Client Implementation

Test Plan

Date: 01/23/2018

**Revision and Signoff Sheet**

**Document History**

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| --- | --- | --- | --- |
| Version | Date | Author | Description of Change |
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**Approvers List**

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| Business Product Owner |  |  |  |
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**Reference Documents**

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| --- | --- | --- |
| **Version** | **Date** | **Document Name** |
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Table of Contents

[1. INTRODUCTION 5](#_Toc504552448)

[1.1. Purpose 5](#_Toc504552449)

[1.2. Project Overview 5](#_Toc504552450)

[1.3. Project Scope 5](#_Toc504552451)

[1.3.1. In Scope 5](#_Toc504552452)

[1.3.2. Out of Scope 5](#_Toc504552453)

[1.4. Audience 5](#_Toc504552454)

[2. TEST STRATEGY 6](#_Toc504552455)

[2.1. Test Objectives 6](#_Toc504552456)

[2.2. Test Assumptions 6](#_Toc504552457)

[2.3. Test Risks 7](#_Toc504552458)

[2.4. Test Principles 7](#_Toc504552459)

[2.5. Test Approach 7](#_Toc504552460)

[2.6. Data Approach 8](#_Toc504552461)

[2.7. Test Effort Estimate 8](#_Toc504552462)

[2.8. Scope and Levels of Testing 8](#_Toc504552463)

[2.8.1. Smoke Testing 8](#_Toc504552464)

[2.8.2. Functional Testing 8](#_Toc504552465)

[TEST ENTRY ACCEPTANCE CRITERIA 8](#_Toc504552466)

[2.8.3. Integration Testing 9](#_Toc504552467)

[2.8.4. Regression Testing 9](#_Toc504552468)

[2.8.5. Automation Testing 9](#_Toc504552469)

[2.8.6. Milestones 9](#_Toc504552470)

[MILESTONE LIST 9](#_Toc504552471)

[2.8.7. Deliverables 10](#_Toc504552472)

[TEST DELIVERABLES 10](#_Toc504552473)

[2.8.8. User Acceptance Testing (UAT) 11](#_Toc504552474)

[TEST DELIVERABLES 11](#_Toc504552475)

[3. EXECUTION STRATEGY 11](#_Toc504552476)

[3.1. Entry and Exit Criteria 11](#_Toc504552477)

[3.2. Test Cycles 12](#_Toc504552478)

[3.3. Validation and Defect Management 12](#_Toc504552479)

[3.4. Test Metrics 13](#_Toc504552480)

[3.5. Defect tracking & Reporting 13](#_Toc504552481)

[4. TEST MANAGEMENT PROCESS 14](#_Toc504552482)

[4.1. Test Management Tool 14](#_Toc504552483)

[4.2. Test Design Process 15](#_Toc504552484)

[4.3. Test Execution Process 16](#_Toc504552485)

[4.4. Test Risks and Mitigation Factors 16](#_Toc504552486)

[4.5. Role Expectations 18](#_Toc504552487)

[4.6. Project Management 18](#_Toc504552488)

[4.6.1. Test Planning 18](#_Toc504552489)

[4.6.2. Test Team 18](#_Toc504552490)

[4.6.3. Test Lead 18](#_Toc504552491)

[4.6.4. Development Team 19](#_Toc504552492)

[5. TEST ENVIRONMENT 19](#_Toc504552493)

# INTRODUCTION

This Test Plan has been created to communicate the test approach to team members. It includes the objectives, scope, schedule, risks and approach. This document will clearly identify what the test deliverables will be and what is deemed in and out of scope.

## Purpose

This test plan describes the testing approach and overall framework that will drive the testing of the Client Implementation. The document introduces:

* Test Strategy: rules the test will be based on, including the start/end dates, objectives, assumptions; description of the process to set up a valid test: entry/exit criteria, creation of test cases, specific tasks to perform, scheduling, data strategy.
* Execution Strategy: describes how the test will be performed and the process to identify and report defects, and to fix and implement fixes.
* Test Management: process to handle the logistics of the test and all the events that come up during execution: communications, escalation procedures, risk and mitigation, team roster.

## Project Overview

Client Implementation project involves onboarding a new contract (MA/BPCI) on basis of requested benchmark contract. In 2017 we will promote the scripts to higher Environments to onboard a new contract. This process requires the Release to make that new contract Live in the Production and requires minimum of 2-3 months of time which includes Dev, QA and UAT. But now from 2018 onwards we are using the Admin Tool to onboard the new contracts which doesn’t require to go through all the release process.

