**Technical Design Document**

**R**obotics **P**rocess **A**utomation

**R**eturn **F**rom **L**eave

University of California

Oracle Cloud Financial - Finance

Author: Chris Palmer

Creation Date: March 20, 2025

Updated:

Document Ref: 001

Version: 1.2

**Approvals:**

|  |  |
| --- | --- |
|  |  |

## Document Control

**Change Record**

| Date | Author | Version | Change Reference |
| --- | --- | --- | --- |
|  |  |  |  |
| 03/20/2025 | Chris Palmer | 1.0 | Initial Draft |
|  |  | 1.1 | FDD updates based on internal review |
| 10/22/2025 | Ari Widjaja | 1.2 | FDD updates based on final PDD v1.7 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Contributors**

| Name | Position | Organization | Version | Date |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Brandi Festa | Controller | UCPath | 1.0 | 03/04/2025 |
| Daniel Teeter | Finance Benefits Billing Supervisor | UCPath | 1.0 | 03/04/2025 |
| Laura Doyle | Finance Benefits Billing Analyst | UCPath | 1.0 | 03/04/2025 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Contents

Document Control ii

Topical Essay 4

1. To update the table of contents, put the cursor anywhere in the table and press [F9]. To change the number of levels displayed, select the menu option Insert‑>Index and Tables, make sure the Table of Contents tab is active, and change the Number of Levels to a new value.

## Topical Essay

Deploy a robust RPA solution at UCPath, to initially target and execute simple processes in Payroll, HR, and Benefits administration. Utilizing the 24/7 operational capability of RPA, ensure seamless processing during peak periods and effectively reduce existing backlogs. As the system stabilizes, it will scale to include additional use cases and departments. This strategy is designed to enhance overall operational efficiency and effectiveness, achieve predictable outcomes, and improve employee satisfaction through quicker and more accurate responses to inquiries.

**Business Problem**

Manual entries, repetitive tasks, and suboptimal processes within UCOP pose significant challenges, resulting in inadequate productivity, unforced errors, and delays in service delivery throughout the business cycles. The current outcome hinders Business Operations’ ability to stabilize and normalize its operations, to achieve service targets and predictable outcomes.

**Project Scope & Objective**

Implement Robotics Process Automations (RPA) UCPath Finance aimed at automating manual or repetitive tasks, and streamlining processes within PeopleSoft and Salesforce, with the objective of achieving speedy, efficient, and effective processes. The automation solutions will optimize various workflows, thereby enhancing productivity and reducing manual effort, while ensuring accuracy and consistency across the platforms.

[UCPath Pilot Use Cases](https://ucofficeofthepresident.sharepoint.com/:f:/r/sites/RPAImplementation/Shared%20Documents/Analysis/UCPath%20Pilot%20Use%20Cases?csf=1&web=1&e=9wTWDk)

* **Business Requirements**
* **RPA Automation Goal**

This RPA automation aims to enhance efficiency by automating the compilation and formatting of payroll and benefits data from UCPath PeopleSoft and Oracle Financials. The goal is to optimize the analysis of employee benefit premiums during unpaid leaves or short work breaks, ensuring a more sustainable and efficient reconciliation process.

**Objective**

Streamline and automate the compilation, formatting, and analysis of payroll and benefits data from UCPath PeopleSoft and Oracle Financials.

**Use Case Scenario** Return from Leave Reconciliation

**Process Description:**

1. Identify returning employees: Access the file named 'Current Unpaid Leave RFL Master File(23)' to identify employees returning from leave.

2. Review payroll deductions: Run the 'FIN\_001' query in PeopleSoft and use the '001\_Format' macro to highlight any anomalies, missed paychecks, and paycheck statuses.

3. Analyze missed periods: Insert a Pivot Table to analyze missed periods. Then, create a 'Summary' spreadsheet that highlights missed deductions and the differences between employee and UC contributions.

4. Summarize benefits billing account: Run 'Transaction Register' in Oracle to summarize the benefits account. Then, export it to CSV and use the 'Transaction Register' macro to format the report.

5. Adjust Oracle invoices: Review the benefits summary and job data in PeopleSoft to confirm the Return from Leave (RFL) date. Then, adjust Oracle invoices for Total Rate, employee deductions, and/or changes in plans.

6. Export payment activity: Export payment activity from Oracle and incorporate it into the reconciliation workbook. Identify balances owed or refunds based on Oracle payment information.

7. Update the 'Current Unpaid Leave RFL Master File(23)': Open the file using Excel Online. Then, update columns P-S for the reconciled employee.

