# rpa\_0009 - Technical Design Details(TDD)

#### Version History:

Version #	Created By	Revision Date	Revision Details	Reviewed By	Approval By and Date
0.1	Priyadarshi Das	29 Jun 2022	Initial Draft     TDD Page created under Portal Refunds page     Added TDD template		
0.2	Priyadarshi Das	30 Jun 2022	Updated High-level Automation Solution Updated Operational Overview Modified Complexity of the process Added In-Scope and Out of Scope details Modified Risks and Mitigation		
0.3	Priyadarshi Das	01 Jul 2022	Modified testing strategy     Added Test cases     Added assumption details		
0.4	Priyadarshi Das	06 Jul 2022	Added success criteria details     Added exception handling details     Added technical exception     Added business exception     Updated development requirements     Added target application details		
0.5	Priyadarshi Das	07 Jul 2022	Updated PDD links in Reference Docs table     Modified design Considerations to Single     Component Overview - Initial draft		
0.6	Priyadarshi Das	08 Jul 2022	Component Overview -  1. Updated all the tasks name Updated tasks details -  a. Component/Module Overview b. Task Type & relevant information c. Process Step# d. Packages		
0.7	Priyadarshi Das	11 Jul 2022	Component Overview -     Modified tasks details -     a. Process Step#     b. Packages		
0.8	Priyadarshi Das	12 Jul 2022	Modified Process alerts and notification     Updated design query		
0.9	Priyadarshi Das	24 Aug 2022	High level technical flow diagram updated		

A - High Level Automation SolutionB - Operational Overview

- E Risks & Mitigation
  F Testing Strategy
  G Assumptions

- H Success Criteria

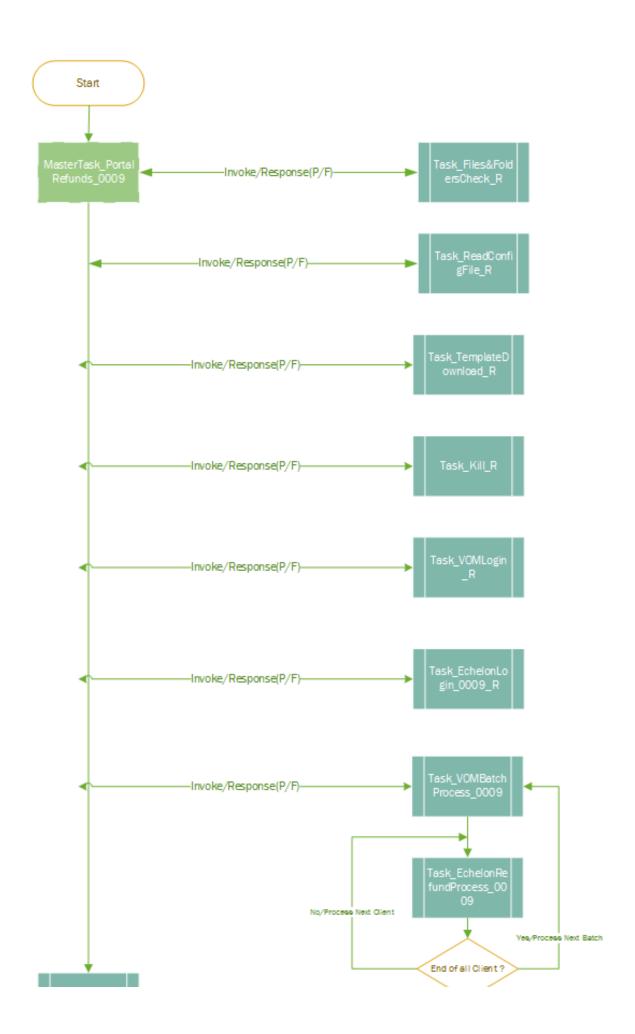
- I Exception HandlingJ Development Requirements
  - People Requirements for developing the automation
     Target applications and access levels of the automation are detailed below:
     To Be Bot Requirements:

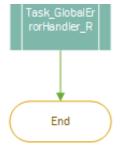
- M Design Considerations
   Single or Multiple Robots Solutions
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- N Queues
- O Component Flow Diagram & Overview
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- T Design QueriesU Sign Offs

# A - High Level Automation Solution

The below diagram gives a high level overview of the automation solution to be executed by the Bot.





TechnicalFlow\_PortalRefunds\_0009.vsdx

# **B** - Operational Overview

This section provides a view of how the automation will be designed by the Engineering team.

