|  |
| --- |
|  |
| **Solution Design Document**    Robot | BOT  Process | ZFNL Open Concern Aging Report  Area | GME |
|  |
|  |
| *Client confidential / sensitive data should not be recorded in this document* |

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# Document Information

## Version Control

The table below lists different versions of this document along with date of creation, description and the author of the document

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Description | Author |
| V1 | 20-12-2018 | First Draft | Lipi Krishnan |

## Version Changes

Listed below are the changes incorporated in to different versions of this document

|  |  |
| --- | --- |
| Version | Document Changes |
| N/A | N/A |

## Document Approval

Listed below are the stakeholders who have reviewed and approved this document

| Name | Approval Details | Business Role | Project Role | Version | Approval Date |
| --- | --- | --- | --- | --- | --- |
|  |  |  | Project Manager | 0.1 |  |
| Arunprasath, Panneer Selva |  |  | Process Owner | 0.1 |  |
|  |  |  | Engagement Partner | 0.1 |  |

## Document review

Listed below are the people who have reviewed the content of this document

| Name | Approval Details | Business Role | Review Role | Version | Review Date |
| --- | --- | --- | --- | --- | --- |
| Arunprasath, Panneer Selva |  | Seniors Professional | Process SME, | 0.1 |  |
|  |  |  | Process SME, | 0.1 |  |
|  |  |  | Process SME | 0.1 |  |
|  |  |  | Project Manager | 0.1 |  |

# Context & Base Information

## Purpose

The Solution Design Document (SDD) describes the functional and non-functional aspects of the current and the automated process, including pre-requisites, the process flow, design constraints and other factors necessary to provide a comprehensive view of the process. This document serves as a guide for the business users, developers and test engineers on the future behavior of the robot

The document captures the details of the existing manual process of the Invoice Processing Pre-handling as performed by the client and is the blueprint of the automation of the process in scope, Invoice Processing Pre-handling, including any exceptions, constraints and requisites for automated process.

Overall, the purpose of this document is to:

* Ensure process solution is in line with standards.
* Provide information on the process and object sheets involved
* Provide understanding into the RPA process flow
* Provide UAT sign-off criteria

**Note -** Changes to the underlying business process after the completion of this document, may constitute a request for change and will be subject to the agreed change procedures

## Process Owners and SMEs

The table below provides the list of people from the Line of Business (Lob) who were involved as Partial of the development and deployment of the automated solution

|  |  |  |
| --- | --- | --- |
| Process Stakeholder | Approval Details | Responsibility |
|  |  | Functional Head |
|  |  | Process Owner |
|  |  | Process SME |
|  |  | Process SME |
|  |  | Bot Operator 1 |
|  |  | Bot Operator 2 |

## Process Execution (Current state) Requirements

The table below provides key business metrics measured for the current process and the automated process

| Sr. # | Metric Type | Value |
| --- | --- | --- |
| 1. | Processing Frequency | Daily |
| 2. | Process time window | 15:00 – 16:00 |
| 3. | Average Processing Time (As-Is Process) | 20 minutes |
| 4. | Average Processing Time (Automated Process) | 15 minutes |
| 5. | Process Rework Rate | 5% - 10% |
| 6. | Average Process volume | 30,000 per month |
| 7. | Peak Process volume | -NA- |
| 8. | SLA per record | 24 hours |
| 9. | FTE required (As-Is process) | 20-25 |
| 10. | FTE required (Automated Process) | To be Captured |
| 11. | Number of robot operators | To be Captured |

## IT Application overview

The table below provides the list of applications that are used as Partial of the current process. This information is used to setup the application environment for the automated process and request necessary accesses

| Application Name | Application Type | Method to gain access | Detailed steps to request dev/test access | Detailed steps to request production access | Compatibility checked (Yes/No) |
| --- | --- | --- | --- | --- | --- |
| Shared Drive | Intranet | Self-request | Raise request in the web application | Raise request in the web application | Yes |
| MS Excel | Desktop | NA | NA | NA | Yes |

# As-Is Process (Functional) Design

## Manual Process (Current State) Overview

ZFNL Open Concern Aging Report Generation using Sharepoint Access inorder to download the CMM VOME file and by doing Manupilations in New ZFNL Concern Aging File & Concern Aging Report.

Given below is a step-by-step flow chart for the AS-IS process (L0 view).

As-Is Process for ZFNL Concern Aging

Check the required Supervisor Names & required Status

Go to csr Sheet of New ZFNL Concern Aging Report

Go to MAIN SHEET sheet & click on Generate Report

Paste it in New Concern Aging Report in Mail Sent Out Report Sheet

Go to Mail Sent Out Report Sheet of CMM VOME File, Remove Filters & Unfreeze the Data & Copy.

Paste it in New Concern Aging Report in Concern Approval Sheet.