**Applications Utilized for Use Case**

* PeopleSoft
* Oracle
* BOX

**Pain Points**

1. Manual process of extracting, compiling, and formatting data from multiple systems, which is time-consuming and can result in errors.
2. Manually analyzing payroll deductions and benefits billing accounts for discrepancies can be time-intensive and may lead to errors if not thoroughly examined.
3. The overall process is resource-intensive, requiring significant effort in data manipulation, analysis, and adjustment.

**RPA Solution**

1. Query Execution and Analysis: Bots run queries, analyze data, and apply formatting rules in PeopleSoft.
2. Automated Pivot Table Creation: Bots are programmed to automatically create Pivot Tables for analyzing missed periods and discrepancies.
3. Oracle Transaction Register Automation: Bots automate the report generation and formatting of the 'Transaction Register' in Oracle.
4. Payment Activity Automation: Bots automatically extract payment activity from Oracle, and check for reversals.

**Benefits**

1. Increased Efficiency: RPA automates time-consuming tasks, such as data extraction, query execution, and report generation, leading to faster and more efficient processing.
2. Reduced Manual Errors: Automation minimizes the risk of human errors associated with manual data entry, compilation, and formatting, enhancing the accuracy of the reconciliation process.
3. Streamlined Data Analysis: Bots automate the creation of Pivot Tables and analysis of anomalies, providing a more streamlined and consistent approach to identifying missed periods and discrepancies.
4. Faster Case Management: Automatic case creation in Salesforce, along with standardized email notifications, accelerates the communication process and facilitates timely resolution.
5. Resource Utilization: The Finance Benefits Billing team can focus on higher-value tasks as RPA handles repetitive and time-consuming activities, boosting resource allocation within the department.
6. Cost Savings: With increased efficiency and reduced manual effort, RPA contributes to cost savings by improving productivity and minimizing the need for additional manpower.

**Problem Statement**

The current Return From Leave Reconciliation process requires multiple payroll and benefits reports to be pulled from UCPath PeopleSoft and Oracle Financials. These reports are then manually compiled and formatted to allow for data analysis to determine if an employee over/underpaid their benefit premiums while on an unpaid leave of absence or short work break. Accessing multiple systems to retrieve these reports and manually compiling/formatting them reduces efficiency and fosters unsustainable practices that do not meet Service Level Agreement targets.

**Proposed Solution**

Utilizing RPA on the Return From Leave Reconciliation process to automate the compiling and formatting of reports from multiple systems will allow for greater efficiency in analyzing payroll deductions, benefit elections, and benefits billing account financials.

**Value**

With the successful deployment of RPA on the Return From Leave Reconciliation process, the Finance Benefits Billing team will experience enhanced productivity. This will allow for greater capacity to complete more reconciliations daily. By completing more reconciliations, we are reducing the risk to UC of uncollected benefit premiums.

**Summary**

The current Return From Leave Reconciliation process involves extracting payroll and benefits data from UCPath PeopleSoft and Oracle Financials. These reports are manually compiled and formatted to analyze whether employees have over/underpaid benefit premiums during unpaid leaves or short work breaks. This multi-system approach hampers efficiency, undermines sustainability, and falls short of meeting Service Level Agreement targets. Introducing Robotic Process Automation (RPA) to automate the compilation and formatting of reports from multiple systems is proposed to enhance efficiency in analyzing payroll deductions, benefit elections, and benefits billing account financials. The successful deployment of RPA is expected to significantly boost productivity for the Finance Benefits Billing team, enabling them to handle a greater number of reconciliations daily. This increased capacity is crucial for reducing the risk to UC of uncollected benefit premiums.

**Current State**

1. Manual process including sub processes and tasks:

**Process X: Reconciling Employee Billing Accounts**

When an employee returns from leave, the A/R Benefits Billing team will reconcile the employee’s benefits billing account.  There are three main components of the reconciliation process:

* Ensuring that all months were billed properly in Oracle. (Total Rate vs. Employee Rate)
* Comparing Oracle billed/paid charges against UCPath paycheck deductions to confirm all periods have been paid and that no periods were deducted via paycheck and billed in Oracle.
* Identify the period(s) that the UC contribution towards medical, dental, and vision needs to be collected.

If there is a balance or refund due, the deductions or refunds are submitted via the One-Time Deduction Worksheet and transacted on the employee's upcoming paycheck.

1. Identify employees that have returned from leave by accessing the ‘Current Unpaid Leave RFL Master File(23)’.

A screenshot of a computer

Description automatically generated

1. Review Payroll Deductions by running the FIN 001 Query.
2. In PeopleSoft, navigate to Main Menu > Reporting Tools > Query > Query Viewer
3. In the search field, enter UC\_FIN001. Save to favorites.

