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Process Definition

Document

N1\_Test Capture

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# INTRODUCTION



## Purpose

The Process Definition Document outlines the business process chosen for automation. The document describes the sequence of actions performed as part of the business process, the conditions and rules of the process prior to automation (**AS IS**) as well as the new sequence of actions that the process will follow as a result of preparation for automation (**TO BE**).

**The PDD is a communication document between:**

* The RPA Business Analyst and the SME/Process Owner. The goal is to ensure that the RPA Business Analyst has the correct understanding of the process and has represented it accurately.
* The RPA Business Analyst and the Development team (represented by the Solution Architect and RPA Development Lead). The goal is to ensure that the process is documented appropriately and to a sufficient level of detail so that the Solution Architect can then create the solution based on the PDD content.

## Objectives

The business objectives and benefits expected by the Business Process Owner after automation of the selected business process are:

* Reduce processing time per item by 80%.
* Better Monitoring of the overall activity by using the logs provided by the robots.

## Key Contacts

Add here any stakeholders that need to be informed or to approve changes to the process:

|  |  |  |  |
| --- | --- | --- | --- |
| Role | Name | Contact Details (email, phone number) | Notes |
|  |  |  |  |
| Supervising Accountant  Senior Accountant | Craig Slezak  Bridget Conover | (518) 436-2868  [Craig.slezak@thruway.ny.gov](mailto:Craig.slezak@thruway.ny.gov)  (518) 471-4368  Bridget.conover@thruway.ny.gov | Informed/Approver  Informed Only |

## Minimum Pre-requisites for the Automation

1. Filled in Process Definition Document
2. Test Data to support development
3. User access and user accounts creations (licenses, permissions, restrictions to create accounts for robots)
4. Credentials (user ID and password) required to logon to machines and applications

# AS IS Process description

In this section the Business Analyst will document the process. This section will serve as the starting point for the re-engineering and automation effort.



## Process Overview

Section contains general information about the process before automation.

|  |  |
| --- | --- |
| Item | Description/Answer |
| Process Full Name | N1\_Test Capture |
| Process Area | Daily Traffic Count and Revenue |
| Department | Toll Audit |
| Short Description (operation, activity, outcome) | To automate the exporting of the N1 Report to excel format. This will be utilized to audit the day to day reporting for each class to quickly identify any large changes or discrepancies. In addition, this will help ensure that any issues are addressed in a timely manner to keep any potential revenue loss to a minimum. |
| Role(s) required in applications to perform the process | Toll Audit |
| Process schedule and frequency | Daily at 8:00AM EST for previous day |
| Number of times the process is ran by selected frequency | Once per day per station |
| Process execution time | 1 min. 38 sec. |
| Process Restrictions | Generally, there are no process restrictions. Occasionally there could be a connection issue to the plaza that could impact running this report. |
| Peak Period (s) | There are no peak periods that would impact the running of these reports. |
| Peak Volume Approximate increase |  |
| Number of persons performing the process | 1 |
| Expected Volume increase during next periods |  |
| Percentage Un-handled exceptions |  |
| Input data description | PDF Report for each station |
| Output Data description | Excel Spreadsheet with thresholds to show any large changes to prior day, week and/or year. |

\*Add more rows to the table to include relevant data for the automation process. No fields should be left empty. Use “n/a” for the items that don`t apply to the selected business process.

## Applications Used

The table includes a comprehensive list of all the applications that are used as part of the process to be automated to perform the given actions in the flow.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Application Name | Version | Application Language | Thin/Think Client | Environment/ Access method | Comments |
| Report Viewer | [*This is important for the RPA Developers as:*  *It is not uncommon for development environments to have lower versions compared to the production one;*  *The developer will know (or will know they have to investigate) if they can re-use a component that exists for a previous version or if they need to develop a new one*] | Application Language  [*This is important as different application languages can also mean different settings (e.g. dot versus comma as decimal separator). If the developer is aware of the language then they will know what are the challenges that come with that.*] |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

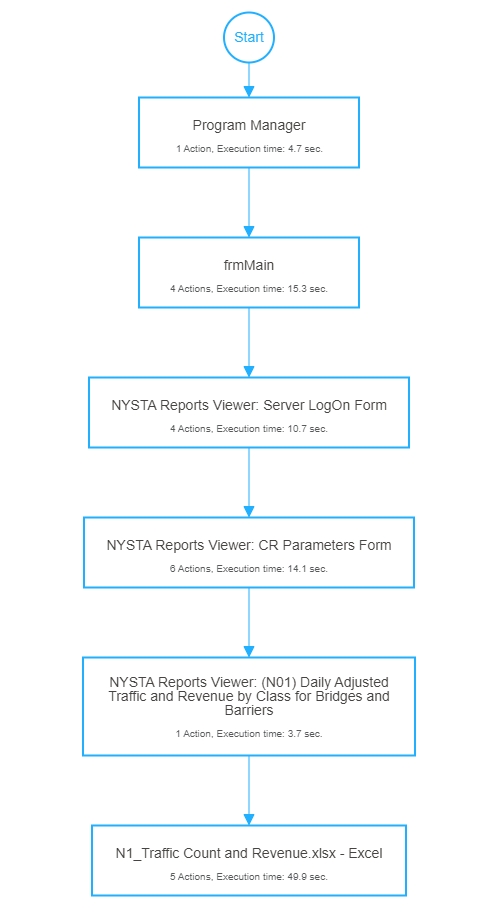
\*Add more rows to the table to include the complete list of applications.

