



INTERNAL
SAP Fieldglass
2021-02-02

SAP Fieldglass In-App Assistant

Technical Overview

1 SAP Fieldglass In-App Assistant Technical Overview

The SAP Fieldglass In-App Assistant is an interactive chatbot that assists users with tasks such as creating, viewing, approving, and revising certain documents within the SAP Fieldglass desktop application.

The feature uses natural language processing through the SAP Conversational AI to convert user queries into intents (the task a user wants to accomplish) and the objects needed to accomplish the task. The chatbot then responds with the appropriate action or actions needed to complete the task.

A company configuration is required to enable this feature. Once enabled, users can access the chatbot by signing in to the SAP Fieldglass application and clicking the Assistant icon on the application's header bar.

General Architecture

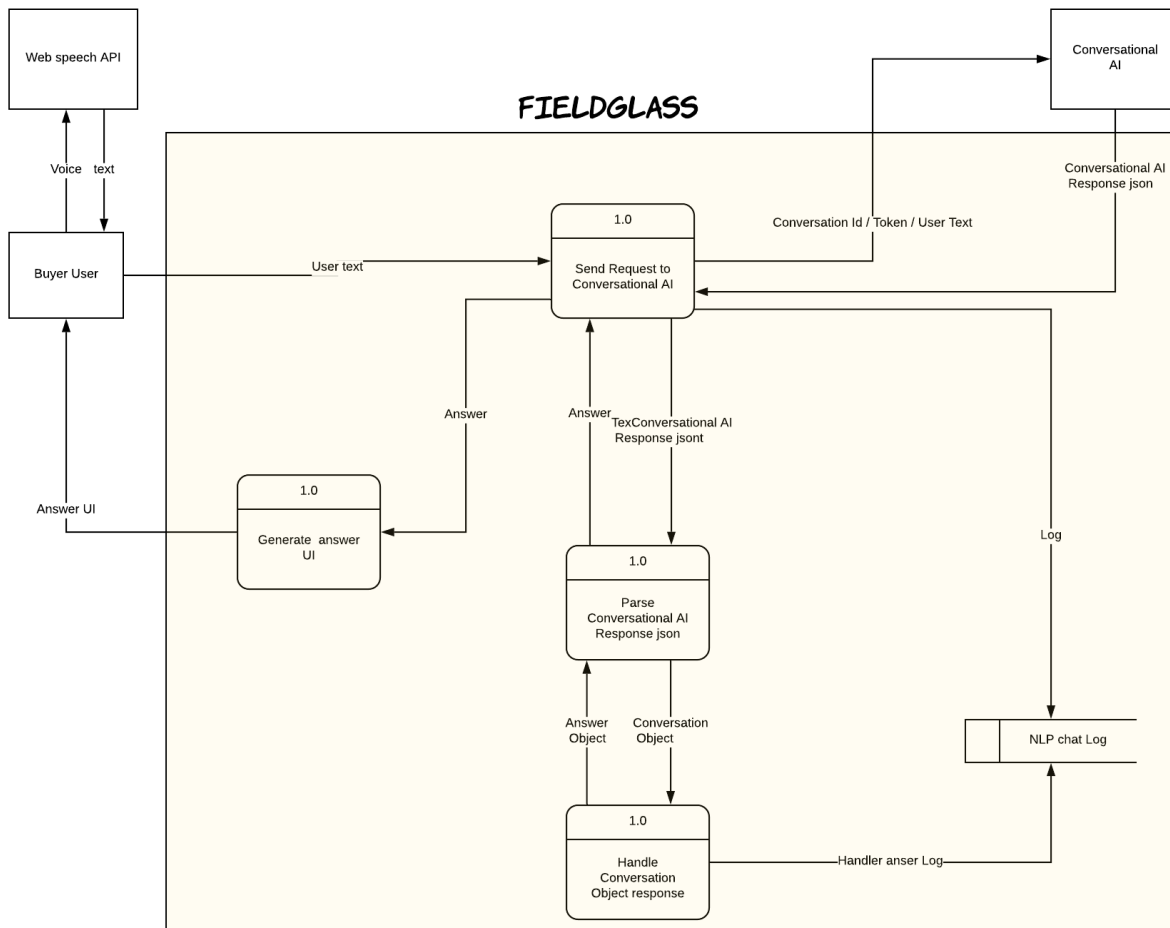
The SAP Fieldglass In-App Assistant is an extension of the SAP Fieldglass desktop application; the latter is required for operation. Using the SAP Conversational AI, the chatbot assists users with several tasks including:

- Approving documents, including time sheets, expense sheets, job postings, decision forms, invoices, and work order revisions
- Creating documents (job postings, statements of work, decision forms)
- Viewing workers, job postings, profile workers, and statements of work
- Revising temporary workers

Architectural Flow

After sign-in, the following high-level flow takes place for buyer users when using the SAP Fieldglass In-App Assistant:

1. The user inputs text into the chatbot (or text is inputted based on voice-to-text translation).
2. The request is sent to the SAP Conversational AI for processing.
3. The request is parsed and an appropriate response is generated. At this point, the request and answer are logged.
4. The response is generated and provided to the user in the chatbot.