Go to Concern Approval Sheet of CMM VOME File, Remove filters & Unfreeze the Data & Copy.

Open the downloaded file

Check for CMM VOME Current days uploaded file & Download it.

Open CMM ZFNL Sharepoint

Go to Engineer Report sheet, Check the required Supervisor Names, Engineer Names & Status

Check the required Supervisor Names & required Status

Go to csri Sheet of New ZFNL Concern Aging Report

Copy the output in Sheet4 in Model Name column

Copy the Model Name column in RAW DATA sheet & click on execute

Go to MAIN SHEET & click on Generate Report

Go to Engineer Detail Report, Check the required Engineer Names

Go to RI CR List, Check the required RESP Names

Paste it as Values in Sheet4 of Daily Concern Aging Macro

Go to Engineer Detail Report, Copy the Data

Send to respective users

Copy Table from Sheet4 of DAILY CONCERN AGING MACRO & click paste in Outlook, Paste in outlook

Copy Tables from RI CR List, Paste it in Outlook

Check the red color bar in Chart Images of Carline & Engineer Report as a Quality Check

Go to Sheet4 of DAILY CONCERN AGING MACRO & click on Open Concern List column

Select all & click on Format Painter

Copy Chart Reports from Carline status report, Engineer Report of NEW ZFNL Concern Aging File

Paste it in Outlook with Provided Body

Click on Engineer Detail Report sheet of NEW ZFNL Concern Aging Report

I/P

.xlsx File

O/P

.xlsm File

The high level process description (at L0 activity) has been provided in below table

|  |  |  |
| --- | --- | --- |
| Sr. # | Process Step | Description |
| 1 | **Open the URl** | The process open the Sharepoint to download CMM VOME file. |
| 2. | **Right click on CMM VOME current days file** | The Process involves to do right click operation inorder to get the dropdown of it. |
| 3. | **Click on Download** | The process involves to click on download for CMM VOME file. |
| 4. | **Click on Dropdown of Save Icon** | This process involves to click on dropdown of Save icon |
| 5. | **Click on Save As** | This Process involves to click on Save As, So that a new window will appear inorder to give the file path which it needs to be saved. |
| 6. | **Type the path in file name text field & click on Save** | The Process involves to type the path in file name text field & click on Save. |
| 7 | **Click Close Application** | This process involves to close application. |
| 8. | **Open the Downloaded File** | The Process involves to open the downloaded file. |
| 9. | **Click on Concern Approval sheet, remove filters & unfreeze the data** | The process involves to click on Concern Approval sheet, remove filters & unfreeze the data |
| 10. | **Copy the Data & Paste it in NEW ZFNL Concern Aging File** | The process involves to copy the data in Concern Approval Sheet & paste it in Concern Approval sheet in NEW ZFNL Concern Aging File |
| 11. | **Click on Mail Sent Out Report, remove filters & unfreeze the data** | The process involves to click on Mail Sent Report, remove filters & unfreeze the data. |
| 12. | **Copy the Data & Paste it in NEW ZFNL Concern Aging Report** | The process involves to copy the data in Mail Sent Out Report Sheet & paste it in Mail Sent Out Report sheet in NEW ZFNL Concern Aging File |
| 13. | **Go to MAIN SHEET in NEW ZFNL CONCERN Aging Report & click on Generate Report** | The process involves to go to MAIN SHEET in NEW ZFNL Concern Aging Report & Click on Generate Report |
| 14. | **Click on csr sheet & check the required Supervisor names** | The process involves to click on csr sheet & check the required Supervisor names by doing click operation on Supervisor filter icon |
| 15. | **Click on Status filter icon** | The process involves to do click operation on Status filter icon & check all the required fields |
| 16. | **Click on csri sheet & check the required Supervisor names** | The process involves to click on csri sheet & check the required Supervisor names by doing click operation on Supervisor filter icon |
| 17. | **Click on Engineer Report sheet & check the required fields of Supervisor names, Engineer names & Status** | The process involves to click on Engineer Report sheet & check the required fields of Supervisor Names, Engineer Names & Status. |
| 18. | **Click on RI CR list sheet & check the required fields of RESP Names** | The process involves to click on RI CR List & check the required fiels of RESP Names |
| 19. | **Click on Engineer Detail Report & Check the required fields of Engineer Names** | The process involves to click on Engineer Detail Report & Check the required fields of Engineer Names |
| 20. | **Click on MAIN SHEET 🡪 Generate Report** | The process involves to click on MAIN SHEET 🡪 Generate Report |
| 21. | **Click on Carline Sheet** | The process involves to click on Carline Sheet & perform Quality Check with Engineer Report |
| 22. | **Click on Carline Status Report sheet & Copy the Image** | The process involves to click on Carline Status Report sheet & copy the Image |
| 23. | **Paste it in Outlook with provided body** | The process involves to paste it in Outlook with provided body. |
| 24. | **Click on Engineer Report Sheet & Copy the Image** | The process involves to click on Engineer Report Sheet & Copy the Image |
| 25. | **Paste it in Outlook** | The process involves to paste it in Outlook. |
| 26. | **Click on RI CR List sheet & copy the Data** | The process involves to click on RI CR List sheet & copy the Data |
| 27. | **Paste it in Outlook** | The process involves to paste it in Outlook. |
| 28. | **Click on Engineer Detail Report & copy the Data** | The process involves to click on Engineer Detail Report & copy the Data |
| 29. | **Paste it in Sheet4 of DAILY CONCERN AGING MACRO & do manupilations** | The process involves to paste it in sheet4 of DAILY CONCERN AGING MACRO & do manupilations |
| 30. | **Copy the data & Paste it in Outlook** | The process involves to Copy the data & Paste in Outlook |
| 31. | **Send the Mail to the respective Users** | The process involves to send the mail to the respective users. |

