Prevent, Mitigate, and Recover (PMR) Insight

Collective Knowledge System (PICK)

Test plan

Version 0.3

April 16, 2020

**Document Control**

**Approval**

The Guidance Team and the customer shall approve this document.

**Document Change Control**

|  |  |
| --- | --- |
| Initial Release: | 0.1 |
| Current Release: | 0.8 |
| Indicator of Last Page in Document: | $ |
| Date of Last Review: | April 16, 2020 |
| Date of Next Review: | April 20, 2020 |
| Target Date for Next Update: | April 20, 2020 |

**Distribution List**

This following list of people shall receive a copy of this document every time a new version of this document becomes available:

Guidance Team Members:

Dr. Gates

Dr. Salamah

Dr. Roach

ElsaTai Ramirez

Jake Lasley

Customer:

Dr. Oscar Perez

Vincent Fonseca

Herandy Denisse Vazquez

Baltazar Santaella

Florencia Larsen

Erick De Nava

Software Team Members:

Eduardo Herrera – Systems Architect

Micheal Sansone – Lead Programmer

Jazmin Paz – Designer

Leslie Gomez – V&V

Jorge Flores – System Analyst

**Change Summary**

The following table details changes made between versions of this document

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Modifier | Description |
| 0.1 | 4/7/2020 | Leslie Gomez | Initialized Document |
| 0.2 | 4/12/2020 | Leslie Gomez | Added Sections 1.1-1.4 |
| 0.3 | 4/14/2020 | Leslie Gomez | Added Sections 1.5,1.6 |
| 0.4 | 4/16/2020 | Jazmin Paz | Added section 3 |
| 0.5 | 4/16/2020 | Jazmin Paz | Added section 4.3 |
| 0.6 | 4/16/2020 | Leslie Gomez | Added sections 4.2.4.4 |
| 0.7 | 4/16/1010 | Jorge Flores | Contributed to section 3 |
| 0.8 | 4/16/2020 | Eduardo Herrera | Added Sections 2, 4.1, 6 |
|  |  |  |  |

Note: The template presented in this document was taken from:

Donaldson, S., and S. Siegel, *Successful Software Development*. Upper Saddle River, NJ: Prentice Hall, 2001, pp. 321-323.

Note: The template presented in this document was taken from: Donaldson, S., and S. Siegel, *Successful Software Development*. Upper Saddle River, NJ: Prentice Hall, 2001, pp. 321-323 and modified by Humberto Mendoza and Steve Roach.

Supplementary information is from:

Pfleeger, S. *Software Engineering, Theory and Practice*. Upper Saddle River, NJ: Prentice Hall, 1998, p. 365.

**Table of Contents**

[**DOCUMENT CONTROL II**](#_heading=h.30j0zll)

[**Approval ii**](#_heading=h.1ci93xb)

[**Document Change Control ii**](#_heading=h.3whwml4)

[**Distribution List ii**](#_heading=h.2bn6wsx)

[**Change Summary ii**](#_heading=h.qsh70q)

[**1.**](#_heading=h.3dy6vkm) **INTRODUCTION 1**

[**1.1.**](#_heading=h.1t3h5sf) **Purpose 1**

[**1.2.**](#_heading=h.4d34og8) **Scope 1**

[**1.3.**](#_heading=h.2s8eyo1) **System Overview 1**

[**1.4.**](#_heading=h.17dp8vu) **Suspension and Exit Criteria 1**

[**1.5.**](#_heading=h.3rdcrjn) **Document Overview 1**

[**1.6.**](#_heading=h.26in1rg) **References 1**

[**2.**](#_heading=h.35nkun2) **TEST ITEMS AND FEATURES 2**

[**3.**](#_heading=h.1ksv4uv) **TESTING APPROACH 3**

[**4.**](#_heading=h.2jxsxqh) **TEST XX 4**

[**4.1.**](#_heading=h.z337ya) **Test <<test id>> 4**

[**5.**](#_heading=h.3as4poj) **USER INTERFACE TESTING 5**

[**6.**](#_heading=h.1y810tw) **TEST SCHEDULE 6**

[**7.**](#_heading=h.4i7ojhp) **OTHER SECTIONS 7**

[**8.**](#_heading=h.1pxezwc) **APPENDIX 8**

# Introduction

The overview of the project and test plan is explained in this section, with more in-depth details explained in sections two through six. This section comprises the following subsections: Purpose, Scope, System Overview, Suspension and Exit Criteria, Document Overview and References.