## Project Scope

### In Scope

Client Implementation project involves onboarding a new contract(MA/BPCI) on basis of requested benchmark contract through Admin Tool.

### Out of Scope

Contract specific requirements will be out of scope.

## Audience

* Project team members perform tasks specified in this document, and provide input and recommendations on this document.
* Project Manager Plans for the testing activities in the overall project schedule, reviews the document, tracks the performance of the test according to the task herein specified, approves the document and is accountable for the results.
* The stakeholders’ representatives and participants (individuals as identified by the PMO Leads) may take part in the UAT test to ensure the business is aligned with the results of the test.
* Technical Team ensures that the test plan and deliverables are in line with the design, provides the environment for testing and follows the procedures related to the fixes of defects.
* Business Analyst s will provide their inputs on functional changes and enhancements.

# TEST STRATEGY

## Test Objectives

The objective of the test is to verify that the functionality of New Client onboarding functions according to the requirements/ benchmark contract.

The test will execute and verify the test cases, identify, fix and retest all high and medium severity defects per the entrance criteria, prioritize lower severity defects for future fixing via CR.

The final product of the test is twofold:

* A production-ready software.
* A set of stable test cases that can be reused for Functional and Regression test execution.

## Test Assumptions

**Key Assumptions**

* Production like data (Ex: Facilities/patients loaded by data Exchange team) required and be available in the system prior to start of Functional Testing.
* In testing phase, timeline will be extended if the defect rate is high.

**General**

* The project will provide test planning, test design and test execution support.
* Test team will manage the testing effort with close coordination with Project PM/Business Analyst/Dev.
* Project team has the knowledge and experience necessary, or has received adequate training in the system, the project and the testing processes.
* The Test Team will be provided with access to Test environment on-site and via VPN connectivity.
* The Test Team assumes all necessary inputs required during Test design and execution will be supported by Development/Business Analyst appropriately.
* Test environment and preparation activities will be owned by Dev Team.
* Test case design activities will be performed by QA Group.
* Project Manager/Business Analyst will review and sign-off all Test cases prepared by Test Team prior to start of Test execution.
* Smoke Testing will be performed once the down merge script is executed in test environment.
* Performance testing will not be performed.
* There is no environment downtime during test due to outages or defect fixes.
* The defects will be logged and tracked through ALM and JIRA.
* Dev team will provide Defect fix plans based on the Defect meetings.
* Any defect fixes planned will be shared with Test Team prior to applying the fixes to the Test environment.
* Project Manager/QA Manager/Business Analyst will review and sign-off all test deliverables.

**Functional Testing**

* During Functional testing, testing team will use preloaded data which is available on the system at the time of execution.
* The Test Team will perform Functional testing only on New Contract which is onboarded.

**Integration Testing**

* Integration testing will be performed on the following systems: nH Coordinate

**UAT**

* UAT test execution will be not be performed by end users for the new client onboarding as Admin tool is already certified by UAT testers to create both MA and BPCI new clients.

## Test Risks

The following risks have been identified and the appropriate action identified to mitigate their impact on the project. The impact (or severity) of the risk is based on how the project would be affected if the risk was triggered. The trigger is what milestone or event would cause the risk to become an issue to be dealt with.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Risk** | **Impact** | **Trigger** | **Mitigation Plan** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |

## Test Principles

* Testing will be focused on meeting the business objectives, cost efficiency, and quality.
* There will be common, consistent procedures for all teams supporting testing activities.
* Testing processes will be well defined, yet flexible, with the ability to change as needed.
* Testing activities will build upon previous stages to avoid redundancy or duplication of effort.
* Testing environment and data will emulate a production environment as much as possible.
* Testing will be a repeatable, quantifiable, and measurable activity.
* Testing will be divided into with clearly defined objectives and goals.
* There will be entrance and exit criteria.

## Test Approach

The project is using an agile approach and follow the Kanban Board Delivery.

## Data Approach

In functional testing, New client will contain pre-loaded or refreshed test data and which is used for testing activities.(Facilities and patients for the new client will be loaded by Data exchange team)

## Test Effort Estimate

By assuming if there are no critical issues found during the testing then all the testing effort is estimated in 2 weeks with one QA resource.