## AS IS Process Map

Currently, there is no process implemented for this.

### High Level Process Map

This section is useful for the Business Analyst in presentations and discussions with management to underline areas of weakness, inefficiency or to demonstrate which actions could be in scope for automation.



### Detailed Level Process Map

This section describes the process at key-stroke level and is an essential part for the communication with the developers.

## Process Statistics

**High Level statistics**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Processes | Windows | Actions | Mouse clicks | Keys pressed | Text entries | Hotkeys used | Time |
| 3 | 6 | 21 | 18 | 14 | 3 | 0 | 1 min. 38 sec. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Detailed statistics**

|  |  |  |  |
| --- | --- | --- | --- |
| Window name | Mouse clicks | Text entries | Key pressed |
| Program Manager | 1 | 0 | 0 |
| frmMain | 4 | 0 | 0 |
| NYSTA Reports Viewer: Server LogOn Form | 1 | 3 | 14 |
| NYSTA Reports Viewer: CR Parameters Form | 6 | 0 | 0 |
| NYSTA Reports Viewer: (N01) Daily Adjusted Traffic and Revenue by Class for Bridges and Barriers | 1 | 0 | 0 |
| N1\_Traffic Count and Revenue.xlsx - Excel | 5 | 0 | 0 |
|  |  |  |  |
|  |  |  |  |

## Detailed As Is Process Actions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| #Action | Input | Description | Details (Screen/Video Recording Index) | Exceptions Handling | Possible Actions |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |
| --- | --- |
| 1. Program Manager | |
|  | **Est. time: 4.7 sec.** |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 4.7 sec. |
| image | Action: Double Click on icon to open Report Viewer application |

|  |  |
| --- | --- |
| 1. frmMain | |
|  | **Est. time: 15.3 sec.** |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 8.3 sec. |
| image | Action: Click |

|  |  |
| --- | --- |
|  |  |
| Click on 'New DB Exh'meous Tucketed Trdﬁc New DB Tol Tol Coledor Detai Tol Tol Tol Trdﬁc Densty New DB Violaion inages Violation hages Wn10' | Est. time: 3.6 sec. |
| image | Action: Click on Toll Statistics Daily New DB |

|  |  |
| --- | --- |
|  |  |
| Click on 'Select a Report Name' | Est. time: 1.10 sec. |
| image | Action: Click |

|  |  |
| --- | --- |
|  |  |
| Double Click on 'Select a Report Name' | Est. time: 1.5 sec. |
| image | Action: Double Click (N01) Daily Adjusted Traffic and Revenue by Class for Bridges and Barriers |

|  |  |
| --- | --- |
| 1. NYSTA Reports Viewer: Server LogOn Form | |
|  | **Est. time: 10.7 sec.** |

|  |  |
| --- | --- |
|  |  |
| Type '[CAPSLOCK]CONOVERB2' | Est. time: 2.1 sec. |
| image | Action: Keyboard Input – Enter Username |

|  |  |
| --- | --- |
|  |  |
| Press 'Tab' | Est. time: 2.9 sec. |
| image | Action: Special Key |

|  |  |
| --- | --- |
|  |  |
| Type 'steveisajerk' | Est. time: 1.0 sec. |
| image | Action: Keyboard Input – Enter Password |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 4.6 sec. |
| image | Action: Click OK |

|  |  |
| --- | --- |
| 1. NYSTA Reports Viewer: CR Parameters Form | |
|  | **Est. time: 14.1 sec.** |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 5.1 sec. |
| image | Action: Click the down arrow in “Value” field. The arrow drops down to open a calendar view. |

|  |  |
| --- | --- |
|  |  |
| Click on 'August 2020 Sun Mon Tue Wed Thu Fri Sat 26' | Est. time: 2.1 sec. |
| image | Action: Click on the date you want to retrieve data for. This typically should be the previous day. |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 1.7 sec. |
| image | Action: Click Next |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 1.8 sec. |
| image | Action: Click down arrow under “Value” field. This will give you the station options. |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 1.5 sec. |
| image | Action: Click on the station you want to retrieve data for. |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 1.9 sec. |
| image | Action: Click Finish |

