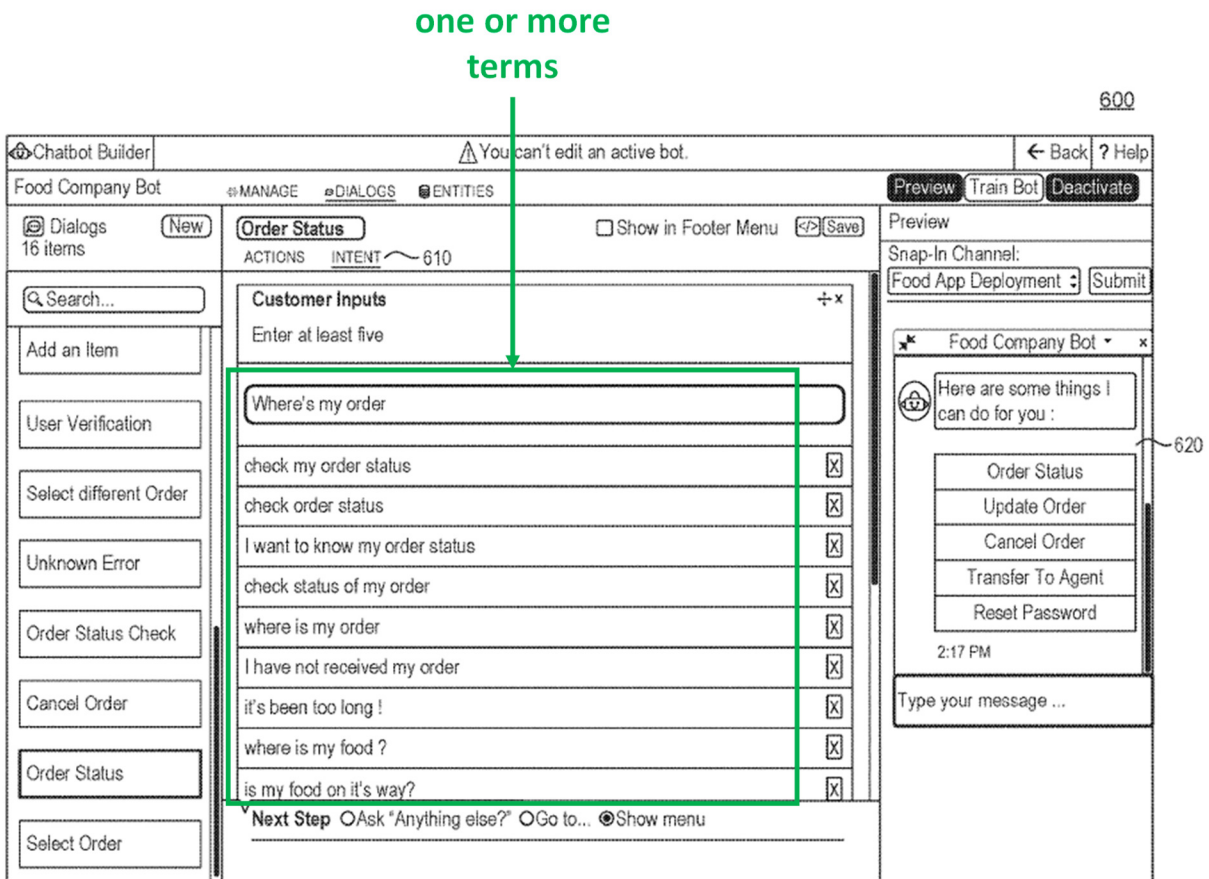


FIG. 6A

select a  
conversation  
from the  
plurality of  
conversations  
based on a  
user intent  
matching the  
one or more  
terms