## Purpose

The purpose of the Test Plan document is to provide detailed information on the testing approach and schedule conducted for the Prevent, Mitigate, and Recover (PMR) Insight Collective Knowledge System (PICK). The purpose of this document is to verify the functionality of the PICK system according to the requirements specified by the client, using a system test plan that describes the system from the customer’s point of view.

## Scope

The project software version encompassed by the test plan will be PICK version 0.0, which represents the latest released version.

## System Overview

<<Describe the system to be exercised by the testing approach specified in the plan. This overview serves to identify aspects of the system operation that will be the focus of the plan’s testing approach. This should align with the systems overview of other documents in the project.>>

## Suspension and Exit Criteria

The suspension and exit criteria implemented for the test plan will be applied as follows:

* + Suspension criteria:
    - All test cases will be executed
  + Exit criteria:
    - Critical tests must pass – 100% passing rate
    - Non-critical tests – at least 90% must pass

## Document Overview

The remainder of the Test Plan document is comprised of the following sections:

Section 2 – Test Items and Features, describes the test items and the features to be tested.

Section 3 – Testing Approach, describes the approach to be used to test the system.

This description includes specifying the types of tests to be performed.

Section 4 – Test, this area provides general notes concerning the test procedure.

Section 5 – User Interface Testing, this section focuses on the interaction between the user and the system.

Section 6 – Test Schedule, specifies the schedule for testing activities.

Section 7 – Other Sections, other sections that may appear in a test plan.

Section 8 – Appendix, might provide explicit directions for analysis of output.

## References

[1] Dr. Roach Tai et al, Prevent, Mitigate, and Recover (PMR) Insight Collective Knowledge System (PICK)

Software Requirements Specification, version 1.7, 2020.

# Test Items and Features

The main components that are going to be tested are the Intake component, Vector DB, and the UI component. The main feature that is going to be tested in the Intake component is the processing of Log Files. Log Files should be processed from the system in a way that they are, cleansed, validated, and converted to Log Entries. Each of the main services in the component should have testing items that they are responsible for doing. For example, the cleansing service should be tested that the unwanted characters are being removed from the Log Files that are being processed. Another service that is going to be tested is the validation service; testing that the service is validating the correct fields in the data being processed, furthermore, is the way of validating the correct one. The main two features of the Vector DB component are the pushing and pulling of data; is the data being synchronized in the two parties (the Analyst and the Lead). Finally, there should be testing done on the different UI components, for example, testing the addition and elimination of Nodes in a Graph View and Log Entries in a Table View.

# Testing Approach

<<Describe the approach to be used to the test the system. This description includes specifying the types of tests to be performed, e.g., tests designed to exercise system functions one by one; tests designed to exercise sequences of functions that approximate operational use of the system; tests designed to stress the system to its design and requirements limits. The description lists the specific tests to be performed, but does not give the test steps. For each of these tests, give it a name and specify its objective. Label the criticality of the test cases. >>

|  |  |  |
| --- | --- | --- |
| **TEST SUITE <GUI>** | | |
| **Description of Test Suite** | **The functionality of the PICK graphical user interface shall be tested in order to ensure the analyst will be able to adequately use the PICK system.** | |
| **Test Case Identifier** | **Objective** | **Criticality** |
| **GUI01** | **Create new project interface testing** | **Medium** |
| **GUI02** | **Generate action reports testing** | **High** |
| **GUI03** | **Functionality of buttons testing** | **High** |

|  |  |  |
| --- | --- | --- |
| **TEST SUITE <Transcription>** | | |
| **Description of Test Suite** | **The functionality of the transcription tool used within PICK shall be tested in order to ensure correct transcription is being done across various file formats.** | |
| **Test Case Identifier** | **Objective** | **Criticality** |
| **T01** | **Audio file transcription testing** | **High** |
| **T02** | **Video file transcription testing** | **High** |