For more details about the AS-IS process, please refer the AS- IS process map at section Reference Documents, Links and Templates

The high level process description (at L1 activity) has been provided in below table

|  |  |  |
| --- | --- | --- |
| Sr. # | Process Step | Description |
| 1 | **Manupilations in Sheet4 of DAILY CONCERN AGING MACRO** | This process involves to go to Sheet4 of DAILY CONCERN AGING MACRO |
| 2. | **Copy the Model Name column** | The process involves to copy the Model Name column |
| 3. | **Paste it in Raw Data sheet** | The process involves to Paste it in Raw Data sheet |
| 4. | **Click on Execute** | The process involves to click on Execute |
| 5 | **Copy the Data & Paste it in Sheet4, Model Name column** | This Process involves the to copy the data & paste it in Sheet4, Model Name column |
| 6. | **Click on Engineer Detail Report of NEW ZFNL Concern Aging** | The process involves to click on Engineer Detail Report of NEW ZFNL Concern Aging |
| 7. | **Select all & click on Format Painter** | The process involves to do Select all operation & click on Format Painter |
| 8. | **Click on Sheet4 of DAILY CONCERN AGING MACRO & click on Open Concern List Column** | The process involves to click on Sheet4 of DAILY CONCERN AGING MACRO & click on Open Concern List column. |

## Process Triggers

The table below provides the trigger for the current process

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. # | Process Trigger | Application Used | Start Time | Frequency |
| 1. | The Process has to be started at the specified time by the Admin. | Sharepoint, Excel Application, Outlook | 15:00 | Multiple |

## Process Risks and Dependencies

The following section lists the key risks and dependencies of specific to manual process

|  |  |  |
| --- | --- | --- |
| Sr. # | Description | Current controls in place |
| 1 | The CMM VOME file is not loaded in Sharepoint | If the CMM VOME file is not loaded in the Sharepoint, Try to download the file after some time |
| 2. | The downloaded file will be not having Mail Sent Out Report sheet | Delete the downloaded file, Again try to download the file after some time so that all the sheets get loaded properly |

To-Be Process (Functional) Design

## Automated Process Overview

The automated process for ZFNL Open Concern Aging Report will enable us to extract the accurate Images & Tables by using CMM VOME File, Macros & send them to the required users. The process would be scheduled to run on daily basis. The automation covers the required Concern Aging Report update with highest accuracy.

Given below is a step by step flow chart for the To-Be process (L0 view).

File is not uploaded, Send mail to admin to run the bot after some time

Automated Process for ZFNL Open Concern Aging Report

Find CMM VOME current fie

Click on Modified Tab

Open Concern Aging File Input

Click on Descending

Open CMM ZFNL Sharepoint

Type the path in File Name text field

Click on Save As

Click on Save dropdown

Click on Download

Find file, Right click on CMM VOME current days file

If operation fails, delete the file & send mail to admin to run the bot after some time

Go to Mail Sent Out Report sheet

Open the downloaded file

Click on Save

Paste it in Mail Sent Out Report Sheet in New ZFNL concern Aging file

Click on Mail Sent Out Report Sheet of CMM VOME File, Remove Filters & Unfreeze the Data & Copy.

Paste it in Concern Approval Sheet in New ZFNL concern Aging file

Click on Concern Approval Sheet of CMM VOME File, Remove filters & Unfreeze the Data & Copy.