SAP Fieldglass In-App Assistant Architectural Flow

Technologies

SAP Fieldglass Application

The SAP Fieldglass In-App Assistant is built using Java and TypeScript/Less to connect SAP Fieldglass to the SAP Conversational UI.

Java is used for:

- Sending requests to the SAP Conversational AI and receive JSON responses using the endpoint URL and token.
- Choosing which answers SAP Fieldglass In-App Assistant provides, depending on the object attributes received from the SAP Conversational AI response. Additional handlers can be added in the future to support additional actions.
- Resolving all chat steps for the chatbot.
- Saving the state of the chatbot and conversations.
- Persisting chat logs.
- Injecting the results into the UI TypeScript layer.

UI components are written in TypeScript/Less and are compiled to JavaScript and CSS, and are used for:

- Returning appropriate components from the UI framework.

- Voice recognition integration.

Additional component types can be created in the future and can be plugged into the framework.

SAP Conversational AI

The SAP Conversational AI (the natural language processing component of the feature) runs on Amazon Web Services (located in Dublin, Ireland) and was built using the following technologies:

- React (a JavaScript library for user interfaces)
- Ruby
- Python
- C
- NodeJS

The SAP Conversational AI team plans on making this functionality available on the SAP Business Technology Platform (previously SAP Cloud Platform) in North America and other regions by 2020.

Security

A security penetration test has been conducted on the SAP Fieldglass application and is executed on a yearly basis. Each major release, the entire code base is scanned with a static code analysis tool. Results are reviewed by the SAP Fieldglass Application Security Team and our Chief Architect.

SAP Fieldglass logs and saves text entered by users into the SAP Fieldglass In-App Assistant and responses provided. Stored data is purged periodically (approximately every six months). No personally identifiable information is stored with the queries to and responses provided by the SAP Fieldglass In-App Assistant. The SAP Conversational AI platform further performs anonymization where recognized entities have potential personal data replaced by generic or random data.

If a user attempts to use the SAP Fieldglass In-App Assistant to perform an action that they don't have permission in the application to perform, the chatbot informs them that they lack permission to do so.

Voice-to-text conversion is supported by the SAP Fieldglass In-App Assistant, but is disabled by default. SAP Fieldglass can enable the functionality upon request. When used, voice recordings are sent to Google for conversion to text and then passed back to the SAP Fieldglass In-App Assistant for processing.

Release Management



As a feature within SAP Fieldglass, the SAP Fieldglass In-App Assistant is released twice per year (in May and November). Although the SAP Conversational UI can be updated outside of this release cycle, SAP Fieldglass only uses the current version as of the SAP Fieldglass release.

Important Disclaimers and Legal Information

Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information.

About the icons:

- Links with the icon : You are entering a Web site that is not hosted by SAP. By using such links, you agree (unless expressly stated otherwise in your agreements with SAP) to this:
 - The content of the linked-to site is not SAP documentation. You may not infer any product claims against SAP based on this information.
 - SAP does not agree or disagree with the content on the linked-to site, nor does SAP warrant the availability and correctness. SAP shall not be liable for any damages caused by the use of such content unless damages have been caused by SAP's gross negligence or willful misconduct.
- Links with the icon : You are leaving the documentation for that particular SAP product or service and are entering a SAP-hosted Web site. By using such links, you agree that (unless expressly stated otherwise in your agreements with SAP) you may not infer any product claims against SAP based on this information.

Videos Hosted on External Platforms

Some videos may point to third-party video hosting platforms. SAP cannot guarantee the future availability of videos stored on these platforms. Furthermore, any advertisements or other content hosted on these platforms (for example, suggested videos or by navigating to other videos hosted on the same site), are not within the control or responsibility of SAP.

Beta and Other Experimental Features

Experimental features are not part of the officially delivered scope that SAP guarantees for future releases. This means that experimental features may be changed by SAP at any time for any reason without notice. Experimental features are not for productive use. You may not demonstrate, test, examine, evaluate or otherwise use the experimental features in a live operating environment or with data that has not been sufficiently backed up.

The purpose of experimental features is to get feedback early on, allowing customers and partners to influence the future product accordingly. By providing your feedback (e.g. in the SAP Community), you accept that intellectual property rights of the contributions or derivative works shall remain the exclusive property of SAP.

Example Code

Any software coding and/or code snippets are examples. They are not for productive use. The example code is only intended to better explain and visualize the syntax and phrasing rules. SAP does not warrant the correctness and completeness of the example code. SAP shall not be liable for errors or damages caused by the use of example code unless damages have been caused by SAP's gross negligence or willful misconduct.

Gender-Related Language

We try not to use gender-specific word forms and formulations. As appropriate for context and readability, SAP may use masculine word forms to refer to all genders.

© 2021 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company. The information contained herein may be changed without prior notice.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

Please see <https://www.sap.com/about/legal/trademark.html> for additional trademark information and notices.