## Scope and Levels of Testing

### Smoke Testing

**PURPOSE**: The purpose of this test is to make sure the down merging of script for onboarding a new client in test Environment with no major defects before testing can start.

**SCOPE**: Test every high level function of the application.

**TESTERS**: Anjali Devi Nalabothu

**METHOD**: The smoke testing is carried out in the application with critical test cases.

**TIMING**: At the beginning of down merging of script for onboarding a new client in test Environment.

### Functional Testing

**PURPOSE:**  Functional testing will be performed to check the functionality of the new client onboarding.

**Scope:** MA Contracts: Create a patient, Update patient, Add Authorization (SNF, IRF and LTAC), Update AUTH details, Patient Transition, Groupers, Diagnosis, Admission and Discharge Live safe score, OPT report, different types of Notes, SNF Notes , Alerts and Attachments.

BPCI contracts: Create a patient, Update patient, Adding DRG for BPCI patients, Perform Risk Screening, LACE Score, Patient Transition, Groupers, Diagnosis, Admission and Discharge Live safe score, OPT report, different types of Notes, SNF Notes , Alerts and Attachments.

**TESTERS**: Anjali Devi Nalabothu

**METHOD**: The test will be performed according to Test Cases, which are stored in ALM.

**TIMING**: After Smoke test is completed.

#### TEST ENTRY ACCEPTANCE CRITERIA

1. Requirement is to know which is benchmark contract for new client.
2. Down merge script in Dev is ran Successfully, unit tested with pass status and results shared to testing team to avoid duplicate defects.
3. Test cases approved and signed-off prior to start of Test execution.
4. Test environment with application installed, configured and ready to use state.

### Integration Testing

**PURPOSE:**  Integration testing will be performed to check the integration to other systems.

**Scope:** New client contract integration with nH Coordinate and after Data (Patients and Facilities) loaded by data Exchange Team.

**TESTERS**: Anjali Devi Nalabothu

**METHOD**: The test will be performed according to Test Cases, which are stored in ALM.

**TIMING**: The testing effort is estimated in 6-7 days with one QA resource with data Exchange team support

### Regression Testing

**PURPOSE:**  Regression testing will be performed to verify existing functionality still works properly after defect fixes and/or new development have been deployed.

**Scope:** Any functionality that could be affected by the defect fixes and/or new development.

**TESTERS**: Anjali Devi Nalabothu.

**METHOD**: The test will be performed according to Test Cases, which are stored in ALM.

**TIMING**: After defect fixes and/or new development have been deployed and smoke testing has occurred.

### Automation Testing

Automated unit tests are not part of the development process.

Automated functional tests are not planned at this time.

### Milestones

#### MILESTONE LIST

The milestone list is tentative and may change due to below reasons

1. Any issues in the System/test environment readiness
2. Any change in scope/addition in scope
3. Any other **dependency that impacts** efforts and timelines

Based on the testing scope, we can estimate how much time it takes and establish the time lines as you can see in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Name** | **Start** | **Finish** | **Effort** | **Comments** |
| Down merge the script to QA test environment |  |  |  |  |
| Smoke Testing |  |  |  |  |
| Data base validation - MPD |  |  |  |  |
| Data base validation - CM |  |  |  |  |
| Functional testing  Includes Data verification, Integration & End-to-end |  |  |  |  |
| Defect Remediation |  |  |  |  |
| Regression testing |  |  |  |  |
| Dev will Provide down merge scripts to DBA to run in Higher Env (UAT, staging, Hotfix and Training) |  |  |  |  |
| Smoke test in Higher env once scripts ran |  |  |  |  |
| In Staging test after data exchange loads the data |  |  |  |  |
| Release to Production |  |  |  |  |

### Deliverables

#### TEST DELIVERABLES

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Deliverable Name** | **Author** | **Reviewer** |
| 1. | Test Plan | Anjali Devi Nalabothu | Project Manager/ Business Analyst/QA Director |
| 2. | Functional Test Cases | Anjali Devi Nalabothu | Project Manager/Business Analyst Sign off |
| 3. | Traceability Matrix | Anjali Devi Nalabothu | QA Director/Project Manager |
| 4. | Logging Defects in ALM | Anjali Devi Nalabothu | Tester |
| 5. | Daily QA status report | Anjali Devi Nalabothu | Tester/Test Lead/ QA Director |
| 6. | Test Case Completion report | Anjali Devi Nalabothu | QA Director/Project Manager Sign off |

### User Acceptance Testing (UAT)

**PURPOSE**: This test focuses on validating the business logic. It allows the end users to complete one final review of the application prior to deployment.