A screenshot of a computer

Description automatically generated

1. Click on the Excel link under the heading ‘Run to Excel’.
2. Enter the EMPL ID in the applicable search field.
3. Report will open in Excel.
4. Run ‘001\_Format’ macro to format the report. This will remove unnecessary columns and highlight any anomalies that may need further research, such as arrears and refunds. It will also show the status of the paycheck.

A close-up of a computer screen

Description automatically generated

1. One example of an anomaly that would need to be further investigated would be a period that has payback amounts (arrears) and was also billed in Oracle.  If so, the Oracle charges should have a credit memo processed to clear the charges for the arrears deductions taken.

A screenshot of a computer

Description automatically generated

1. Review Paycheck Issue Date column to determine if there are any missed paychecks. These are periods that should have been billed or need to be collected using the One-Time Deduction Sheet.

A screenshot of a computer

Description automatically generated

1. Insert a Pivot Table to analyze the periods missed; use the criteria and group selection below.

A screenshot of a computer

Description automatically generated A screenshot of a computer

Description automatically generated

* 1. Copy and Paste (Values) onto new spreadsheet to be able to edit the data. Change the tab name to ‘Summary’.
  2. Inset columns as placeholders for the missed paycheck dates, add in the date and highlight. The employee in this example missed deductions for ½ May, June, July & ½ August coverage.

A calendar page with date and time

Description automatically generated

* 1. Fill in the missed deduction amounts for each plan and change cell style to highlight the difference between employee portion and UC contributions.

A screenshot of a spreadsheet

Description automatically generated

1. Manually review if employee was continuously enrolled in benefits or if any plan changes took place by reviewing the benefits summary page. PeopleSoft > Main Menu > Benefits > Benefits Summary

A screenshot of a computer

Description automatically generated

1. Save the Reconciliation workbook in the Account Reconciliation folder.  Using the following format



In Oracle run a ‘Transaction Register’ to summarize the benefits account.

1. Go to Oracle Home screen and click on ‘Tools’ then the ‘Reports and Analytics’ icon.

A blue circle with white tools in it

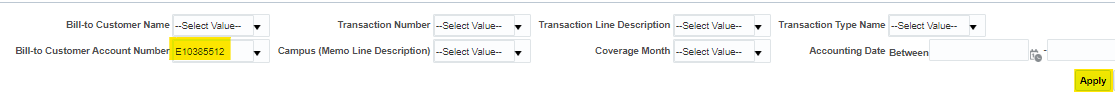
Description automatically generatedA logo of a report

Description automatically generated

1. The ‘Transaction Register Report’ is called the ‘page 1’ report. The path is:



1. Click on the link for ‘page 1’, enter the ‘Bill-to Customer Account Number” and click on ‘Apply’.



1. Once the report is displayed, scroll to the bottom and click on the following icon to expand the report to all rows.  
2. Export to CSV file using the path below:

A screenshot of a computer

Description automatically generated

1. Use ‘Transaction Register’ macro to format the report.
2. Copy and paste ‘Previous Transaction Number’ column into ‘Transaction Number’ column for credit memos only.  Sort Transaction Number column Smallest to largest.

A screenshot of a computer

Description automatically generated

1. Subtotal the data using the following criteria:

A screenshot of a computer

Description automatically generated

1. Uncheck the box for ‘Previous Transaction Number’ under the “Add subtotal to:” field.

1. Identify any adjustments that need to be made to the benefits billing account in Oracle due to the return from leave date. (total rate to employee rate or employee having/not having deductions for coverage) or change in plans.
   * 1. Review if employee was continuously enrolled in benefits or if any plan changes took place by reviewing the benefits summary page. PeopleSoft > Main Menu > Benefits > Benefits Summary

A screenshot of a computer

Description automatically generated

* + 1. Go to Job Data record in PeopleSoft to confirm RFL date.

A screenshot of a computer

Description automatically generated

1. If RFL date is 7/1/2023 they are not responsible for Total Rate for July coverage forward.

A screenshot of a computer

Description automatically generated

1. Export any payments made on the account. In Oracle navigate to Billing > Review Customer Account Details to export payment activity to excel.

A screenshot of a computer

Description automatically generated

1. Copy and paste the data into the workbook that has the FIN001 and rename the tab “Pmts”.
2. Filter the “Class” column in the excel report to view ‘Payment’.

A screenshot of a computer

Description automatically generated

1. Check “Status” to confirm there are no reversed payments. If there is a ‘reversed’ payment do not include in the payments total.