Operation success, click on Concern Approval Sheet

Click on MAIN SHEET sheet & click on Generate Report

Click on RI CR List sheet 🡪 RESP Name filter icon & check the required names

Click on Engineer Name & Status filter icon & check the required names

Click on Engineer Report sheet 🡪 Supervisor filter icon & check the required names

Click on csri sheet 🡪 Supervisor filter icon & check the required names

Click on Status filter icon & check the required names

Click on csr sheet 🡪 Supervisor filter icon & check the required names

Go to Engineer Detail Report, Copy the Data

Click on MAIN SHEET sheet & click on Generate Report

Click on Engineer Detail Report sheet 🡪 Engineer Name filter icon & check the required names

Comparision success

Copy Image Reports from Carline status report, Engineer Report of NEW ZFNL Concern Aging File

Paste it in Outlook with Provided Body (Body will be taken from input file)

Copy Table from RI CR List, Paste it in Outlook

Copy Table from Sheet4 of DAILY CONCERN AGING MACRO

Paste it ias Picture in outlook & send to respective users

Close all the Applications

Go to Carline Sheet & compare >14d column with Engineer Report >14d column

Paste it as Values in Sheet4 of Daily Concern Aging Macro & do manupilations

Comparison Fails, Check the Supervisor names & run the workflow again

Automated Process in DAILY CONCERN AGING MACRO

Copy the Model Name column in RAW DATA sheet & click on execute

Click on Sheet4 of DAILY CONCERN AGING MACRO & click on Open Concern List column

Select all & click on Format Painter

Click on Engineer Detail Report sheet of NEW ZFNL Concern Aging Report

Copy the output in Sheet4 in Model Name column

Click on Sheet4 of DAILY CONCERN AGING MACRO

The high level process description (at L0 activity) has been provided in below table

|  |  |  |
| --- | --- | --- |
| Sr. # | Process Step | Description |
| 1. | **Open the Concern Aging input file** | The process involves to open the ZFNL Open Concern Aging input file |
| 2. | **Open the URL** | The process open the Sharepoint to download CMM VOME file. |
| 3. | **Click on Modified Tab** | The process involves to click on Modified Tab to get dropdown |
| 4. | **Click on Descending** | The process involves to click Descending |
| 5. | **Right click on CMM VOME current days file** | The Process involves to do right click operation inorder to get the dropdown of it. |
| 6. | **Click on Download** | The process involves to click on download for CMM VOME file. |
| 7. | **Click on Dropdown of Save Icon** | This process involves to click on dropdown of Save icon |
| 8. | **Click on Save As** | This Process involves to click on Save As, So that a new window will appear inorder to give the file path which it needs to be saved. |
| 9. | **Type the path in file name text field & click on Save** | The Process involves to type the path in file name text field & click on Save. |
| 10. | **Click Close Application** | This process involves to close application. |
| 11. | **Open the Downloaded File** | The Process involves to open the downloaded file. |
| 12. | **Click on Concern Approval sheet, remove filters & unfreeze the data** | The process involves to click on Concern Approval sheet, remove filters & unfreeze the data |
| 13. | **Copy the Data & Paste it in NEW ZFNL Concern Aging File** | The process involves to copy the data in Concern Approval Sheet & paste it in Concern Approval sheet in NEW ZFNL Concern Aging File |
| 14. | **Click on Mail Sent Out Report, remove filters & unfreeze the data** | The process involves to click on Mail Sent Report, remove filters & unfreeze the data. |
| 15. | **Copy the Data & Paste it in NEW ZFNL Concern Aging Report** | The process involves to copy the data in Mail Sent Out Report Sheet & paste it in Mail Sent Out Report sheet in NEW ZFNL Concern Aging File |
| 16. | **Go to MAIN SHEET in NEW ZFNL CONCERN Aging Report & click on Generate Report** | The process involves to go to MAIN SHEET in NEW ZFNL Concern Aging Report & Click on Generate Report |
| 17. | **Click on csr sheet & check the required Supervisor names** | The process involves to click on csr sheet & check the required Supervisor names by doing click operation on Supervisor filter icon |
| 18. | **Click on Status filter icon** | The process involves to do click operation on Status filter icon & check all the required fields |
| 19. | **Click on csri sheet & check the required Supervisor names** | The process involves to click on csri sheet & check the required Supervisor names by doing click operation on Supervisor filter icon |
| 20. | **Click on Engineer Report sheet & check the required fields of Supervisor names, Engineer names & Status** | The process involves to click on Engineer Report sheet & check the required fields of Supervisor Names, Engineer Names & Status. |
| 21. | **Click on RI CR list sheet & check the required fields of RESP Names** | The process involves to click on RI CR List & check the required fiels of RESP Names |
| 22. | **Click on Engineer Detail Report & Check the required fields of Engineer Names** | The process involves to click on Engineer Detail Report & Check the required fields of Engineer Names |
| 23. | **Click on MAIN SHEET 🡪 Generate Report** | The process involves to click on MAIN SHEET 🡪 Generate Report |
| 24. | **Click on Carline Report** | The Process involves to do the Quality Check between Carline & Engineer Report |
| 25. | **Click on Carline Status Report sheet & Copy the Image** | The process involves to click on Carline Status Report sheet & copy the Image |
| 26. | **Paste it in Outlook with provided body** | The process involves to paste it in Outlook with provided body. |
| 27. | **Click on Engineer Report Sheet & Copy the Image** | The process involves to click on Engineer Report Sheet & Copy the Image |
| 28. | **Paste it in Outlook** | The process involves to paste it in Outlook. |
| 29. | **Click on RI CR List sheet & copy the Data** | The process involves to click on RI CR List sheet & copy the Data |
| 30. | **Paste it in Outlook** | The process involves to paste it in Outlook. |
| 31. | **Click on Engineer Detail Report & copy the Data** | The process involves to click on Engineer Detail Report & copy the Data |
| 32. | **Paste it as Values in Sheet4 of DAILY CONCERN AGING MACRO & do manupilations** | The process involves to paste it as Values in sheet4 of DAILY CONCERN AGING MACRO & do manupilations |
| 33. | **Copy the data & Paste it as Picture in Outlook** | The process involves to Copy the data & Paste it as Picture in Outlook |
| 34. | **Send the Mail to the respective Users** | The process involves to send the mail to the respective users. |
| 35. | **Close all the applications** | The process involves to close all the applications. |