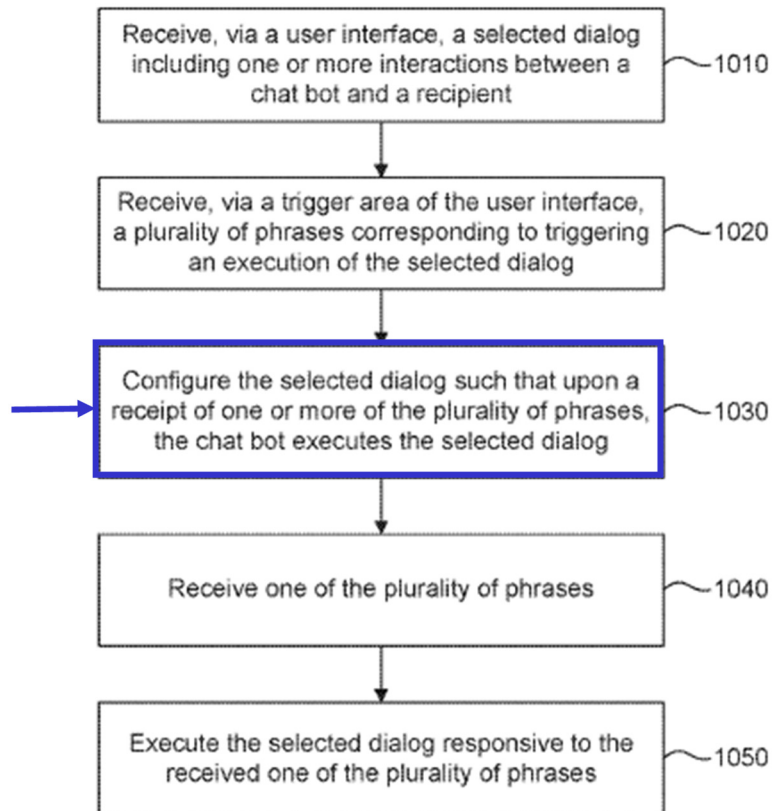


FIG. 10

- d. **5[d]: “wherein the user intent is determined based on interaction of the user with the natural language interface.”**

In Krishnan, the user’s intent is determined based on the responses that the

user provides to the natural language interface. (EX1003, ¶247.) “For example, the user may input ‘something sweet,’ ‘dessert,’ or ‘ice cream.’ Or, for example, the user may mistype or misspell ‘dessert’ and enter ‘desert’ instead. . . . the bot may respond ‘Would you like a desert?’ If the user answers ‘yes,’ this may serve as confirmation that the appropriate dessert dialog should be launched.”

(EX1016, 8:7-15; EX1003, ¶247.)

## 8. Claim 9:

- a. **9[a]: “The method of claim 1, wherein the automation process is configured to execute a new functionality of the computer program, wherein the new functionality is defined based on the values to the one or more parameters,”**

Radhakrishnan discloses “[b]ots typically comprise some form of developer tools for *defining jobs or tasks*.” (EX1018, 5:64-65 (emphasis added).)

Radhakrishnan also discloses “[b]ots may further comprise a process recorder for *capturing and recording a sequence of user actions for further training or completing tasks*.” (EX1018, 5:64-6:8 (emphasis added).) A POSITA would understand “further training” as executing a new functionality of the computer program. (EX1003, ¶248.) The sequence of user actions are values to the parameters in the automation process, so the new functionality is defined based on the values. (*See* element 1[c]; EX1003, ¶248.)

It would have been obvious to combine Krishnan and Radhakrishnan, where

the automation process and RPA bots execute defined jobs/tasks, or are configured for further training or completing tasks. (*See* preamble of claim 1; EX1003, ¶249.)

**b. 9[b]: “without relying on a dedicated Application Programming Interface (API) of the computer program.”**

Radhakrishnan discloses “[t]he RPA module may typically interact[] with a *presentation layer of the computer system (i.e., the UI)* and avoids more demanding interaction with any underlying data layers or logic of the underlying system in order to instruct operation of the user device, computer system, application, or the like.” (EX1018, 5:10-15 (emphasis added).) Radhakrishnan explains its without-API RPA module “avoid[s] the costly and time consuming process of building a new and complicated API-based system[] from ground up.” (*Id.*, 6:25-29; EX1003, ¶250.) “By leveraging robotic process automation technology, the present invention reduces the amount of computing resources required to execute tasks when compared with executing the same tasks using a traditional application programming interface (API).” (EX1018, 6:21-25.) Executing is performed without relying on a dedicated API of the computer program. (EX1003, ¶250.)

It would have been obvious to combine Krishnan and Radhakrishnan, where the RPA bot interacts with the presentation layer of the computer system (without relying on a dedicated API). (*See* preamble of claim 1; EX1003, ¶251.)

**9. Claim 10: “The method of claim 1, wherein the functionality of the computer program comprises inputting data to a field in the displayed user interface.”**

Krishnan discloses utilizing the values of the parameters received by the natural language interface in the automation process. (*See* element 1[a]; EX1003, ¶252.)