A screenshot of a computer

Description automatically generated

1. On the Transaction Register, apply any payments to the invoices to identify the balance the employee owes or needs to be refunded. In the example below the employee made payments for all billed premiums, however, was not billed for ½ Aug’23 coverage. This will need to be added to the One-Time Deduction workbook.

A screenshot of a document

Description automatically generated

1. Move the Transaction Register into the workbook that contains the FN001 and Pmts.

1. Make any adjustments (Credit Memos) in Oracle for Total Rate or that have deductions taken from paychecks.
2. To adjust an invoice click on the invoice line to highlight it.
3. Click on the edit icon that looks like a pencil.

A screenshot of a computer

Description automatically generated

1. From the Actions menu, select “Credit Transaction”.

A screenshot of a computer screen

Description automatically generated

1. ‘Transaction Source’ should be UCPATH MANUAL. The coverage month should be the Month and Year the invoice covers.  Leave the dates as they are. Add one of the following to the comments box:

|  |
| --- |
| EE had deductions for coverage. |
| EE had deductions for 1/2 month coverage. |
| EE RFL x/x; should receive UC contributions. |
| EE RFL x/x; should have deductions for coverage. |
| EE RFL x/x; balance to be collected via OTD. |

A screenshot of a computer

Description automatically generated

1. Click credit lines and credit the relevant plans based on what was deducted via paycheck or that will be collected via paycheck.
2. On the ‘Summary’ tab of the reconciliation workbook highlight the periods that were paid with the neutral cell style color to reflect payments made towards the balance due.
3. Summarize what will be added to the OTD (balance due or refund) for both the employee and the UC contributions.

A screenshot of a spreadsheet

Description automatically generated

1. Save the workbook in the Account Reconciliation folder.



1. Update the ‘Current Unpaid Leave RFL Master File(23)’ located below.

A screenshot of a computer

Description automatically generated

Open using Excel Online through Box.

A screenshot of a computer

Description automatically generated A screenshot of a computer

Description automatically generated

Once workbook is open, change to ‘Temporary’ view by clicking the icon circled below. This will allow filters to be used without effecting others.

A screenshot of a computer

Description automatically generated

Locate the reconciled employee using the employee ID

Update columns P-S as shown below.

A screenshot of a computer

Description automatically generated

Total Average Processing Time: 30 minutes - 2 hours

**List of Repetitive manual steps:**

1. **Identify Returned Employees:** Access the 'Current Unpaid Leave RFL Master File(23)' to identify employees who have returned from leave.
2. **Review Payroll Deductions:**
   * Run the FIN 001 Query in PeopleSoft, with multiple manual steps such as navigating through PeopleSoft menus, running the query, exporting to Excel, and formatting using macros.
   * Analyze the report for anomalies, like arrears and refunds, requiring further investigation.
   * Review the paycheck issue date column to identify missed paychecks.
   * Insert a Pivot Table to analyze missed periods.
3. **Oracle Transaction Register:**
   * In Oracle, run a 'Transaction Register', steps include navigating through Oracle menus, exporting to CSV, and using macros to format the report.
   * Copy and paste data, sort, and subtotal based on specific criteria.
4. **Export Payments from Oracle:** Export payment activity in Oracle, including steps such as filtering data, checking payment status, and applying payments to identify the balance owed or refund.
5. **Highlighting in Summary Tab:** Manually highlight periods that were paid on the 'Summary' tab of the reconciliation workbook.
6. **Salesforce Case Creation (Not in scope for automation):** Open a case in Salesforce for balances over $50, including filling in required fields and adding comments summarizing actions taken.
7. **Email Employee (Not in scope for automation)::** Email the employee using a template to notify them of the status of their Return From Leave reconciliation.
8. **Update One-Time Deduction (OTD) Sheet (Not in scope for automation)::** Locate the relevant OTD sheet and add the required information based on the reconciliation.
9. **Update 'Current Unpaid Leave RFL Master File (23)':** Open the file using Excel Online through Box, change to 'Temporary' view, and update specific columns based on the reconciliation.

These manual steps involve accessing multiple systems, running queries, exporting data, and performing various data manipulations, highlighting the potential for increased efficiency through automation.

**Noted (12 manual steps) significant manual processes and 52 manual tasks.**

**Proposed Solution**

**Step 1.**

**Identify Returned Employees**

From FIN284 report, business is responsible to clean and produce a list of employees where the following conditions are met:

* Not future dated i.e. paycheck issue date is not greater than today’s date
* Payroll status neither: terminated, retired, or deceased
* Elig Fld 1 flag neither ‘G’ or ‘N’
* Pay Status is not ‘Paid Leave’
* Has no completed or pending recon status based on RFL Master File that business kept for logging and tracking purpose.