For more details about the TO-BE process, please refer the To – Be process map at section [Reference Documents, Links and Templates](#_Reference_Documents,_Links)

The high level process description (at L1 activity) has been provided in below table

|  |  |  |
| --- | --- | --- |
| Sr. # | Process Step | Description |
| 1 | **Manupilations in Sheet4 of DAILY CONCERN AGING MACRO** | This process involves to go to Sheet4 of DAILY CONCERN AGING MACRO |
| 2. | **Copy the Model Name column** | The process involves to copy the Model Name column |
| 3. | **Paste it in Raw Data sheet** | The process involves to Paste it in Raw Data sheet |
| 4. | **Click on Execute** | The process involves to click on Execute |
| 5 | **Copy the Data & Paste it in Sheet4, Model Name column** | This Process involves the to copy the data & paste it in Sheet4, Model Name column |
| 6. | **Click on Engineer Detail Report of NEW ZFNL Concern Aging** | The process involves to click on Engineer Detail Report of NEW ZFNL Concern Aging |
| 7. | **Select all & click on Format Painter** | The process involves to do Select all operation & click on Format Painter |
| 8. | **Click on Sheet4 of DAILY CONCERN AGING MACRO** | The process involves to click on Sheet4 of DAILY CONCERN AGING MACRO |
| 9. | **Click on Open Concern List Column** | The process involves to click on Open Concern List column |

## Process Variations

The table below provides the list of process variations and the solution incorporated in the automated process. Variations that were considered out of scope and not automated are indicated below

| Sr. # | Variation Type | Variations | Variation Description | Automated Process |
| --- | --- | --- | --- | --- |
| 1. | **Keep the All the Files in Public Folder** | File names | Name of the file may be changed. In that case, the engineer has to update the new file name in the public Folder. | In case of change in file name, the robot would not be able to find the file. The engineer will be notified that the file is not there or the file name has changed |

## Process Re-engineering for Automated Process

The table below provides the list of process re-engineering carried out during automation. Re-engineering was done with an objective to bring in standardization in the process to increase scalability without impacting the outcome of the process

| Sr. # | Process Step | Original Process | Changed Process (Automated) | Reason for change | Impact, if any |
| --- | --- | --- | --- | --- | --- |
| N/A | **N/A** | N/A | N/A | N/A |  |

## Process Triggers

The table below provides the trigger coded for the Bot to start the automated process

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. # | Process Trigger | Application Used | Start Time | Frequency |
| 1. | Scheduled to start automatically | Sharepoint,Excel,Outlook | TBD | Multiple |

## Automated Process – Screen flow

This section provides the detailed (keystroke) automated process along with screenshots of various screens accessed and updated as Partial of the process. The automation of Invoice Processing Pre-Handling has been achieved by modularizing the key functions i.e. each L0 steps into modules and each table further represents the detailed steps/activities i.e. L1 and L2 activities carried out for automation of the respective module.

###### **Module Name**

Description of the L0 activity and further steps performed as Partial of the L0 activity

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Sub Step | Description of functionality | Screenshot | Template Reference | Suggested feature of automation tool | Robustness (High, Medium Low) |
| Corresponds to L1 activity of the Module or L0 activity | Corresponds to **L2** activity of the respective L1 activity | Detailed description at key stroke level of the activity | Desktop screenshot of the activity performed | Template referred to as Partial of the process | Automation tool feature used to automate the activity | Robustness of the automation feature |

###### **Open the URL (Sharepoint).**

The process/module highlights the detailed activities performed to open the sharepoint.

| Step | Sub Step | Description of functionality | Screenshot | Template Reference | Suggested tool functionality | Robustness (High, Medium Low) |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  | Open the **URL** |  |  | RPA Tool Element Selector | High |