**TESTERS**: The UAT is performed by the end users.

**METHOD**: Since the business users are the most indicated to provide input around business needs and how the system adapts to them, it may happen that the users do some validation not contained in the scripts. Test team write the UAT test cases based on the inputs from End user (L1,L2 and L3 users) and Business Analyst ’s.

**TIMING**: After all other levels of testing (Exploratory and Functional) are done. Only after this test is completed the product can be released to production.

#### TEST DELIVERABLES

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Deliverable Name** | **Author** | **Reviewer** |
| 1. | UAT Test Cases | Tester | Project Manager/Business Analyst Sign off |

# EXECUTION STRATEGY

## Entry and Exit Criteria

* The entry criteria refers to the desirable conditions in order to start test execution; only the migration of the code and fixes need to be assessed at the end of each Sprint.
* Entry criteria to start the execution phase of the test: the activities listed in the Functional Testing section of the schedule are 100% completed.
* Entry criteria to start each Sprint: the activities listed in the Test Execution section of the schedule are 100% completed at each Sprint.
* The exit criteria are the desirable conditions that need to be met in order proceed with the implementation to Production.
* Entry and exit criteria are flexible benchmarks. If they are not met, the test team will assess the risk, identify mitigation actions and provide a recommendation. All this is input to the **Will Snyder** for a final “go-no go” decision.



|  |  |  |  |
| --- | --- | --- | --- |
| **Exit Criteria** | **Test Team** | **Technical Team** | **Notes** |
| 100% Test Cases executed |  |  |  |
| 95% pass rate of Test Cases |  |  |  |
| No open Critical, Very High and High severity defects |  |  |  |
| 95% of Medium severity defects have been closed |  |  |  |
| All remaining defects are either cancelled or documented as Change Requests for a future release |  |  |  |
| All expected and actual results are captured and documented with the test case |  |  |  |
| All test metrics collected based on reports from ALM |  |  |  |
| All defects logged in ALM and Jira |  |  |  |
| Test Case Completion document completed and signed off |  |  |  |

## Test Cycles

* + The project is using an agile approach and follow the Kanban Board Delivery.
  + The objective of Smoke Test is to identify any blocking, critical defects, and most of the high defects. It is expected to use some work-around in order to get to all the cases.
  + The objective of the Functional testing is to identify remaining high and medium defects, correct gaps in the cases and obtain performance results.

## Validation and Defect Management

* It is expected that the testers execute all the test cases in each of the Sprints described above. However, it is recognized that the testers could also do additional testing if they identify a possible gap in the test cases. If a gap is identified, the test case(s) and traceability matrix will be updated and then a defect logged for the test case(s).
* The defects will be tracked through ALM/JIRA. The technical team will gather information on a daily basis from Jira, and request additional details from the **Anjali Devi Nalabothu**. The technical team will work on fixes.
* It is the responsibility of the tester to open the defects, link them to the corresponding test case, assign an initial severity and status, retest and close the defect; it is the responsibility of the **Anjali Devi Nalabothu** to review the severity of the defects and facilitate with the technical team the fix and its implementation, communicate with testers when the test can continue or should be halted, request the tester to retest, and modify status as the defect progresses through the Sprint; it is the responsibility of the technical team to review ALM/Jira on a daily basis, ask for details/reproduction if necessary, fix the defect, communicate to the Tester the fix is done, implement the solution per the Tester request.

Defects found during the Testing will be categorized according to the ALM/Jira and the categories are:

|  |  |
| --- | --- |
| **Severity** | **Impact** |
| 1 (Critical) | * This defect is critical enough to crash the system, cause file corruption, or cause potential data loss. * It causes an abnormal return to the operating system (crash or a system failure message appears). * It causes the application to hang and requires re-booting the system. * Critical functionality is not available. |
| 2 (Very High) | * It causes a lack of vital program functionality without a workaround. |
| 3 (High) | * It causes a lack of vital program functionality with a workaround. |
| 4 (Medium) | * This defect will degrade the quality of the System. However, there is an intelligent workaround for achieving the desired functionality - for example through another screen. * This defect prevents other areas of the product from being tested. However, other areas can be independently tested. |
| 5 (Low) | * There is an insufficient or unclear error message, which has minimum impact on product use. * Cosmetic issue, incorrect verbiage. * Usability problems. |

