Solution Design Document

VENDOR ONBOARDING PROCESS

Revision History

Rev. #	Date	Section/Page#	Revision Summary	Author
1	03/10/2023	All	Created first version	Constantin Dumitrascu
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Contents

I. PURPOSE

Outlines the major components of the Master Project (the overall output of the development, containing one or multiple projects that together cover the scope of the robotic process automation) taking into account all the business restrictions (scheduling, peaks, future increases in volume etc.).
The focus of the Solution Architect will be on:

- Robustness;
- Scalability;
- Efficiency;
- Replicability;
- Reusability of component

The information herein is targeted primarily at the developers that will initially implement the solution and subsequently at the support developers in case of change requests.

The automation solution will utilize the RE framework with separate Dispatcher and Performer model. The Dispatcher will be responsible for collecting all key data necessary to generate a VendorOnboarding transaction item which will be committed to the appropriate Work Queue within the UiPath Orchestrator. In turn, the Performer will work each transaction sequentially, focusing on the work steps required to enter vendor details or notify the vendor that they are already entered in the system..

II. AUTOMATED PROCESS DETAILS

Details filled in need to reflect the actual information for the Master Project released for production.
The following table will be populated:

Item	Description
Master Project Name	Vendor onboarding process
Robot Type	Unattended
Orchestrator used?	Yes
Scalable	Yes
UiPath version used	2023.10

Summary

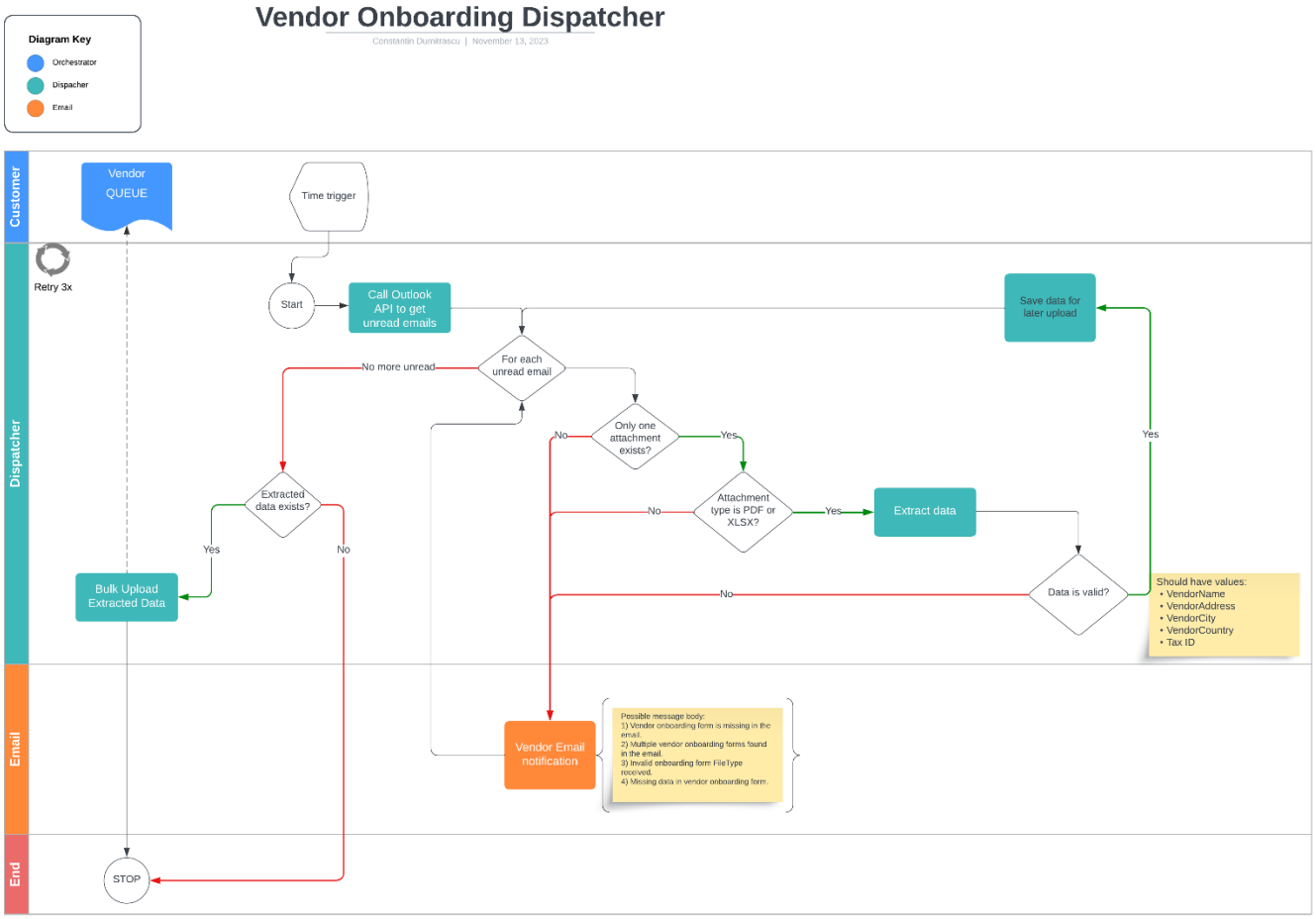
The process saves attachments from unread emails, extracts the information within and inputs the data into 2 external applications – an ERP (System1) and a CRM (System3).
From a technical perspective, the process will be split into 2 subprocesses:

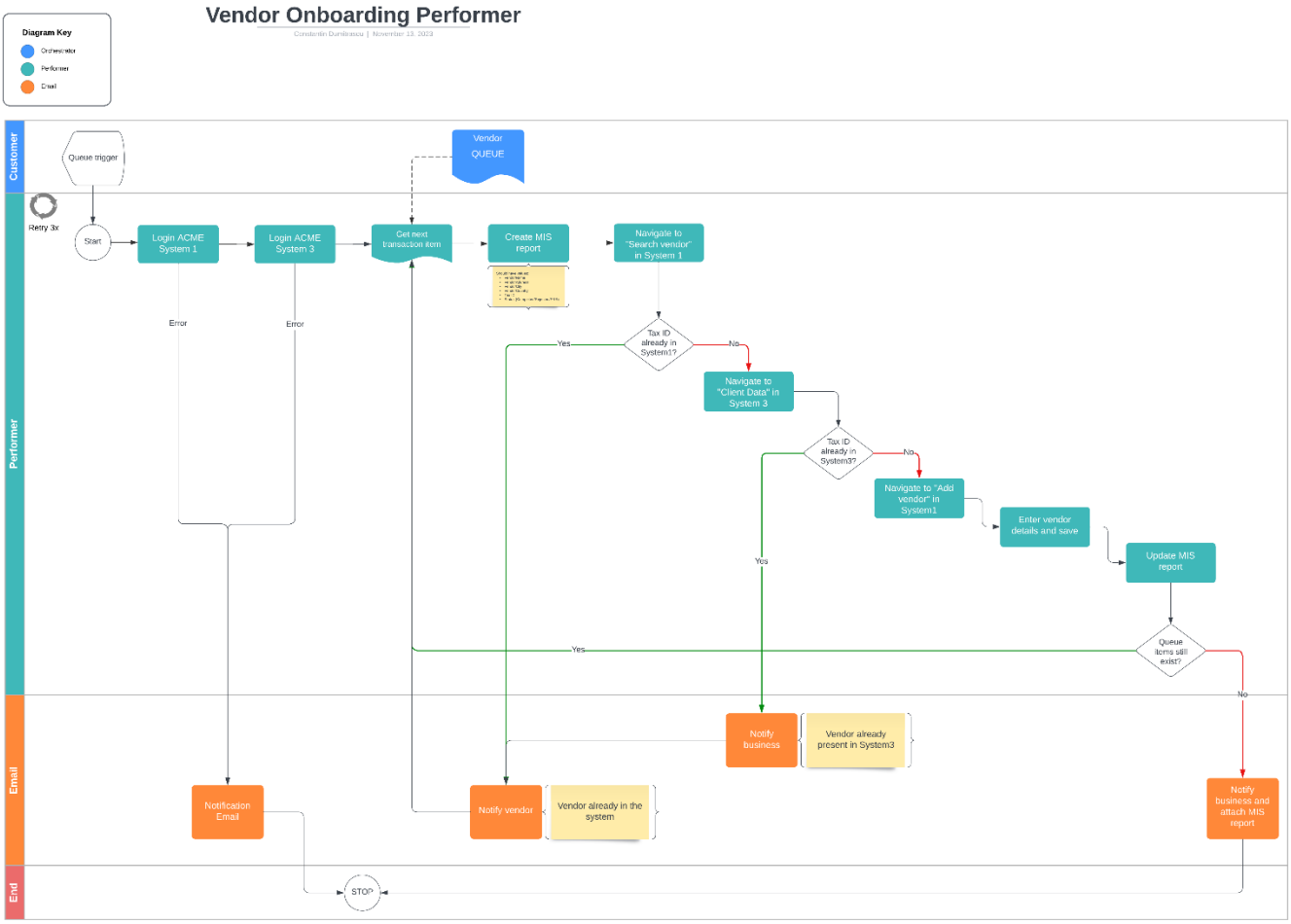
1. VendorDispatcher – reads the information in the attachments and performs a Bulk Upload to add all data found to the Orchestrator Queue. One dispatcher job will run 20 times per day according to business requirements.
2. VendorPerformer – Retrieves one queue item from the Orchestrator Queue, processes it in the ERP and CRM apps according to the rules described in the PDD.