Decision Point	Comments
Who is the Business Process Owner?	Nicola Wyness
When will the automation run?	8:00 AM Every Day (Mon-Sun) BST
How will the automation execute in production (schedule, trigger, both)?	Schedule
If the automation is triggered, who will trigger the automation? How will it be triggered?	Not Applicable
Who is accountable for input and output files utilized by the automation?	Business Team (Email)
What is the business criticality of the automation?	Medium

# **C - Complexity of To-Be Process**

The technical complexity of the process is **Medium**.

## **D- Scope**

Clearly indicate what is in-scope and out-of-scope for the automation using the table below.

## 1. In-Scope

No.	Scenario
1	VOM Application : Login to the application and search for Batch
2	Echelon Application : Login to the application and search for client details and policy.
3	Policy Refund Validation : If refund is due then process the refund amount
4	Email business exception details to business team email id.
5	Raise Service Now ticket with relevant details for technical exceptions.
6	Record level logging will be in scope.
7	Detailed bot Error report is in Scope.

### 2. Out-of-Scope

No.	Scenario
1	Batch file generation or creation (business team needs to provide)

# E - Risks & Mitigation

Detail the risks of the automation and how each risk will be mitigated.

Risk	Mitigation
In case the unexpected failure of the automation task	Monitor and report issue. (Bot or Bankops to raise an Incident to RPA Automation team based on the failures reported through Splunk.)     Operations team to manually follow up on the investigation.     Should the issue remain unresolved after 24 hours, operations team to advise the technical group to abort the RPA.
Scheduled changes of target systems (upgrades, outages)	Business team must inform RPA support team for the change request at least 60 days in advance. Post which RPA team can revert with the change implementation timelines which can be mutually agreed between Business team, RPA team
Failure due to change in the target systems	Recovery plan must be implemented if the updates on BOT are not completed within the deadline  Recovery Plan:  1. RPA team to inform business team of their defined timeline of completion  2. If timeline to complete the resolution will be beyond the internal deadline, Business team must perform manual process
How to recover from an automated process failure and re-trigger job	In case of failure due to business exception, the business team may make necessary corrections and place the input file again for the Bot. Bot will pick up in the next schedule.  In the case where the automated process failed due to bot failure the remaining files to be processed will be picked up by bot in the next run.

# F - Testing Strategy

Testing will be conducted in 3 phases:

Phase	Responsible	
Unit Testing	Developer	
SIT	Developer, BA	
UAT	BA, Business Team	

Unit testing will be performed by the developer while development phase to ensure the code is working for given requirements. SIT Testing strategy:

Decision Point	Comments
What will be entry criteria?	Test environment readiness, with test data
What will be Exit criteria?	All test cases should pass SIT Sign Off on the automated process
Who will provide the test data?	Business Team
Who will approve if any deviation in process is observed/required?	Business Team
Who will be responsible for creation of testing environment?	COE Team
Who will maintain the testing environment?	COE Team
Who will deploy build in SIT environment?	COE Team
How the defect management will be done?	Business Analyst will capture all defects.
Who will resolve the SIT defects?	Development team
Who will verify the SIT defects?	BA
Who will provide the process knowledge to QA?	ВА

#### UAT testing strategy:

Decision Point	Comments
What will be entry criteria?	SIT Sign Off on the automated process     Test environment readiness with required test data.

What will be the exit criteria?	All test cases should pass     UAT Sign Off on the automated process	
Who will deploy build in UAT environment?	COE team	
Who will resolve the UAT defects?	Development Team	
Who will verify the UAT defects?	BA/Business team	

Attached is the test plan having the test cases:

<mark>Serial</mark> i	Feature to be Tested	Test Scenario	Expected Result	Scenario Type
1	Edge Browser Exist	Edge Instance	Bot is able to successfully close the Edge instance after all the activities are done	
2		Bot is able to Book-out the batches in VOM app	Bot is able to successfully Book out the batches.	Success
3		Bot is able to find the Customer policy in Echelon app	Bot is able to successfully find the Customer details.	Success
4		Bot is able to validate refund due for the customer on not		Success
5			Bot is able to validate and send Exception email.	Success
6		Bot able to validate that credentials are not correct	Bot is able to validate and send Exception email.	Success

# **G** – Assumptions

Below are the assumptions on which automation will be planned:

#	Assumptions
1	Bot ID will get both read and write access to the process specific folder in the RPA shared drive
2	Bot ID will get read and write access to the following applications i.e., VOM & Echelon
3	Average 40-60 customer need to process per day and AHT is 2.53 mnts, hence the solution will be a single Bot solution.
4	Archival of logs will be taken care by the CoE and business on need basis and as per policy.
5	Service-now tickets needs to be raised only for technical exceptions.
6	Production Bot will be monitored and any related issues will be fixed by production support team.
7	Developer will have access to development environment.
8	One-time setup will be completed by COE team prior to Bot deployment on any new environment.
9	Client should have a valid and active policy number.
10	There will be no blank entry for mandatory fields like Client Reference number, Refund amount & Line no.
11	Bot will login only once and process all(multiple) batches and process for refunds.

### H - Success Criteria

1	Bot should be able to validate and process for refund.
2	Bot should be able to send Email Notification to business in case of success or business exception.
3	Bot should be able to raise Service Now tickets for technical exceptions.
4	Transaction logs should be created, saved in the shared drive and production support should have access to it.
5	Bot should be generating execution or transaction status report at the end of each scheduled run.

# I - Exception Handling

Document the business and technical exceptions that need to be handled by the automation. Should adhere to the Automation Anywhere Exception Handling Guidelines. This needs to include all of these exceptions: system, business, validation, data, database, input/output, timeout, locked file. Retry logic is required should the automation terminate.

Exception Scenario	Туре	Bot Actions	Error Message to be captured	Recipients
Bot cannot access the VOM application	Technical Exception	Bot will raise a Service Now ticket with appropriate details.	VOM application is not able to accessible by bot	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
				PROD: AutomationAnywhere@t escobank.com
Bot cannot access the Echelon application	Technical Exception	Bot will raise a Service Now ticket with appropriate details.	Echelon app is not able to accessible by bot	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
				PROD: AutomationAnywhere@t escobank.com
Bot is unable to send email.	Technical Exception	Bot will raise a ticket on Service Now that email functionality is not working.	Bot unable to send email. Please check the email accessibility and settings.	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
				PROD: AutomationAnywhere@t escobank.com
Bot unable to access RPA log files folder.	Technical Exception	Bot will raise a Service Now ticket with appropriate details.	Log files folder is not accessible	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
				PROD: AutomationAnywhere@t escobank.com
Bot unable to push logs to Splunk for technical issues.	Technical Exception	Bot will raise a Service Now ticket with appropriate details.	Unable to push logs to Splunk via Splunk API	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
		Bot needs to send an email communication to RA email ID.		PROD: AutomationAnywhere@t escobank.com
		Bot needs to log in RPA log files folder		
Shared drive not accessible	Technical Exception	Bot wll raise a Service Now Ticket,	"Bot is unable to access the shared drive <path>. Please look into this and provide necessary access."</path>	Dev/PPE: AutomationAnywhere _nonprod@tescobank.com
				PROD: AutomationAnywhere@t escobank.com
Bot unable to access or find any batch record in VOM app	Business Exception	Bot to send an exception email to Business team	"Bot unable to find batch in VOM"	TBD
Refund Validation	Business Exception	Bot to send an exception email to Business team	"No refund required, refund has already been processed by another user perhaps following a customer call."	TBD
Refund amount exceeds Max Refund	Business Exception	Bot to send an exception email to Business team.	"Refund amount £*** exceeds max refunds £***"	TBD
Refund is not successful or the balance is NOT £0.00	Business Exception	Bot to send an exception email to Business team.	"Refund is not successful"	TBD

NOTE: Either Bot will create a Service Now Incident via Service Now API or Bank Operations team will raise incidents based on Splunk alerts.

# J - Development Requirements

Document the people and software development requirements. Also include current volume of as-is process and proposed bot requirements.