###### **Download the CMM VOME file**

The process/module highlights the detailed activities performed to download CMM VOME file

| Step | Sub Step | Description of functionality | Screenshot | Template Reference | Suggested tool functionality | Robustness (High, Medium Low) |
| --- | --- | --- | --- | --- | --- | --- |
| 2 |  | Click **on Modified** |  |  | RPA Tool Element Selector | High |
| 2.1 |  | Click on Descending |  |  | RPA Tool Element Selector | Medium |
| 2.2 |  | Right click on CMM VOME current days file |  |  | RPA Tool Element Selector | High |
| 2.3 |  | Click on Download |  |  | RPA Tool Element Selector | High |
| 2.4 |  | Click **on save dropdown** |  |  | RPA Tool Element Selector | High |
| 2.5 |  | Click on Save As |  |  | RPA Tool Element Selector | High |
| 2.6 |  | Type the path in FILE NAME text field |  |  | RPA Tool Element Selector | High |
| 2.7 |  | Click on Save |  |  | RPA Tool Element Selector | High |

###### **Opening Files**

The process/module highlights the detailed activities performed for to open the Files

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Description | Screenshot | Template Reference | Suggested tool functionality | Robustness (High, Medium Low) |
| 3 |  | Open CMM VOME file |  |  | Used Invoke power shell activity | High |
|  | Open NEW ZFNL Concern Aging |  |  | Used Invoke power shell activity | High |
|  |  | Open DAILY CONCERN AGING MACRO |  |  | Used Invoke power shell activity | High |

###### **4.Excel Operations**

The process/module highlights the detailed activities performed for Excel Operations.

| Step | Sub Step | Description of functionality | Screenshot | Template Reference | Suggested tool functionality | Robustness (High, Medium Low) |
| --- | --- | --- | --- | --- | --- | --- |
| 4.1 |  | Operations like copy, Pasting, unfiltering,unfreezing |  |  | RPA Tool Element Selector | Medium |
| 4.2 |  | Click on Generate Report of New ZFNL Concern Aging |  |  | RPA Tool Element Selector | High |
| 4.3 |  | Operations like Format Painter |  |  | RPA Tool  Element Selector | Medium |
| 4.4 |  | Click on Execute in Raw Data sheet of DAILY CONCERN AGING MACRO |  |  | RPA Tool  Element Selector | High |

###### **5.Pasting in PNG Format in Excel**

The process/module highlights the detailed activities performed for Excel Operations.

| Step | Sub Step | Description of functionality | Screenshot | Template Reference | Suggested tool functionality | Robustness (High, Medium Low) |
| --- | --- | --- | --- | --- | --- | --- |
| 5.1 |  | Ctrl+Alt+v in Outlook to paste as Picture |  |  | RPA Tool Element Selector | Medium |
| 5.2 |  | Click on PNG |  |  | RPA Tool Element Selector | High |
| 5.3 |  | Click on OK |  |  |  |  |

## Input, Working and Output Templates for Automated Process

The following section lists the templates that are being used in the automated solution

| Sr. # | Template Name | Document Type | Description | Screenshots |
| --- | --- | --- | --- | --- |
| 1. | **Input file** | Excel <.xlsx> | The Session File is used by the robot to read values, making the automated process flexible whenever there is a change in user or environment |  |

## Process/Transaction Exit Activities and Expiry Criterion

**Process/Transaction Exit Activities** – The below are the set of high level activities the robot will perform whenever it exits the process (after successful or unsuccessful completion)

1. Update the details of ZFNL Concern Aging in input File
2. Close all the Applications.

**Process/Transaction Expiry Criterion** – Events during which the process would expire and wouldn’t continue further for processing the invoice

* The Input file is not available.
* The CMM VOME file not stored & cannot access the file.
* The CMM VOME file is not uploaded in the sharepoint.
* The CMM VOME file does not have Mail Sent Out Report sheet.

## Automated Process Risks and Dependencies (robot specific)

The following section lists key risks and dependencies specific to automated process.

| Sr. # | Description | Action | Owner | Due Date |
| --- | --- | --- | --- | --- |
| 1. | Change in the file name completely result the bot not able to download the fie | Robot to flag an exception in case it is not able to download the file. | Developer | To be coded before UAT |
| 2. | If Mail Sent Out Report sheet in not there in CMM VOME file result the bot will not able to process the further flow | Robot to flag an exception in case it is not able to find the CMM VOME file | Developer | To be coded before UAT |

## User Credentials Requirements

User credentials required by the automated solution to access the applications in scope are listed below.

| Application Name | Access Provided | Employee ID to mirror, if any | Storage of Credentials |
| --- | --- | --- | --- |
| Sharepoint | Standard access | Access has been provided as required | -NA- |