Radhakrishnan’s RPA bot is “trained to mimic user activity directly with a UI” (*e.g.*, GUI). (EX1018, 5:49-50, 7:14-15; EX1003, ¶253.) The user’s operations include “completing a field.” (EX1018, 11:17-19; EX1003, ¶253.) Since the RPA bot mirrors the user’s operations on a GUI, the displayed GUI must comprise the input fields. (*Id.*) Radhakrishnan discloses the functionality of the computer program comprises inputting data to a field in the displayed UI. (*Id.*)

As discussed, it would have been obvious to combine Krishnan and Radhakrishnan. (*See* preamble of claim 1; EX1003, ¶254.) The combination obtains values from the user using the chatbot (natural language interface), as taught by Krishnan, and inputting data to a field in the displayed UI, as taught by Radhakrishnan. (*Id.*)

**10. Claim 11**

- a. Preamble: “A computerized apparatus for defining an automation process, wherein the automation process is configured 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:”**

To the extent the preamble is limiting (which Petitioner does not concede), Krishnan-Radhakrishnan renders obvious the preamble.

Krishnan-Radhakrishnan renders obvious the preamble of claim 1. The preamble of claim 11 is similar to the preamble of claim 1, but requires a “computerized apparatus” for defining an automation process. (EX1003, ¶255.) Radhakrishnan discloses “[t]he RPA module is typically [a] specialized computer software or hardware installed on a device that mimics user interaction with a user interface (UI).” (EX1018, 5:6-9.) Krishnan similarly discloses a computer system. (EX1016, 1:17-19.) Krishnan and Radhakrishnan disclose computerized apparatuses. (EX1003, ¶255.)

The preamble of claim 11 also requires the “computerized apparatus compris[e] a processor and coupled memory.” (*Id.*, ¶256.) A device that has computer software or hardware installed on it is a computer system comprising a processor and coupled memory. (*Id.*)

**b. Elements 11[a]-11[e]**

Elements 11[a]-11[e] mirror elements 1[a]-1[e], which Krishnan-Radhakrishnan renders obvious. (EX1003, ¶¶257-261.)

## 11. Claims 12-15

Claims 12-15 mirror claims 2-5, which Krishnan-Radhakrishnan renders obvious. (EX1003, ¶¶262-265.)

## 12. Claim 18

- a. **Preamble: “A non-transitory computer readable medium for defining an automation process, wherein the automation process is configured 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:”**

To the extent the preamble is limiting (which Petitioner does not concede), Krishnan-Radhakrishnan renders obvious the preamble.

Krishnan-Radhakrishnan renders obvious the preamble of claim 1. The preamble of claim 18 is similar to the preamble of claim 1, but requires a “non-transitory computer readable medium” for defining an automation process, “the non-transitory computer readable medium retaining program instructions, which program instructions when read by a processor cause the processor to perform.” (EX1003, ¶266.)

Krishnan discloses a “computer usable or readable storage device” of its computer system having stored thereon computer software (control logic) and/or data.” (EX1016, 11:43-46.) Radhakrishnan discloses a “computer-readable

medium having computer-executable program embodied in the medium.”

(EX1018, 13:44-45.) Krishnan-Radhakrishnan renders obvious the preamble of claim 18. (EX1003, ¶267.)

**b. Elements 18[a]-18[e]**

Elements 18[a]-18[e] mirror elements 1[a]-1[e], which Krishnan-Radhakrishnan renders obvious. (EX1003, ¶¶268-272.)

**13. Claims 19, 20**

Claims 19 and 20 mirror claims 2 and 5, which Krishnan-Radhakrishnan renders obvious. (EX1003, ¶¶273-274.)

**VI. THE BOARD SHOULD NOT DENY INSTITUTION UNDER *FINTIV***

**A. A Final Written Decision will Issue Before Trial**

A schedule has not yet been issued, and no trial date has been set, in the corresponding district court litigation. A Final Written Decision will issue in February 2025, whereas the trial date for the district court case (which has not been set) will likely be after.

**B. Merits of the Petition Support Institution**

As discussed, the prior art teaches every element of the challenged claims, and are unpatentable. The merits of the petition weigh strongly in favor of institution. *See* USPTO Interim Procedure for Discretionary Denials, 2 (“the PTAB will not rely on the *Fintiv* factors to discretionarily deny institution . . . where a petition presents compelling evidence of unpatentability.”).