|  |  |  |
| --- | --- | --- |
| **TEST SUITE <Graph>** | | |
| **Description of Test Suite** | **The graph view shall be tested to ensure proper functionality.** | |
| **Test Case Identifier** | **Objective** | **Criticality** |
| **GPH01** | **Create new node testing** | **High** |
| **GPH02** | **Delete node testing** | **High** |
| **GPH03** | **Correct node information testing** | **High** |
| **GPH04** | **Node relationship testing** | **High** |

|  |  |  |
| --- | --- | --- |
| **TEST SUITE <Log entries>** | | |
| **Description of Test Suite** | **Log entries using Splunk shall be tested to ensure proper functionality.** | |
| **Test Case Identifier** | **Objective** | **Criticality** |
| **L01** | **Proper ingestion of information testing** | **High** |

|  |  |  |
| --- | --- | --- |
| **TEST SUITE <Optical Character Reader>** | | |
| **Description of Test Suite** | **The OCR will be tested in order to observe the correctness and consistency of its performance.** | |
| **Test Case Identifier** | **Objective** | **Criticality** |
| **OCR01** | **The OCR reads a jpeg file for characters and produces satisfactory results.** | **High** |
| **OCR02** | **The OCR reads a png file and is again observed for accurate results.** | **High** |

# Testing

The purpose of this section is to:

* document test input, specific test procedures, and outcomes.
* establish test methods,
* explain the nature and extent of each test

## 4.1 Test I01

**Objective:** Conversion of Log Files to Log Entries.

**Notes:** The test would see if Log Entries are being extracted correctly from a given Log File. This process will involve the usage of Splunk, which accepts Log Files and returns a set Log Entries.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No.: I01 | | | | Current Status: Pending | | |
| Test title: Extraction of Log Entries. | | | | | | |
| Testing approach: Given a predefined Log Files, we are going to ingest it to the system. From there the test is going to check if the correct Log Entries were extracted. | | | | | | |
| STEP  1 | OPERATOR ACTION  Initialize the Intake Service; it contains the ETL service we are going to use. | PURPOSE  Initialization of the Intake process. | | | EXPECTED RESULTS  The ETL service in the Intake service should not be null. | COMMENTS  No comments. |
| 2 | Pass in the absolute path of directory that contains the predefined Log File. This Log File contains data that gives us a deterministic number of Log Entries. | Intake the Log File we are testing. | | | The Intake service should ingest the Log File in the directory; whose path was given. | No Comments. |
| 3 | Wait for the Log File to be processed by the ETL service (upload and retrieved by Splunk). | Process the Log File and extraction of Log Entries. | | | The Intake service waits for Splunk to process the data. | No Comments. |
| 4 | Comparison of the returned set of Log Entries with the correct set that Log Entries. | Making sure the correct number of Log Entries are being extracted. | | | The set we know is correct and the one returned should match. | No Comment. |
| Concluding Remarks: | | | | | | |
| Testing Team:  Eduardo H, Michael S, Leslie G, Jazmin P, Jorge F. | | | Date Completed: | | | |

## 4.2 Test GUI01

**Objective:** Checking for correct Validation process

**Notes:** The test will check that the timestamp given from the user matches the ones given from the files selected from the user.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No.: GUI01 | | | | Current Status: Pending | | |
| Test title: Validating entries from timestamp | | | | | | |
| Testing approach: Given timestamp from the user, we will test that the log files chosen to ingest shall be in the correct timestamp. | | | | | | |
| STEP    1 | OPERATOR ACTION  Begin testing with the PICK system on the starting page.  Operator clicks on the “New Project” button. | PURPOSE  Initial condition to force the PICK system to start a new project when the user presses the new project. | | | EXPECTED RESULTS  A new window will appear.  A text box to choose the source path shall be displayed.  A timestamp configuration shall display. | COMMENTS |
| 2 | Operator chooses source files to create the project. | Upload of the source files to the system. | | | Display of the machines directory to select desired folders/files to. |  |
| 3 | Operator enters description in the description box. | The purpose is to verify that the desired text is saved into the new project. | | | Description input box will hold the “Description” to the new project created. |  |
| 4 | Operator chooses timestamps for that do not match the timestamps from the files chosen | The purpose of this is to verify that the files selected for intake match the correct timestamp given to the system. | | | Timestamp input box will hold the chosen timestamps from the calendar/time. |  |
| 5 | Operator clicks on the “create” button. | This will create the ingestion portion of the files selected. | | | The system will let the operator know that the chosen file’s timestamps do not match the timestamps given.  Alert message shall display that the timestamps do not match. |  |
| Concluding Remarks: | | | | | | |
| Testing Team:  Eduardo Herrera, Michael Sansone, Leslie Gomez, Jazmin Paz, Jorge Flores | | | Date Completed: | | | |