# Process (Technical) Design

## RPA Solution Model

The table below lists the modules developed as Partial of RPA solution build to execute the automated process. The module name follows Camel Casing nomenclature

| Module # | SDD Ref. | Modules | Description | Purpose/Objective | Input | Output | Reusability |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M1 | 1 | Open URL (Sharepoint) | This Process Involves to open the URL | For opening the Sharepoint | URL | Open the Sharepoint | No |
| M2 | 2 | Click on Modified | The process involves to click on Modified to get the Dropdown of it. | To select Descending in dropdown | -NA- | -NA- | No |
| M3 | 3 | Click on Descending | The process involves to click on Descending | To make the files list in descending order | -NA- | -NA- | No |
| M4 | 3.1 | Click on Save dropdown | The process involves to click on Save dropdown | To click on Save As option | -NA- | -NA- | No |
| M5 | 4 | Click on Save As | The process involves to click on Save As | To get the pop – to enter file path | -NA- | Will get a pop up inorder to save the file | No |
| M6 | 4.1 | Type the File Path in File Name text field | The purpose is to enter the file path in file name | To save the file | -NA- | -NA- | No |
| M7 | 5 | Click on Save | It will save the file in specified path | To save the file | -NA- | -NA- | No |
| M8 | 6 | Click on Generate Report in MAIN SHEET of New ZFNL Concern Aging | The purpose is to click on Generate Report | After click Operation the Macro will run | -NA- | Will get the accurate data | No |
| M9 | 6.1 | Click on Execute in Raw Data sheet of DAILY CONCERN AGING MACRO | The Purpose is to click on Execute | The Macro will Trigger | -NA- | Will get the accurate data | No |

## Issues and Challenges Encountered during Solution Build

The section below lists the issues and challenges encountered during the solution build and the actions taken to resolve them

| S. No. | Issue type | Affected Application | Implication | Action Taken | Date raised | Date resolved |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | .xlsx | .xlsx | Created Macro for Static moves | Macro has been updated for dynamic usage | -NA- | -NA- |

## Exception Management & Handling

The table below lists various process and system exceptions handled by the automated solution

| Ref | ID | Exception Description | Action on Exception | Exception Message |
| --- | --- | --- | --- | --- |
| 1.1 | E\_1.1 | System – Unable to find the file in sharepoint | File has not been uploaded | “File has not been uploaded, Please run the bot after some time “ |
| 2.1 | E\_2.2 | System –  Unable to find the sheet in downloaded file | File is not been loaded properly | “File is not been loaded properly, Please run the bot after some time” |
| 3.1 | E\_2.3 | System –Opening the Sharepoint URL | Page is loading for more time | “Close the window, Run the bot again” |

## Change Request Log

The table below lists the changes suggested during development and UAT. For detailed change request, kindly refer the document “Ford RPA Prod Fin Change Log” placed at section [Reference Documents, Links and Templates](#_Reference_Files). The documents provide the information of the Change Requests that has been made by the business and agreed to be incorporated as Partial of the automated solution.

| # | Change Request | Area of Change | Reason for Change | Original Step/ Logic as per SDD (V 0.1) | Change Criticality |
| --- | --- | --- | --- | --- | --- |
|  | -NA- | -NA- | -NA- | -NA- | -NA- |

# Testing / UAT Requirements

## Test Cases / Scenarios

The table below lists various scenarios tested during User Acceptance Testing (UAT). For detailed test case scenarios, kindly refer the document “Test Cases Invoice Processing” within “Ford RPA” placed at section [Reference Documents, Links and Templates](#_Reference_Files)

| S. No. | Test Scenario | Description | Expected Result |
| --- | --- | --- | --- |
| T1.1 | Extracting Data from the downloaded file | Robot to extract list of data from the CMM VOME file | 1. Copy the data from Concern Approval sheet of CMM VOME file to Concern Approval sheet of NEW ZFNL Concern Aging  2. Copy the data from Mail Sent Out Report sheet of CMM VOME file to Mail Sent Out Report sheet of NEW ZFNL Concern Aging |
| T1.2 | Launch the Sharepoint successfully | Robot to launch the Sharepoint successfully | Able to access Sharepoint inorder to download the file |

## Test Plan and Approach

The table below provides the test plan and approach adopted during the UAT

| Area | Robot | Robot ID | Scenarios Tested | Start Date | End Date | Time Slot | Operator | Status |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Accounts Payable | ZFNL Open Concern Aging Report |  |  |  |  |  |  | Successfully Completed |

## UAT Setup Information

The below sections lists the information where UAT has been conducted

| System | System Type | Tester | Location |
| --- | --- | --- | --- |
|  |  |  |  |

The UAT was conducted in remote server set up by the Client. The solution was run and controlled from the RPA Tool connected in the local machine. UAT has been within the given time slot of 2:00 PM (IST) till 8:00 PM (IST) from <date till<date. Any reference, input and output files has been accessed at shared folder path provided by the LoB.