Once FIN284 report is cleaned, the only input the bot needs is an input Excel workbook consisting of 1 worksheet with following columns:

* Business Unit
* EEID – Employee ID
* Payroll Status
* Pay Status
* Pay Group
* Current Date
* Action Date
* Elig Fld1
* Elig Fld2
* Empl Record
* Job Indicator

Business is responsible for dropping the **input file** in RPA Box folder (path: Box\RPA\{ENV}\Return From Leave Reconciliation\{ENV} File Drop)

**Step 2.**

**AA Bot Initiation**

Below are initiation steps performed by AA bot:

1. Setup Runtime Directories
   1. Ensure required folders (e.g., Logs, Input, Output, Exceptions, Archive, Config, Process Logs, Snapshots) exist.
   2. Create them if missing and apply appropriate access controls (ACLs).
2. Load Configuration
   1. Read the bot configuration file (Config.json or .xml) to retrieve paths, credential keys, logging level, and email distribution lists.
3. Clean Up Residual Applications
   1. Terminate or close leftover instances of applications like Excel, PeopleSoft browser sessions, and Box drive.
4. Initialize Logging
   1. Set up Action and Exception logs with headers.
   2. Generate a unique run ID (UUID) and log the “Bot Start” event

**Step 3.**

**AA Bot Downloading Input File into EC2 and Reading Into Main Data Table.**

Inside EC2 server, Bot will download the input file dropped in RPA Box folder (path:Box\RPA\{ENV}\Return From Leave Reconciliation\{ENV} File Drop) from AA control room utilizing AA Box package (API). Credentials required to establish authentication are stored within config.json inside AA control room – RFL folder and credential stored in AA control room locker.

The downloaded input file (Excel) will be temporarily stored in EC2 directory: C:/ProgramData/AutomationAnywhere/Bots/Logs/RFL-UCPath/Input

The purpose of downloading the input file into EC2 directory is for bot to read the data utilizing AA Excel Basic action and stores into data table (or refer to as main data table).

**Step 4.**

**Identify Returned Employees by Payroll Status, Job Indicator, and Arrear Balance. Ready for Reconciliation.**

*Job Data check*

Bot initiates a login to Peoplesoft and navigate to Job Data page. Once login is established and arrive at Job Data page. Bot iterates the list of EEID from main data table and as it lands on Job Data page, it reads and captures the following data points:

* Payroll Status – in Work Location tab
* Job Indicator – in Work Location tab
* Pay Group – in Payroll tab (NOTE: pay group is to indicate whether EE is monthly or biweekly employee)

As a process of determining reconciliation, any EEID with the following conditions will be removed from main data table and place in exception data table:

* Payroll Status is not Active
* Job Indicator is not Primary Job

All EEID with above conditions are placed in exception data table with exception status :”Payroll Status or Job Indicator did not meet criteria”

*Arrear Balance check*

Bot then navigates to Arrears page, and as bot iterates the list of remaining EEID in main data table, bot checks for UCS arrears records.

As a process of determining reconciliation, any EEID with arrear balance > $0 will be removed from main data table and place in exception data table

The main data table now consists of recon-eligible EEID.

**Step 3.**

**Review Payroll Deductions**

Bot then navigates to Query Viewer page; search for FIN001 query viewer. As bot iterates the list of remaining EEID in main data table, bot downloads FIN001 report (in .xls) into EC2 repository: C:/ProgramData/AutomationAnywhere/Bots/Logs/RFL-UCPath/Input/FIN001

Once bot finishes compiling FIN001 for all EEID, bot triggers Python script that will perform the following data processing:

**Step 4.**

**Oracle Transaction Register**

asd

**Step 5.**

**Export Payments from Oracle**

asd

**Step 6.**

**Data Processing of Payroll Deduction (FIN001) Report**

asd

Glossary Terms (RFL)

|  |  |
| --- | --- |
| Term | Definition |
| AA | Automation Anywhere |
| Exception data table | Data table consisted of EEID that does not meet the criteria for reconciliation candidacy. This data table is used to capture any business or system error impacting each EEID during bot run. |
| Main data table | Data table that reads from Input workbook supplied by business. This data table is used as the main reference for the bot as it checks for multiple status and downloads FIN001 report for each employee in the list. |
| Query Viewer | A tool in UCPath used to view and run queries to retrieve specific data. |

## Appendix