In sum, the *Fintiv* factors in the aggregate weigh against the Board exercising its discretion to deny institution.

## **VII. THE BOARD SHOULD NOT DENY INSTITUTION UNDER 35 U.S.C. § 325(D)**

The Petition does not raise the same or substantially the same art previously presented to the Office, nor does the Petition raise the same or substantially the same arguments previously presented to the Office in the examination of the '732 patent. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020). The Examiner identified two prior art references during the course of prosecution as the closest art to the substance of the independent claims. (EX1002, 85-92.) However, none of Petition's prior art was characterized or discussed during prosecution. The Petition's prior art teaches the limitations that Applicant needed to overcome the prosecution's prior art, making up for the deficiencies, and are not cumulative. (EX1003, ¶¶32-36.) Thus, the Board should not deny institution under 325(d).

## **VIII. NOTICES AND STATEMENTS**

Pursuant to 37 C.F.R. § 42.8(b)(1), Whatfix Inc. and Whatfix Private Limited are the real parties-in-interest for Petitioner.

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner identifies the following related matters:

*WalkMe Ltd., v. Whatfix Inc.*, No. 1:23-cv-00227-MN (D. Del.);

*Whatfix Inc. v. WalkMe Ltd.*, IPR2023-01368 (P.T.A.B. August 30, 2023).

Pursuant to 37 C.F.R. § 42.8(b)(3), Petitioner identifies the following counsel (and a power of attorney accompanies this Petition).

| Lead Counsel                                                                                                                                                                                                                                  | First Backup Counsel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alex S. Yap<br>Registration No.: 60,609<br>MORRISON & FOERSTER LLP<br>707 Wilshire Boulevard Suite 6000<br>Los Angeles CA 90017-3543<br>Tel: (213) 892-5688<br>Fax: (213) 892-5454<br>Email: <a href="mailto:AYap@mofo.com">AYap@mofo.com</a> | Mehran Arjomand<br>Registration No.: 48,231<br>MORRISON & FOERSTER LLP<br>707 Wilshire Boulevard Suite 6000<br>Los Angeles CA 90017-3543<br>Tel: (213) 892-5630<br>Fax: (213) 892-5454<br>Email: <a href="mailto:marjomand@mofo.com">marjomand@mofo.com</a><br><br>Jean Nguyen<br>Registration No.: 71,051<br>MORRISON & FOERSTER LLP<br>707 Wilshire Boulevard Suite 6000<br>Los Angeles CA 90017-3543<br>Tel: (213) 892-5295<br>Fax: (213) 892-5454<br>Email: <a href="mailto:JNguyen@mofo.com">JNguyen@mofo.com</a> |

Pursuant to 37 C.F.R. § 42.8(b)(4), service information for lead and back-up counsel is provided above. Petitioner consents to electronic service by email to [Whatfix-Walkme-IPR@mofo.com](mailto:Whatfix-Walkme-IPR@mofo.com).

Pursuant to 37 C.F.R. § 42.104(a), Petitioners certify that the '732 patent is available for *inter partes* review and that Petitioners are not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

The USPTO is authorized to charge any required fees, including the fee as set forth in 37 C.F.R. § 42.15(a) and any excess claim fees, to Deposit Account No. **03-1952** referencing Docket No. **28135-00000.07**.

Dated: September 20, 2023

Respectfully submitted,

By /s/ Alex S. Yap  
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Email: [AYap@mofo.com](mailto:AYap@mofo.com)

**Certification of Word Count (37 C.F.R. § 42.24)**

I hereby certify that this Petition for *Inter Partes* Review has 13,999 words (as counted by the “Word Count” feature of the Microsoft Word™ word-processing system), exclusive of “a table of contents, a table of authorities, mandatory notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing.”

Dated: September 20, 2023

By /s/ Alex S. Yap

Alex S. Yap

**Certificate of Service (37 C.F.R. § 42.6(e)(4) and 42.205(a))**

I hereby certify that the attached Petition for *Inter Partes* Review and supporting materials were served as of the below date by UPS, which is a means at least as fast and reliable as U.S. Express Mail, on the Patent Owner at the correspondence address indicated for U.S. Patent No. 11,258,732:

Mark Koffsky  
Gary Serbin  
Koffsky Schwalb LLC  
Customer Number: 106928  
500 Seventh Avenue  
8th Floor  
New York, NY 10018

Dated: September 20, 2023

/s/ Alex S. Yap  
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