## UAT Success Criteria and Sign-Off

For detailed test results, kindly refer the document “Test Results” within “Ford RPA Prod Fin\_UAT Test Plan and Results” placed at section [Reference Documents, Links and Templates](#_Reference_Files). The document provides the information on results of the UAT conducted for testing the automated solution.

The following documents has been signed off as Partial of the sign off process.

###### Sign off from the LOB on documented Test Scenario

###### Sign off from the LOB on documented UAT Test Results

###### Sign off from the Test results uploaded in Testing tool

###### Uploading SDD in docs

# Solution Operation and Maintenance

## Initial Setting for Solution Deployment

Table highlights the system setup that is required to be done before setting up the automated solution

| System | Instruction | Screenshot |
| --- | --- | --- |
| ZFNL Open Concern Aging Report | Environment Configuration Ensure the environment is configured in the local instance of the ZFNL Concern Aging in the system | -NA- |
| RPA Tool | RPA Tool Configuration Steps | -NA- |
| Windows Credential Manager | Storing Bot Credentials | -NA- |

## Reports and Audit Trail

Table highlights the instruction for reading various reports that are captured as Partial of the automated solution

| Reports | Purpose | Instruction | Screenshot |
| --- | --- | --- | --- |
| -NA- | -NA- | -NA- | -NA- |
| -NA- | -NA- | -NA- | -NA- |

**Note – Kindly don’t change the template structure of any document. Also, please do not change the formulae of any field in the templates and reference files.**

## Process SLAs and Metrics

Table highlights the key parameters that has been used to identify the performance of the automated solution.

| Metric Type | Starting Metrics | Target Metrics | Actual Metrics |
| --- | --- | --- | --- |
| Processing Frequency | Daily | Daily | <To be updated post Go Live> |
| Process time window | 12:00 – 13:00 | TBD | <To be updated post Go Live> |
| Average Processing Time (As-Is Process) | 4 – 8 minutes | 2 – 6 minutes | <To be updated post Go Live> |
| Process Rework Rate | 5% - 10% | 1% - 2% | <To be updated post Go Live> |
| Average Process volume | 30,000 per month | 30,000 per month | <To be updated post Go Live> |
| Peak Process volume | -NA- | -NA- | <To be updated post Go Live> |
| SLA per record | 24 hours | 24 hours | <To be updated post Go Live> |
| FTE required (As-Is process) | 20-25 | TBD | <To be updated post Go Live> |
| FTE required (Automated Process) | -NA- | TBD | <To be updated post Go Live> |
| Number of robot operators | -NA- | TBD | <To be updated post Go Live> |

## Robot Operation Scheduling Instructions

Table provides the information on scheduling instruction for triggering the automated solution.

| Parameters | Details |
| --- | --- |
| Robot Operator | TBD |
| Robot Schedule | Daily |
| Trigger (Manual, On creation of file, On logging in, etc.) | TBD |
| Robot Run time | TBD |
| Robot Stop time | TBD |

## Deployment Challenges and Resolution Adopted

The below section highlights the challenges faced for migrating the automated solution to the production and resolution adopted to meet the challenges for successful migration of the solution.

| Deployment Issue | Issue Type (Environment change, Change request, Defect) | Date Identified | Date Resolved |
| --- | --- | --- | --- |
| <To be updated post Go Live> | <To be updated post Go Live> | <To be updated post Go Live> | <To be updated post Go Live> |

## Business Continuity Guidelines

The below section highlights the business continuity for automated process as Partial of disaster management process.

* Invoice Process team to identify a human resource for each shift to take over bot load in case of a business continuity issue
* Robot operator to inform the process owner and functional lead in case of bot unavailability for an extended period
* Process owner and functional lead to initiate business continuity plan and assign bot load to the identified human employee
* Process owner and functional lead to manage work allocation among the human employees till the time bot is unavailable

# Appendixes

## Reference Documents, Links and Templates

The table below lists all the reference files

| # | Referenced Section | File Name | File |
| --- | --- | --- | --- |
| 1 | Manual Process (Current State) Overview | As Is Process Map |  |
| 2 | Automated Process (To – BE State) Overview | To Be Process Map |  |
| 3 | Test Cases/ Scenarios | Test Cases Invoice Processing |  |
| 4 | UAT Success Criteria and Sign Off | Test Results |  |
| 5 | Change Request Log | Change Log |  |

## Abbreviations

The table below lists various abbreviations and acronyms used in the document

| Abbreviation | Full form |
| --- | --- |
| RPA | Robotic Process Automation |
| CoE | Center of Excellence |
| SDD | Solution Design |
| Doc. | Document |
| UAT | User Acceptance Testing |
| LoB | Line of Business |
| VAT | Value Added Tax |
| PO | Purchase Order |
| GL | General Ledger |
| CC | Cost Center |
| Tcode | Transaction Code |
| VAT | Company VAT Registration |
| GR | Good Receipt |
| TBD | To Be Decided |