

# Health Insurance Claim Validator AI Agent

## 1. Project Overview

**Project Name:** Health Insurance Claim Validator AI Agent

**Platform:** Automation Anywhere (A360)

**Document Scope:** PDF-based documents containing textual data only

This AI Agent automates the end-to-end health insurance claim validation process by analysing incoming insurance-related emails, extracting claim documents, validating claim completeness using AI skills, and responding to customers with accurate and traceable outcomes.

The solution significantly reduces manual effort, improves turnaround time, and ensures consistent and auditable claim processing.

---

## 2. Business Problem

Health insurance teams typically:

- Manually review incoming emails
- Open and verify attachments
- Check claim completeness
- Extract key claim details
- Respond to customers

This repetitive process is time-consuming, error-prone, and delays customer communication.

---

## 3. Solution Objective

The objective of this AI Agent is to:

- Automatically identify insurance-related emails
- Extract and store claim documents
- Validate claim completeness using AI
- Extract key claim information
- Enable Human-in-the-Loop (HITL) validation
- Send final customer notifications

- Ensure end-to-end traceability and exception handling
- 

## 4. External Applications Used

Apart from LLM-based AI skills, the solution integrates with:

### 4.1 Microsoft Outlook

- Reads incoming emails from Inbox
- Processes the first 10 emails per execution
- Sends final responses to customers
- Moves processed emails to a designated folder

### 4.2 Microsoft OneDrive

- Stores email attachments (claim documents)
  - Uses timestamp-based folder structure
  - Acts as a reference repository for insurance agents
- 

## 5. Folder Structure (Bot Store)

Bot Store

```
|
|
|├Health Insurance
|
| |├Agent
| |
| | |└Health Insurance Agent
| |
| |
| |└Tools
|
| |├Task Bot - Email Attachment Fetcher
|
| |├Task Bot - Claim Document Data Extraction
|
| |├Task Bot - Dispatch Insurer Notification
|
| |├AI Skill - Insurance Email Classifier
|
| |├AI Skill - Claim Data Intelligence
|
| |├API Task - Claim Extraction Service
```

- | ↳ API Task - JSON Response Parser
- | ↳ Form - Health Insurance HITL Form

## 6. AI Agent Role Definition

### Role:

Health insurance claims processing specialist with expertise in:

- Email parsing
- Document data extraction
- AI-assisted claim analysis
- Automated insurer communication workflows

The agent is intelligent enough to route input and output variables automatically across tasks based on tool definitions.

---

## 7. Tools and Components

### Tool 1: Email Attachment Fetcher (Task Bot)

- Connects to **local Outlook** (API skipped intentionally)
- Loops through the **first 10 emails** in Inbox
- Extracts:
  - Email subject
  - Email body
- Sends email content to **Insurance Email Classifier AI Skill**
- AI Skill returns JSON: Valid or Invalid

### Logic:

- If Invalid → Continue loop
- If Valid and no attachment:
  - Send reply requesting documents
  - Move email to Processed folder
- If Valid with attachment:
  - Save attachment to OneDrive (timestamp-based)

- Move email to Processed folder
  - Break loop and exit task
- 

#### **Tool 2: Claim Document Data Extraction (Task Bot)**

- Receives document path from Tool 1
  - Extracts text from PDF
  - Creates a text file
  - Stores extracted text in a string variable
  - Passes extracted content for AI processing
- 

#### **Tool 3: Claim Extraction Service (API Task)**

- Executes **Claim Data Intelligence AI Skill**
- Determines claim status based on mandatory documents

#### **Tool 4: JSON Response Parser (API Task)**

- Parses AI-generated JSON response
  - Maps individual fields to Automation Anywhere variables
  - Makes data available for HITL and notifications
- 

#### **Tool 5: Health Insurance HITL Form**

**Purpose:** Human validation and approval

**Form Features:**

- Read-only OneDrive document path
- Auto-populated extracted details:
  - Patient Name
  - Policy Number
  - Admission Date
  - Discharge Date
  - Claim Amount

- Missing Documents
    - Shortfall Reason (if applicable)
  - Editable field for insurance agent remarks
- 

#### **Tool 6: Dispatch Insurer Notification (Task Bot)**

- Sends final response to customer
  - Email subject includes **Policy Number**
  - Email body varies based on outcome:
    - Approved
    - Shortfall
    - Rejected
- 

#### **8. Exception Handling**

- Each Task Bot and API Task is enclosed in a **Try-Catch block**
  - Captures:
    - Error Message
    - Error Line Number
  - Errors are exposed during agent execution/testing for debugging and traceability
- 

#### **9. Testing Approach**

- Agent is executed from the **Test section**
- No initial input is required
- Execution flow:
  1. Fetch emails from Outlook
  2. Classify insurance-related emails
  3. Save attachments to OneDrive
  4. Extract document text
  5. Analyse claim using AI

6. Display data in HITL form
  7. Human validates claim
  8. Send final response to customer
- 

## **10. Key Benefits**

- End-to-end claim validation automation
- Faster turnaround time
- Reduced manual errors
- Human-in-the-loop control
- Fully traceable and auditable workflow
- Scalable and extensible AI-driven architecture