## 4.3 Test C01

**Objective:** Checking for invalid log files being ingested

**Notes:** The test will check to see if any unsanitized or invalid log files are being ingested.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No.: C01 | | | | Current Status: Pending | | |
| Test title: Cleansing Log Files | | | | | | |
| Testing approach: Given a predefined set of log files including invalid files, the system shall cleanse the files and ingest valid files into the system. The test shall check if any invalid files are being ingested into the system anyway despite the cleansing process. | | | | | | |
| STEP  1 | OPERATOR ACTION  Operator will create new project | PURPOSE  Initial condition | | | EXPECTED RESULTS  Ability to select the folder(s) of log entries from the file system. | COMMENTS  N/A. |
| STEP  2 | OPERATOR ACTION  Operator will select the folder(s) where the log entries are | PURPOSE  To specify what files will be ingested | | | EXPECTED RESULTS  Specified files should be selected | COMMENTS  N/A. |
| STEP  3 | OPERATOR ACTION  Operator will create project by clicking button and cleanse data | PURPOSE  To begin cleansing process | | | EXPECTED RESULTS  Cleansing process should begin | COMMENTS  N/A. |
| Concluding Remarks: | | | | | | |
| Testing Team:  Eduardo H, Michael S, Leslie G, Jazmin P, Jorge F. | | | Date Completed: | | | |

## 4.4 Test C02

**Objective:** Testing the correlation of the log entries.

**Notes:** Ensures that log entries are correlated correctly to its specified vector.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test No.: C02 | | | | Current Status: Pending | | |
| Test title: Correlation of log entries. | | | | | | |
| Testing approach: Given a predefined vector, log entries will be correlated to it. | | | | | | |
| STEP  1 | OPERATOR ACTION  Operator will select log entries. | PURPOSE  The purpose is to select Log entries. | | | EXPECTED RESULTS  All desired log entries from the operator will be selected. | COMMENTS |
| 2 | Operator will click the “correlate” button. | The purpose for this is to ensure that the log entries selected are correlated to predefined vector. | | | Log entries shall be correlated to its predefined vector. |  |
| Concluding Remarks: | | | | | | |
| Testing Team:  Eduardo H., Michael S., Leslie G., Jazmin Paz., Jorge F. | | | Date Completed: | | | |

# User Interface Testing

<<This section focuses on the interaction between the user and the system. For testing the user interface, consider the following traits:

* Consistent terminology, shortcut keys, menu selections, and presentation
* Correct language, spelling, and grammar.
* Flexibility in navigation between windows and interface elements.
* Error handling that will inform user of critical operations.
* Follows standards and guidelines such as placement of scroll bars, windows, and menu items.

This section could be integrated into Section 4.

>>

# Test Schedule

Specification for the schedule used for testing activities.

|  |  |  |
| --- | --- | --- |
| **Task and date** | **People** | **Description** |
| I01 | Eddie, Leslie | Conversion of Log Files to Log Entries. |
|  | Michael, Jazmin | Testing Cleansing process. |
|  | Jorge, Eddie | Testing identification of log entries in Image files. |
|  | Eddie, Michael | Testing the identification of log entries in Audio files. |
|  | Jazmin, Leslie | Testing the correct validation of log entries. |
|  | Michael, Jorge | Testing the removal and addition of nodes to the Graph UI element. |
|  | Jorge, Leslie | Testing the correlation functionality of Log Entries. |

# Other Sections

none.

# Appendix

<< possibly more readable to put the expected output here and refer to it in the previous sections. Might also provide explicit directions for analysis of output, if it’s easier to read as an appendix or if analysis is post execution. >>

$