• People Requirements for developing the automation

Role	Activity	Access required	Location
Developers/Bot ID	Build and Unit Testing	VOM & Echelon – Read/Write Outlook – Send Email MS Office applications – Read/Write Process specific folder in business shared drive or sharepoint for DEV location – Read/Write Read/Write access to logs folder Control Room access on Automation Anywhere BOT ID – Read/Write Access to VOM/Echelon/Outlook/MS Office/Shared Drive BOT ID - Access required on VOM & Echelon	
Testers	Testing/SIT/UAT	Control Room access on Automation Anywhere BOT ID – Read/Write Access to VOM/Echelon/Outlook/MS Office/Shared Drive BOT ID - Access required on VOM & Echelon	
Production Support	Hyper-care support of Automation	Control room access for Bot Monitoring.     BOT ID – Read/Write Access to VOM/Echelon/Outlook/MS Office/Shared Drive     BOT ID - Access required on VOM & Echelon	

### · Target applications and access levels of the automation are detailed below:

Target applications	Availabili ty	Maximum Transaction Limit	Maximum concurrent transactions	Access levels	Application Type or Access Through	External / Internal	Credential Mgmt.
VOM	24X7	No Limit	No Limit	Login, Read, Write	Web application	Internal	Yes (Non-AD)
Echelon	24X7	No Limit	No Limit	Login, Read, Write	Web application	Internal	Yes (Non-AD)
MS Excel	24X7	No Limit	No Limit	Read, Write	Desktop	Internal	N/A
Outlook	24X7	No Limit	No Limit	Send Emails	Desktop	Internal	N/A
Shared folder or SharePoint	24X7	No Limit	No Limit	Read, Write	1.Windows based, or file explore. (0r) 2. Web	Internal	N/A

### · To Be Bot Requirements:

	y light Saving act Schedule Frequen cy (BST) Automation Run time (Hrs)/day		No. of Automation Licenses required (monthly) – Assuming 1-day operation	Comments		
No	0		1	Actual Automation run time might change post observations during testing.		

### **K – Reference Documents**

Name	File/Url	
Process Definition Document	https://confluence.ss.aws.tbcloud.org/x/gIUIVw	

## L - Other Technologies than RPA

Document other technologies than RPA that will be used to achieved overall business goal. Please also detail which delivery team will take on delivery and specific requirements needed

Technology	Why	Who will deliver?	Who will support?	Other specifications
NA	NA	NA	NA	NA

#### C – URL and 3<sup>rd</sup> Party Application Access

Add any URLs or 3<sup>rd</sup> party applications (not housed) that will be accessed by the automation. Indicate how credentials are managed for each entry.

Name	Location/URL	Version	Description
NA	NA	NA	NA

#### Third Party Credentials Expiry Info: NA

### **M** - Design Considerations

Enter key design elements including the number of bots required to execute the automation, key performance considerations and the queues needed to execute the automation.

### **Single or Multiple Robots Solutions**

It will be a Single bot architecture design.

#### **Performance Considerations**

Bot Performance will be mainly defined on the below items:-

- How the Exceptions has been handled in the process. All the exceptions must be handled at the process level, and each must document, and log file will be prepared.

- How the loops has been depicted and there should be no extra loops searching for data which is not required or not used for any calculations.
   Data Management- How the source file has been used and the data from applications being used for the decisions activity.
   Wait stages plays an important role in shaping up the bot performance since the static wait or unexpected delay delays the case or increases the Dynamic wait must be given preference. Only at a stage where there is no place for Dynamic wait, user can use the static wait stage.

#### N - Queues

Queue Name	Description
NA	NA

# O - Component Flow Diagram & Overview

Define the components, including objects, that are used by the automation.

Note: Component flows will be available under bot library section. Please click on the respective task name to navigate an individual flow.

#	Component/Module Overview	Task Name	Task Type & relevant information	Ne w/ Exi sting	Process Step #	Packages
1	Launch Edge Browser & Login to VOM application via credentials and application URL.	Task_VOML ogin_R	Type: Task Bot Credentials: Yes Re-usability: Yes Multi-bot: No Applications involved: VOM Browser type: Edge Trigger type: No Citrix: No Primary application type: Web Application Authors: Priyadarshi Das Dependency: No	New	Configure & Call Task_VOMLogin_R reusable component.     Send process task status to the parent bot using Task bot package.     Prerequisite: - Configuration_PortalRefunds_0009 file	Brow ser Wind ows Reco rder If Error handl er Log to File Task bot Loop

