

AWS Ecosystem Business Unit – Generative AI COE

Case Intelligence Solution



Overview

Pharmaceutical companies around the world typically offer patient support services where patients can report medication side effects, usage and symptoms. Patients provide this information through phone calls, emails, written forms and other channels. Managing these manual intake processes is time-consuming and results in missing key details during information exchange.

GenAI powered Case Intelligence solution automates case intake from various channels like email, call transcripts and handwritten forms. This streamlines the message intake process and ensures all details are captured verbatim, regardless of the channel patients may use for submitting their reports.

Process flow

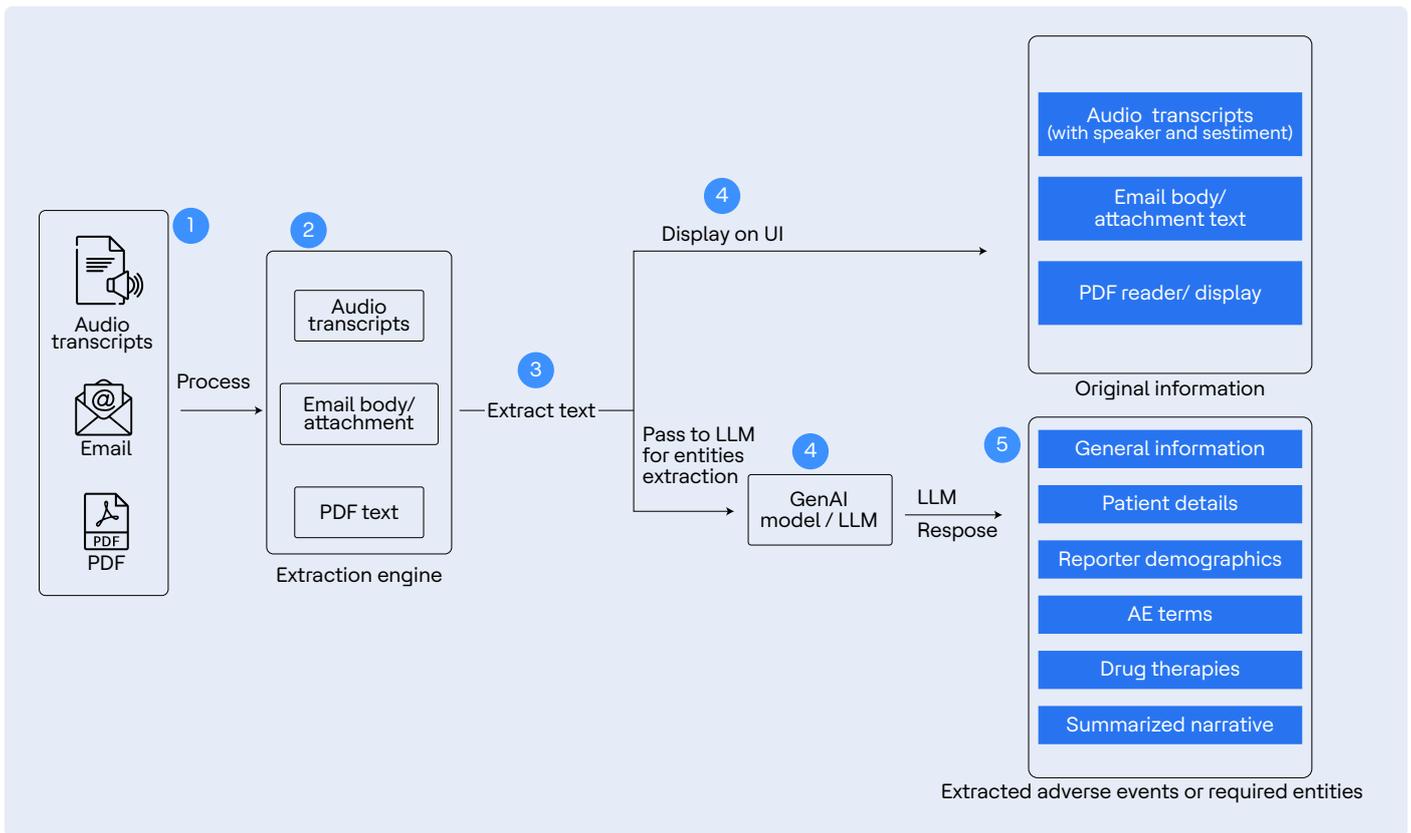
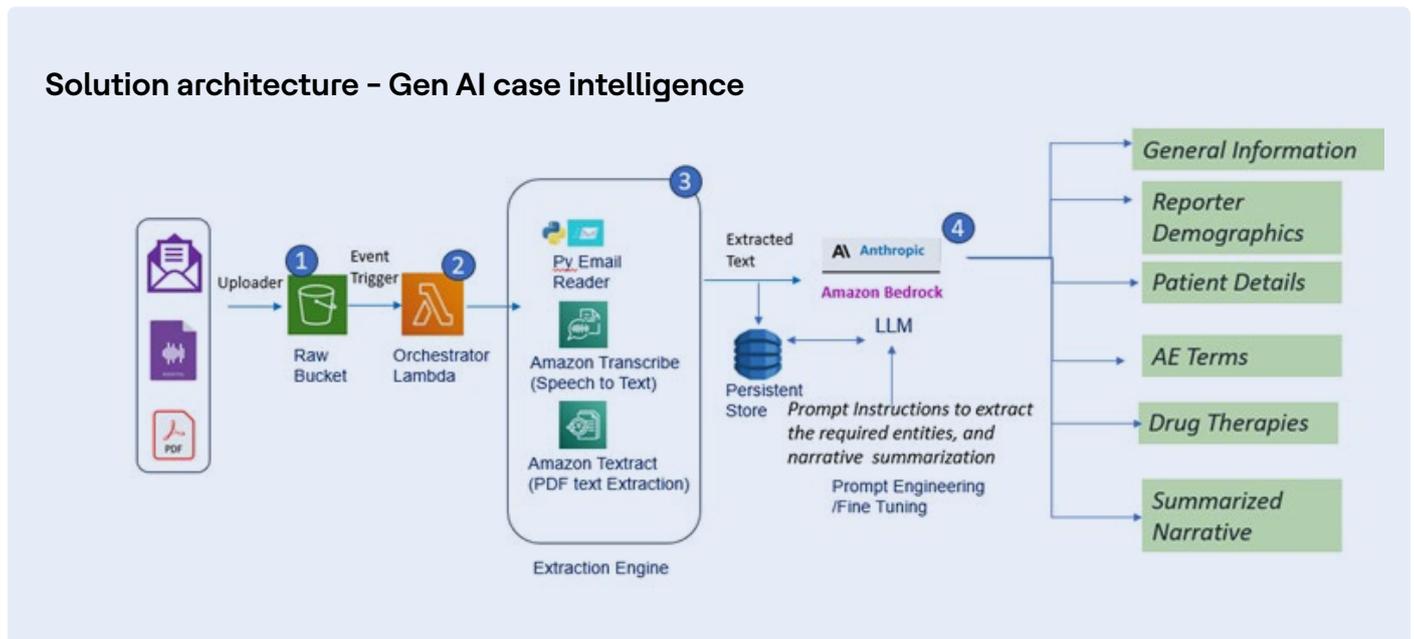