## Test Metrics

Test metrics to measure the progress and level of success of the testing will be developed and shared with the **Will Snyder** for approval. Below is an example of some of the metrics:

|  |  |  |
| --- | --- | --- |
| **Report** | **Description** | **Frequency** |
| Test preparation & Execution Status | To report on % Complete, %Deferred, % Pass, % Fail, %Blocked  Defects severity wise Status – Open, closed, any other Status | Weekly / Daily (optional) |
| Daily execution status | To report on Pass, Fail, Total defects, highlight Showstopper/ Critical defects | Daily |
| Project Weekly Status report | Project driven reporting (As requested by PM) | Weekly |

## Defect tracking & Reporting

Following flowchart depicts Defect Tracking Process:

**Approved?**

**Start**

**Tester:**

**Report defects**

**Dev Lead:**

**Assign defects**

**Developer:**

**Fixes defects**

**Tester:**

**Retests the defect**

**No**

**Stop**

**Close defect**

**Yes**

**<Test Lead:**

**Validate defects>**

# TEST MANAGEMENT PROCESS

## Test Management Tool

ALM is the tool used for Test Management. All testing artifacts such as Test cases, test results are updated in the ALM.

* Project specific folder structure will be created in ALM to manage the status of Client Implementation project.
* Each resource in the Testing team will be provided with Read/Write access to add/modify Test cases in ALM.
* During the Test Design phase, all test cases are written directly into ALM. Any change to the test case will be directly updated in the ALM.
* Each Tester will directly access their respective assigned test cases and update the status of each executed step in ALM directly.
* Any defect encountered will be logged in ALM linking to the particular Test case/test step.
* During Defect fix testing, defects are re-assigned back to the tester to verify the defect fix. The tester verifies the defect fix and updates the status directly in ALM.
* Various reports can be generated from ALM to provide status of Test execution. For example, Status report of Test cases executed, Passed, Failed, Deferred, Blocked, No. of open defects, Severity wise defects, etc.

## Test Design Process

* The tester will understand each requirement and prepare corresponding test case to ensure all requirements are covered.
* During the preparation phase, tester will use the requirements, use case and functional specification to write step by step test cases.
* Each Test case will be mapped to Use cases/ Requirements as part of Traceability matrix.
* Each of the Test cases will be reviewed by the Project Manage/Business Analyst and the review defects are captured and shared with the Test team. The testers will rework on the review defects and finally obtain approval and sign-off.
* Testers will maintain a clarification Tracker sheet and it will be shared periodically with the Requirements team and accordingly the test case will be updated. The clarifications may sometimes lead to Change Requests or not in scope or detailing implicit requirements.
* Sign-off for the test cases will be by email by Project Manager/Business Analyst.
* Any subsequent changes to the test cases, if any, will be directly updated in <testing tool>.

## Test Execution Process

* Once all Test cases are approved and the test environment is ready for testing, tester will perform smoke testing of the application to ensure the application is stable for testing.
* Testers ensure necessary access to the testing environment, <testing tool> for updating test status and logging defects. If there are any issues, they will be escalated to the Test Lead and in turn to the Project Manager.
* If any showstopper is found during smoke testing, it will be escalated to the respective developer for fixes.
* Each tester performs step by step execution and updates the executions status. The tester enters Pass or Fail Status for each of the step directly in <testing tool>.
* Tester will prepare a daily report with execution details.
* If any failures, defect will be logged as per severity guidelines in <testing tool> detailing steps to simulate along with screenshots, if appropriate.
* Daily Test execution status as well as Defect status will be reported to all stakeholders.
* Testing team will participate in defect triage meetings in order to ensure all test cases are executed with either pass/fail status.
* If there are any defects that are not part of steps but could be outside the test steps, such defects need to be captured in <testing tool> and mapped to the test case or the specific step that issue was encountered.
* This process is repeated until all test cases are executed fully with Pass/Fail status.
* During the subsequent Sprint, any defects fixed applied will be tested and results will be updated in <testing tool> during the Sprint.
* As per Process, final sign-off or project completion process will be followed.