|  |  |
| --- | --- |
| 1. NYSTA Reports Viewer: (N01) Daily Adjusted Traffic and Revenue by Class for Bridges and Barriers | |
|  | **Est. time: 3.7 sec.** |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 3.7 sec. |
| image | Action: No action required. This report generates automatically, typically instantly.  Note: This data never changes. Once the report is uploaded into the program, these figures will stay the same. Once exported to excel, there will most likely not be a time where the day would have to be re-run. |

|  |  |
| --- | --- |
| 1. N1\_Traffic Count and Revenue.xlsx - Excel | |
|  | **Est. time: 49.9 sec.** |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 43.9 sec. |
| image | This is the excel format we would like the data exported to. The month in the header should reflect the month you are pulling data for. The first tab shows the data for traffic count. Please use “Total Traffic” column from the N1 Report.  **Note:** Every report does not include all classes. If a class has “0” traffic, it is omitted from the list on the report. We need to decide whether the N1 report needs to include all classes each day regardless of count or if the bots will know to update the class as “0” in the excel format if the class isn’t available on the report. All classes are listed accordingly on the sample excel format created. |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 0.7 sec. |
| image | Action: Click |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 2.5 sec. |
| image | Action: Click |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 2.2 sec. |
| image | This is the excel format we would like the data exported to. The month in the header should reflect the month you are pulling data for. The second tab shows the data for revenue. Please use “Total Revenue” column from the N1 Report.  **Note:** Every report does not include all classes. If a class has “0” traffic, it is omitted from the list on the report. We need to decide whether the N1 report needs to include all classes each day regardless of count or if the bots will know to update the class as “0” in the excel format if the class isn’t available on the report. All classes are listed accordingly on the sample excel format created. |

|  |  |
| --- | --- |
|  |  |
|  | Est. time: 0.6 sec. |
| image | We would like to set thresholds to alert us if there is a large changes/variances in comparison to other data.  Listed below are the comparisons we would like to see:   1. Compare each day to previous week. Example: Monday to previous Monday. 2. Each day to previous year day. First Saturday in August 2020 should be compared to first Saturday in August 2019. Example: 8/1/2020 (Saturday) should NOT be compared to 8/1/2019 (Thursday) but rather 8/3/2019 (Saturday).   Listed below are the thresholds we would like to set:   1. If the count increases or decreases by 250. 2. If the count increases or decreases by 5%. 3. If the revenue increases or decreases by $500.00. 4. If the revenue increases or decreases by 5%.   If the data falls in any of these thresholds, we would like some type of e-mail notification indicating date, station, class and which threshold it met. This email can be sent to [craig.slezak@thruway.ny.gov](mailto:craig.slezak@thruway.ny.gov) and [bridget.conover@thruway.ny.gov](mailto:bridget.conover@thruway.ny.gov) for the time being. Would like the option to edit the distribution list at any point in the future. |

## Input Data Description

The following table should contain details regarding the inputs that every action of the process takes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| #Action | Sample | Input Type | Location | Are inputs Natively Digital\*? | Are the Inputs Structured\*? |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

*\** ***Native Digital****: This is data that was originally created digitally e.g. excel, database or application reports etc. The non-native digital inputs are usually scanned images.*

***\* Structured Data****: has a predictable format and exists in fixed fields (e.g. an excel cell or a field in a form) and is easily detectable via search algorithms.*

# TO BE Process description

In this section the proposed improvements to the process, actions to the process will be outlined as well as the actions proposed for automation and the type of robot required. **This will be cross-checked by the Solution Architect.**

## Detailed TO BE Process Map

A detailed process map of the process as it will look like post-automation will be outlined here.  
  
*Highlight Bot interventions/ To-Be automated actions with different legend/ icon (purple).  
Mention below if process improvements were performed on the To-Be design and provide details.*

|  |  |
| --- | --- |
| Legend | Description |
|  | Action number in the process. Referred to in details or Exceptions and Errors table. |
|  | This process action is proposed for automation. |
|  | This process action remains manual (to be performed by a human agent). |

## Parallel Initiatives

The table below will capture the proposed Business, Process or Application changes to be made in the near future that would impact the process at hand (if any).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Initiative Name | Process Action(s) where it is identified | Impact on current Automation Request | Expected Completion Date | Contact Person |
|  |  |  |  |  |
|  |  |  |  |  |

## In Scope For RPA

The actions in scope for RPA should be listed below:

## Out Of Scope for RPA

The actions **out of scope** for RPA should be listed in the table below together with the reasoning.

|  |  |  |  |
| --- | --- | --- | --- |
| Activity/Action\* | Reason for out of scope | Impact on the TO BE | Possible measures to be taken into consideration for future automation |
| *e.g. Action 3* | ***e.g.*** *Input is handwritten* | ***e.g.*** *after action 2 an e-mail is sent to the user to manually perform action 3* | ***e.g.*** *collect the input in pdf form and use electronic signature* |

\*Add more rows to the table to reflect the complete documentation provided to support the RPA process.