III. RUNTIME GUIDE

1. Architectural structure of the Master Project

Display the interaction between components (package / robots, Orchestrator queues, and running order) in a diagram.





2. Master Project Runtime Details

Outlines the details of the automated process by filling in the table below.

ITEM NAME	DESCRIPTION *Fill in each bolded section - empty fields are not allowed. If the section does not apply to your automation then mark as n/a.*
Production environment details	ACME local machine
Prerequisites to run	Dispatcher: Chrome, Excel, Acrobat Performer: Chrome, Excel, Acrobat
Input Data	Dispatcher: unread emails with vendor onboarding form Performer: queue items with data
Expected output	Dispatcher: vendor notification emails, queue items Performer: vendor notification emails, MIS report
How to start the automated process	***Dispatcher: time based trigger*** ***Performer: queue based trigger***
Reporting (queues reporting, Kibana or another platform)	*Queues reporting* *Orchestrator logs*
How is Orchestrator used?	*Orchestrator used for scheduling, asset passwords and queues.*

Password policies (mention any specific compliance requests)	*n/a*
Stored credentials (Never use hardcoded credentials in the workflow!)	*Stored in Orchestrator Assets, linked to current folder.*
List of queues names (Naming convention: ProcessName_QueueName)	*Vendor_Queue* *Number of retries: 3* *Unique reference: TaxID*
Schedule Details	daily
Multiple Resolutions Supported? (in case of image automation / Citrix and VDI)	n/a
Recommended Resolution	n/a

3. VendorDispatcher

ITEM NAME	DESCRIPTION *Fill in each section - empty fields are not allowed. If the section does not apply to your automation then mark as n/a.*
Environment used for development (name, location, configuration details etc)	*localhost*
Environment prerequisites (OS details, libraries, required apps)	*Windows 10, Studio license, Microsoft Excel, Adobe Acrobat*
Repository for project (where is the developed project stored)	***n/a***
Configuration method (assets, excel file, Json file)	Excel file in project
List of reused components	*n/a*

4. VendorPerformer

ITEM NAME	DESCRIPTION *Fill in each section - empty fields are not allowed. If the section does not apply to your automation then mark as n/a.*
Environment used for development (name, location, configuration details etc)	*localhost*
Environment prerequisites (OS details, libraries, required apps)	*Windows 10, Studio license, Microsoft Excel, Adobe Acrobat*
Repository for project (where is the developed project stored)	***n/a***
Configuration method	Excel file in project

(assets, excel file, Json file)	
List of reused components	*n/a*

5. Project(s) workflows

TO BE ADDED AFTER DEVELOPMENT

Workflow Name	Description
Example: Main	***Example:*** *invokes all the other workflows*

6. Packages

Include the list of packages and high-level description for each of them, to explain their purpose

Package Name	Description
UiPath.Excel.Activities	
UiPath.System.Activities	
UiPath.Testing.Activities	
UiPath.UIAutomation.Activities	
UiPath.PDF.Activities	

7. Assets

TO BE ADDED AFTER DEVELOPMENT

Package Name	Description
System1.Credentials	Credentials used to login to System1

8. Exceptions

During the process run, certain scenarios might arise that the robot cannot process and will require manual intervention. These are defined as exceptions. Below are the two types of exceptions:

Business Exceptions – A business logic error or missing data which is encountered on a daily basis by the business unit. There is a clear workaround that can be resolved by reviewing the case.

Application Exceptions – This is defined as an unexpected error encountered by the robot such as a network error or an application error which is outside the control of the business unit and will need to be resolved by IT or the RPA team

Exception number	System Exception Reason	Exception Handling Method

SE1	Chrome is not available or not installed on this machine	• Display message box on agent machine – "*The Google Chrome application is not available or installed on this machine. Automation cannot proceed and will be terminated.*" • The automation cannot proceed if the Chrome web-browser is not available or installed on agent machine, as it's used to access System1. • SE thrown in Orchestrator – "*Google Chrome is not available or installed.*"
SE2	System3 application is not available	• Display message box on agent machine – "*The System3 application is not available or installed on this machine. Automation cannot proceed and will be terminated.*" • The automation cannot proceed if the CRM (System3) is not available or installed on the machine. • SE thrown in Orchestrator – "CRM (System3) is not available or installed."