## Test Risks and Mitigation Factors

| Risk | Prob. | Impact | Mitigation Plan |
| --- | --- | --- | --- |
| **SCHEDULE**  Testing schedule is tight. If the start of the testing is delayed due to design tasks, the test cannot be extended beyond the UAT scheduled start date. | High | High | * The testing team can control the preparation tasks (in advance) and the early communication with involved parties. * Some buffer has been added to the schedule for contingencies, although not as much as best practices advise. |
| **RESOURCES**  Not enough resources, resources on boarding too late (process takes around ## days). | Medium | High | Holidays and vacation have been estimated and built into the schedule; deviations from the estimation could derive in delays in the testing. |
| **DEFECTS**  Defects are found at a late stage of the Sprint or at a late Sprint; defects discovered late are most likely be due to unclear specifications and are time consuming to resolve. | Medium | High | Defect management plan is in place to ensure prompt communication and fixing of issues. |
| **SCOPE**  Scope completely defined | Medium | Medium | Scope is well defined, but the changes are in the functionality and not yet finalized or keep on changing. |
| Natural disasters | Low | Medium | Teams and responsibilities have been spread to two different geographic areas. In a catastrophic event in one of the areas, there will resources in the other areas needed to continue the testing activities. |
| Non-availability of Independent Test environment and accessibility | Medium | High | Due to non availability of the environment, the schedule gets impacted and will lead to delayed start of Test execution. |
| Delayed Testing Due To new Issues | Medium | High | During testing, there is a good chance that some “new” defects may be identified and may become an issue that will take time to resolve.  There are defects that can be logged during testing because of unclear document specification. These defects can lead to an issue that will need time to be resolved.  If these issues become showstoppers, it will greatly impact the overall project schedule.  If new defects are discovered, the defect management and issue management procedures are in place to immediately provide a resolution. |

* As per Process, final sign-off or project completion process will be followed.

## Role Expectations

The following list defines in general terms the expectations related to the roles directly involved in the management, planning or execution of the test for the Client Implementation project.

| Roles | Name | Contact Info |
| --- | --- | --- |
| Business Product Owner | Chentelle Lane | clane@navihealth.com |
| Technical Product Owner | Kent Rowland | kent.rowland@navihealth.com |
| Project Manager | Will Snyder | Will.Snyder@navihealth.com |
| Business Analyst | Harish Natarajan | Harish.Natarajan@navihealth.com |
| Development Lead | Manoj Narkhede | Manoj.Narkhede@navihealth.com |
| QA Manager | Tylena Horton | Tylena.Horton@navihealth.com |
| Test Lead | Anjali Devi Nalabothu | Anjali.nalabothu@navihealth.com |

### Project Management

* Project Manager: reviews the content of the Test Plan, Test Strategy and Test Estimates and signs off on it.

### Test Planning

* Ensure entrance criteria are used as input before starting the execution.
* Develop test plan and the guidelines to create test conditions, test cases, expected results and execution test cases.
* Provide guidelines on how to manage defects.
* Attend status meetings in person or conference call.
* Communicate to the test team any changes that need to be made to the test deliverables or application and when they will be completed.

### Test Team

* Develop test conditions, test cases, expected results, and execution cases.
* Perform execution and validation.
* Identify, document and prioritize defects according to the guidance provided by the Test lead.
* Re-test after software modifications have been made according to the schedule.
* Prepare testing metrics and provide regular status.

### Test Lead

* Acknowledge the completion of a section within a Sprint.
* Give the OK to start next level of testing.
* Facilitate defect communications between testing team and technical/development team.

### Development Team

* Review testing deliverables (test plan, cases, scripts, expected results, etc.) and provide timely feedback.
* Assist in the validation of results (if requested).
* Support the development and testing processes being used to support the project.
* Certify correct components have been delivered to the test environment at the points specified in the testing schedule.
* Keep project team and leadership informed of potential software delivery date slips based on the current schedule.
* Define processes/tools to facilitate the initial and ongoing migration of components.
* Conduct first line investigation into execution discrepancies and assist test executors in creation of accurate defects.
* Implement fixes to defects according to schedule.

# TEST ENVIRONMENT

|  |  |
| --- | --- |
| **Environment Name** | **Testing Type** |
| QA Environment | Functional |
| Staging | Integration /End to End |
| UAT | Smoke Test |
| Hotfix | Smoke Test |
| Training | Smoke Test |

A windows environment with Google Chrome should be available to each tester.