2	Open new Window in Edge Browser & Login to Echelon application via credentials and application URL.	Task_Echel onLogin_R	Type: Task Bot Credentials: Yes Re-usability: Yes Multi-bot: No Applications involved: Echelon Browser type: Edge Trigger type: No Citrix: No Primary application type: Web Application Authors: Priyadarshi Das Dependency: No	New	Configure & Call Task_RchelonLogin_R reusable component.     Send process task status to the parent bot using Task bot package.     Prerequisite: - Configuration_PortalRefunds_0009 file	• z • If • Error handl er • Log to File • Task bot • Loop
3	Check VOM landing page availability. Select first Batch and Book out batch. Select first task and collect client information. Book out case.	Task_VOM BatchProce ss_0009	Type: Task Bot Credentials: No Re-usability: No Multi-bot: No Applications involved: VOM Browser type: Edge Trigger type: No Citrix: No Primary application type: Web application Dependency: Input file Authors: Priyadarshi Das	New	<ol> <li>Validate VOM Landing page availability using Recorder and IF package.</li> <li>Navigate to My Work and select first Batch using Recorder package.</li> <li>Select First Task and collect client information using get property action in recorder package.</li> <li>Book out case using recorder action</li> <li>Loop through each task (transaction) inside each batch loop using Loop package.</li> </ol>	Wind ows Brow ser If Error handl er Log to File Unive rsal recor der //Rec order Loop
4	Check for Echelon landing page availability. Search for client policy. Validate policy details. Validate if any policy refund due. Validate Refund success or not. Navigate back to echelon client search page.	Task_Echel onRefundPr ocess_0009	Type: Task Bot Credentials: No Re-usability: No Multi-bot: No Applications involved: Echelon Browser type: Edge Trigger type: No Citrix: No Primary application type: Web application Dependency: Input file Authors: Priyadarshi Das	New	<ol> <li>Search for Customer in Echelon app using Set action in Recorder package.</li> <li>Open &amp; validate policy details with the help of Recorder, if packages.</li> <li>If correct than process for refund using recorder package.</li> <li>If incorrect than send exception with the help of Send action in Email package.</li> <li>Validate if processing amount is &gt; Max refund with the help of Number condition action in If package and using Send email action in Email package it will send exception notification using Email package.</li> <li>If processing amount &lt; Max refund with the help of Number condition action in If package then process for refund using capture action in Recorder package.</li> <li>Validate refund success notification using Recorder package.</li> <li>If validation is successful than book out and next order, if not than send exception with the help of Recorder package.</li> </ol>	Wind ows     Brow ser     If     Error handl     er     Log to     File     Unive rsal     recor der     //Rec     order     Loop
5	Master Bot to trigger the process workflow	MasterTask _PortalRefu nd_0009	Type: Task Bot Credentials: No Re-usability: No Multi-bot: No Applications involved: NA Browser type: NA Trigger type: No Citrix: No Primary application type: NA Dependency: MasterTask_T (Template task) Authors: Murali Mohan/Shankar Dokula	New	1. Process master bot skeleton will be built using mastertask template. 2. Call below subsequent child bots using Task bot package actions. a. Task_VOMLogin_R b. Task_EchelonLogin_R c. Task_ReadConfigFile_R d. Task_GlobalErrorHandler_R e. Task_Files&FoldersCheck_R f. Task_Kill_R g. Task_VOMBatchProcess_0009 h. Task_EchelonefundProcess_0009 3. Send process status communication via email to the business using Email package.	If Error handler Log to File Universal recorder /Rec Email Task

6	Read Config File to read the config file values	Task_Read ConfigFile_R	Type: Task Bot Credentials: No Re-usability: Yes Multi-bot: No Applications involved: Excel Browser type: NA Trigger type: No Citrix: No Primary application type: Excel Dependency: Config file Authors: Murali Mohan/Shankar Dokula	Exi sting	Configure & Call ReadConfigFile reusable component.     Send process task status to the parent bot using Task bot package.     Prerequisite: - Configuration_PortalRefunds_0009 file.	If Error handl er Log to File Excel adva nced Files & Folde rs Task bot
7	Global Error Handler to log the transaction status via Splunk REST API or log to file	Task_Globa  ErrorHandl  er_R	Type: Task Bot Credentials: No Re-usability: Yes Multi-bot: No Applications involved: Splunk API, CSV/Json file Browser type: NA Trigger type: No Citrix: No Primary application type: REST Web Services, Splunk Dependency: Transaction file template, Splunk API Authors: Murali Mohan/Shankar Dokula	Exi sting	1. Configure & Call GlobalErrorHandler reusable component. 2. Send process status to the parent bot using Task bot package. 3. Get response from child bot. 4. Prerequisite: - Transaction log file template, Splunk API	If Error handl er Log to File RES T web servi ces
8	Files and Folders to check or validate the required process config file, templates etc.	Task_Files& FoldersChe ck_R	Type: Task Bot Credentials: No Re-usability: Yes Multi-bot: No Applications involved: Windows Browser type: NA Trigger type: No Citrix: No Primary application type: Windows Dependency: Templates Authors: Murali Mohan/Shankar Dokula	Exi sting	Configure & Call Files & folders reusable component.     Send process status to the parent bot using Task bot package.     Prerequisite: - Transaction log file template etc.	• If • Error handl er • Log to File • Task bot • Files & Folde rs