## Exceptions Handling

The Business Process Owner and Business Analysts are expected to document below all the business exceptions identified in the automation process. Exceptions are of 2 types and both need to be addressed:

**Known exceptions** = previously encountered. A scenario is defined with clear actions and workarounds for each case.

**Unknown** = New situation that was not encountered before. It cannot be predicted and in case it happens it needs to be flagged and communicated to an authorized person for evaluation.

### Known Business Exceptions

Details regarding how the robot should handle the exceptions.

|  |  |  |  |
| --- | --- | --- | --- |
| Exception Name | Action | Parameters | Action to be taken |
| *e.g. Employee ID <> 6 characters* | ***e.g****. Action 1* | ***e.g.*** *Employee ID* | ***e.g.*** *send an e-mail to* [*exceptions@company.com*](mailto:exceptions@company.com) *with the text: “Employee ID <> 6 characters”*  *Go to the next transaction* |

### 3.5.2 Unknown Business Exceptions

An umbrella rule that includes a notification needs to be designed for all other exceptions that could happen and cannot be anticipated.

***e.g.:*** *for all other cases which do not follow the rules defined an e-mail should be sent to:* [*exceptions@company.com*](mailto:exceptions@company.com) *with a screen shot and robot should proceed to next transaction.*

## Applications Errors & Exceptions Handling

A comprehensive list of all errors, warnings or notifications should be consolidated here together with the action to be taken for each by the Robot. There are 2 types of exceptions/errors:

**Known** = Previously encountered and action plan or workaround available for it (e.g. SAP unresponsive during peak times)

**Unknown** = these are exceptions and errors that cannot be anticipated but for which the robot needs to have a rule so that the RPA solution is sustainable.

### Known Applications Errors and Exceptions

Details regarding how the robot should handle the exceptions.

|  |  |  |  |
| --- | --- | --- | --- |
| Error/Exception Name | Action | Parameters | Action to be taken |
| *e.g. Application Crash* | ***e.g****. Any action* | ***e.g.*** *Error message* | ***e.g.*** *recover and retry 3 times* |
|  |  |  |  |

### Unknown Applications Errors and Exceptions

An umbrella rule that includes a notification needs to be designed for all other exceptions that could happen and cannot be anticipated.

*e.g. robot should attempt to access the application 3 times then it should terminate thread.*

## Reporting

In this section all the reporting requirements of the business should be detailed so that when the RPA solution is moved to production the administrators can track the performance of the solution.

|  |  |  |  |
| --- | --- | --- | --- |
| Report Type | Update frequency | Details | Monitoring Tool to visualize the data |
| *e.g. Process logs* | ***e.g.*** *Daily* | ***e.g.*** *How many times was this process run since the beginning of the month and what was the average run duration* | ***e.g.*** *Kibana* |
| *e.g Process logs* | ***e.g.*** *Monthly* | ***e.g.*** *How many robots worked on this process per each month?* | ***e.g.*** *Csv file posted daily on share drive* |
| *e.g Transaction logs* | ***e.g.*** *Daily* | ***e.g.*** *How many transactions were run by this process since the beginning of the month and what was the average transaction duration?* | ***e.g.*** *Kibana* |
| *e.g Error logs* | ***e.g.*** *Daily* | ***e.g.*** *Average number of errors by type per day* | ***e.g.*** *Kibana* |
| *e.g Error logs* | ***e.g.*** *Daily* | ***e.g.*** *All errors per month grouped by type* | ***e.g.*** *Csv file posted daily on share drive* |

\* For complex reporting requirements, include them into a separate document and attach it to the present documentation

# Other

## Additional sources of process documentation

If there is additional material created to support the process automation please mention it here, along with the supported documentation provided.

|  |  |  |
| --- | --- | --- |
| Additional Process Documentation | | |
| Video Recording of the process (Optional) | Acme-System1-Process-WI5-Manual-Walkthrough | Insert any relevant comments |
| Business Rules Library (Optional) | Insert link to Business rules library | Insert any relevant comments |
| Other documentation (Optional) | Insert link to any other relevant process documentation (L4, L5 process description, fields mapping files etc.) | Insert any relevant comments |
| Standard Operating Procedure(s) (Optional) |  | Insert any relevant comments |
| High Level Process Map (Optional) |  | Insert any relevant comments |
| Detailed level process map (Optional) |  | Insert any relevant comments |
| Work Instructions (Optional) |  | Insert any relevant comments |
| Input Files (Optional) |  | Insert any relevant comments |
| Output Files (Optional) |  | Insert any relevant comments |

\*Add more rows to the table to reflect the complete documentation provided to support the RPA process.