9. REPORTING

MIS report

MIS_report.xlsx

10. Testing

Testing is an essential part of any development process. Its main purpose is to ensure the automated process is functioning in the way it is supposed to. By beginning the testing process during development, any issues, bugs, and errors can be identified and potentially corrected at the earliest possible opportunity.

Each level of testing is responsible for different parts of the automated solution, reassuring high quality of each of the elements delivered. Each of the stages must be completed before the solution is released to the production environment.

The stages of testing are:

Unit Testing - Focuses on the individual components and workflows created specifically for the process in scope, assessing whether they function as according to the original design.

Responsibility: Development Team

System Integration Testing – Ensuring all required functionalities, both business and technical, are implemented, as well as ensure unit testing has been completed successfully, development Best Practices have been applied and code review has been completed by a Solution Architect. There will usually be a round of fixes to be implemented before the automation can proceed further.

Responsibility: Dedicated tester / Solution Architect

User Acceptance Testing – Process team take responsibility of this phase of testing to ensure they are happy with the results of the automated business process. Sign-off of this phase is business led and mandatory in order to proceed further. Generally, there will be iterative fixes to be implemented that have been discovered during the user testing of the automation.

Responsibility: Dedicated tester & Business Unit

Pre-Production Testing – Validates the readiness of the product prior to Production deployment.

Responsibility: Dedicated tester, Development Team & Solution Architect

Dry-Run –Monitor the initial cases run by the process to account for any environmental differences between Pre-Production and Production.

Responsibility: RPA Business Analyst & Business Unit

11. Security

Security is a vital aspect of digital processes as it provides an extra layer of protection from the public. There are different ways in which security is implemented when automating an existing process, some of which are discussed in this section.

Sensitive data such as passwords and client/customer information (like information stored in databases) must never be unnecessarily stored outside of its origin application when handled by the RPA solution.

Similarly, user and application credentials used by the RPA solution must also never be unnecessarily stored or shared with any unauthorized persons. In addition to that, if the robot is dealing with password reset policies that are internal to the client, those policies must be followed to ensure security is maintained.

API keys are often used within RPA solutions to allow access to certain applications, and these are ideally stored in Orchestrator credential assets and only accessed when needed. As with credentials, they should never be shared or stored elsewhere.

12. Compliance Considerations

Display the interaction between components (package / robots, Orchestrator queues, and running order) in a diagram.

Item	Specific Considerations (use N/A if not applicable)
Sarbanes Oxley (SOX)	n/a
HIPAA	Orchestrator approved for storing confidential information (in queue items). Do not store PII or PHI to Logs.
FERC Standards of Conduct	n/a
Personally Identifiable Information (ensure process follows PoLP)	Orchestrator approved for storing confidential information (in queue items). Do not store PII or PHI to Logs.
Others	

IV. OTHER DETAILS

Future Improvements

Fill in any improvements that need to be considered for the future:

Other Remarks

Please mention here any other points that you consider relevant for the automation process.

V. GLOSSARY

The main terms used in the Solution Architecture Document are defined below:
Master project - the overall output of the development, containing one or multiple projects that together cover the scope of the robotic process automation. There is a 1 to 1 connection between the Master Project and the Process to be automated (As presented in the PDD).
Project - an UiPath Studio project containing one or multiple workflow files. A project can be converted to a package and run independently, covering a particular scope within the master project. Or multiple projects can be converted into one package depending on the aims and restrictions of the automation. The project is used when defining the development and support phase of the automation.
Package - the output of compiling one or multiple projects. A package can be deployed on the robot machine and be executed by the robot service. Only one package can be executed at a given time by a robot. The package is used when defining the running phase of the automation.
Workflow - a component of the package, the workflow encapsulates a part of the project logic. The workflow can be of type: sequence, flowchart or state machine. A workflow is saved as an .xaml file inside the project folder. A workflow file can be invoked from another workflow and by default there is an initial workflow file that will run when executing the package.
Activity - an action that the robot executes.
Sequence - a workflow where activities are executed one after another, in a sequential order
Flowchart - a workflow where activities are connected by arrows and the logic of the workflow can be easily followed in a visual manner. The flowchart can also be exported as an image from UiPath studio.
State machine - a more advanced way of organizing a workflow, similar to a flowchart.
BOR - Back office robot
FOR – Front office robot
Orchestrator – Enterprise architecture server platform supporting: release management, centralized logging, reporting, auditing and monitoring tools, remote control, centralized scheduling, queue/robot workload management, assets management.