9	Kill Task will kill the resources like Excel, outlook, web browser, console etc.	Task_Kill_R	Type: Task Bot Credentials: No Re-usability: Yes Multi-bot: No Applications involved: Windows Browser type: NA Trigger type: No Citrix: No Primary application type: Windows Dependency: Windows taskkill exe Authors: Murali Mohan/Shankar Dokula	Exi sting	1. Configure & Call GlobalErrorHandler reusable component. 2. Send process status to the parent bot using Task bot package. 3. Get response from child bot.  Example: - Taskkill.exe  /f /im notepad.exe,  /f /im excel.exe	er • Lo to Fr • Ta bo	rror andl og le ask
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#### Note:

- 1.Info/summary log & transaction logs needs to be captured and send to the RPA Splunk channel.
- 2. Service now ticket needs to be generated for any technical exception.
- 3.Email alert needs to be communicated for any business exception and bot completion status.

### P- Process Alerts/Notifications

Document all alerts and notifications produced by the automation.

Alert Type	Scenario	Email Subject	Email Content	Recipients
Email with a successful execution of the bot workflow communication	Generated when business process execution is completed successfully			Process SME

# **Q-SLA Expectations**

Include the criticality of the automation using the below grid.

Criticality: Priority 4

PRIORITY EXPECTATIONS SLA Definitions	PRIORITY 1 (CRITICAL)	PRIORITY 2 (HIGH)	PRIORITY 3 (MODERATE)	PRIORITY 4 (MINOR)
INCIDENT RESPONSE TIME FROM TICKET CREATION TO OWNERSHIP	30 MINUTES	4 HOURS	8 HOURS	5 BUSINESS DAYS

# **R- Glossary**

Term	Description
RPA	Robotics Process Automation
AA	Automation Anywhere
SIT	System Integration Testing
UAT	User Acceptance Testing

# **S- Bot Operation Information**

### **Bots Mapped by this process:**

### **Provisioning Requirements:**

#### **Service Accounts:**

Service Account Name	Permissions/Scope of Account	Status
svc_xxx_Xxx	Read/Write	COMPLETE
		COMPLETE
		COMPLETE

CyberArk Safe and Credentials:

are new safe(s) required?

Safe Name	Status
	COMPLETE

### **CyberArk Credentials:**

Safe	Identifier	Туре	is it Managed? (Rotation)	Which bot(s) use it	Status
					COMPLETE
					COMPLETE
					COMPLETE

Software:

Does the bot need additional software installed on the bot runner:



If yes, supply details in the table below:

Name	Type?? (MSI/EXE)	Owner/Location
eg sql workbench	NA	NA

# **T - Design Queries**

Query	Assignee	Start Date	End Date	Status	Comments/Response Received
Business SLA	BA/application IT Team	08 Jul 2022	09 Aug 2022	Resolv ed	n/a
	(Colin McKenzie)				

Process Criticality	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	Medium
Business/Technical Exception Email ID or DL	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Pending	DL will be requested
User management of VOM & Echelon Applications (Admin POC)	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	Verint – CS Provisioning Echelon – AD integrated
Password Expiry Frequency	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	AD Account
How the Business will share the Credentials (UserIDPassword)	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	Business will not share credentials. Need to confirm engagement action to request credentials as required.
POC for Test Data	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	POC : Sohail Ashraf  As per discussions, the need for 'test' data for Feasibility and Unit Test will be baked into the Framework.
Business Owner	BA/application IT Team (Colin McKenzie)	08 Jul 2022	09 Aug 2022	Resolv ed	Nicola Wyness

# U - Sign Offs

Stage	Signer(s)	Date	Additional Notes
Technical Design Details			
Sign Off			
Build Sign Off			
Bot unit testing Sign Off			
Code Review Sign Off			
SIT Sign Off			
Testing - NFT			
Testing - FT			
PPE Sign Off			
Pre- implementation Sign Off			
Hypercare Sign Off			
Production Sign Off			