Figure 1: - Patient detail / adverse events extraction

- Audio / PDF file upload, new email event triggers the process to start the extraction process.
- Depending upon the source of the trigger, the respective LLM extraction workflow jobs are executed: -
 - Audio file – Speech-to-text extraction
 - Email body/attachment- Email text parsing and any attachments processed.
 - PDF (Handwritten / Digital) – Text extraction and parsing from PDF.
- The extracted text is further consumed by the UI layer and Generative AI model
- The interactive UI displays the respective extracted text based on the source onto the screen (e.g. for a PDF, it shows a PDF reader along with the extracted text from the PDF; for audio, it shows the transcribed text with speaker identification, etc.).
- The Generative AI model takes the extracted raw text input and the required output entities template to extract entity definitions from the extracted raw text. It also has a feature to narrate the summary of the patient complaint information.

Technical architecture



Solution benefits



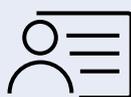
Supports extraction of data from diverse input formats, including PDFs, images, audio transcripts, email bodies and attachments. This enables handling unstructured data from multiple sources.



Advanced natural language processing capabilities to infer contextual relationships which are not explicitly stated, eg: reporter relation with the patient based on the given context.



Customizable output formatting to present extracted information structured according to the required standards or specifications. Supports adaptable integration with downstream processes.



Incorporates human-in-the-loop functionality where subject matter experts can provide feedback to improve output quality over time progressively.



Industry adoption:- Although the solution is designed for the life sciences and healthcare industries, the approach and framework presented in this solution can be easily extended and adopted across various industries.

Industry	Solution adoption
Financial services	Extracting key details such as names, addresses, account numbers, etc., from documents, including loan applications, account opening forms and insurance claims and consolidating this information into unified customer profiles.
Marketing	Extracting names, contact information and preferences from forms, including surveys, contest entries and mailing list sign-ups and compiling this data into customer profiles for marketing automation purposes.
Legal	Extracting key details from legal documents, including contracts, agreements and filings for due diligence, analysis and summarizing contract terms for tracking / reporting
HR	Extracting information including names, education, skills and experience from resumes and employment forms and compiling candidate profiles for recruiting and hiring purposes.
Customer service (Across)	Extracting customer information, product/service details and complaint summaries from customer service forms/records. And consolidating into comprehensive customer case profiles.



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