**Approvals:**

|  |  |  |
| --- | --- | --- |
| Approver Name | Signature | Date |
|  |  |  |

**Change History:**

|  |  |  |  |
| --- | --- | --- | --- |
| Rev. | Date | SW Module | Description |
|  |  |  |  |
|  |  |  |  |

Introduction

In this document we present our software testing plan. We describe the testing plan for each individual major component of the Liferay form then we present their integration validation procedure

Scope

This test plan describes the unit, integration and system tests that will be conducted on the Liferay web application.

The purpose of this test is to test the functionality, accessibility, feasibility and the performance of the selected software module and the architecture as a whole.



## Quality Objective

The objectives of testing the software are:

* Ensure the Software Under Test conforms to functional and non-functional requirements
* Ensure the Software Under Test meets the requirement specifications
* Bugs and issues are identified and fixed before going live

## Roles and Responsibilities

* QA Analyst- The verify the test reports and update the regulatory accordingly.
* QA Engineer – The objective of this role is to take all the necessary updates of the newly released feature for the software and perform the test on the entire application, along with the new features and check the integrity of the software. Upon and detection of bugs or fault behavior, immediate feedback is provided to the respective developers’ team.
* Developers – The objective of the developers is to make the necessary updates of the codes and releases new features into the development environment and keep a track of those updates.

Testing Methodology

The software testing methodology followed is the Agile methodology. Incremental testing is used in agile development methods and hence, every release of the project is tested thoroughly. This ensures that any bugs in the system are fixed before the next release.

Testing Approach

The Test-driven development for the Hyris software follows the below approach-

1. Add a Test Case to the test suite to verify the new functionality which is yet to be developed or currently under development.
2. Run all the tests and the new test case added must fail since the functionality is not added yet
3. The developer updates some code to implement the feature/functionality
4. Run the test suite again. This time, the new test case should pass since the functionally has been coded
5. If some failures occur or bugs are detected, the developers are notified automatically for the bug fix.

## Test Levels

The Testing Levels of Hyris software is primarily categorized into the following levels:

Unit Testing

Unit testing aims to verify each part of the software by isolating it and then perform tests to demonstrate that each component is correct in terms of fulfilling requirements and the desired functionality. This test includes the individual testing of different components such as the individual APIs within the Liferay form.

Integration Testing

This testing aims to test different parts of the system in combination to assess if they work correctly together. By testing the units in groups, any faults in the way they interact together can be identified. All the modules of the Liferay software are tested individually as a stand-alone to check the correctness of the functionality.

System Testing

The next level of testing is system testing. Here, all the components of the software in an integrated form are tested as a whole to ensure that the overall product meets the requirements specified.

Acceptance Testing

In this level of the software testing process the aim is to evaluate whether the system complies with the end-user requirements and if it is ready for deployment. Here real form submissions are performed to check and verify whether all the functionalities including storing if the data are performing as per the software requirements.

## Bug Triage

In this process, each bug is prioritized based on its severity, frequency, risk, etc., and is reported directly to the responsible development team. Simultaneously, the bugs are also listed in the task schedular as “To Be Fixed Bugs’ and are assigned to the respective developers for the fix.

Test Completeness

Criteria that are taken into consideration to check Test Completeness of Liferay software are-

* 100% test coverage
* All Manual & Automated Test cases executed
* All open bugs are fixed or will be fixed in the next release.
* Each test case must pass with a threshold of 0%

Test Deliverables

The test deliverables for the entire test lifecycle includes:

* Test Plan
* Test Cases
* Bug Report
* Test Traceability Matrix
* Test Reports

Resource & Environment Needs

Testing Tools

The tools or applications used for the testing process –

* Robot Framework
* Jenkins
* Selenium

Test Environment

All the tests are performed on an online open-source automation server and are very robust for all kinds of AT.

* Jenkins – version 2.7.5
* Robot Framework – version 4.0.3
* Selenium – version 4.8.0.0

Terms and Acronyms

| **TERM/ACRONYM** | **DEFINITION** |
| --- | --- |
| API | Application Program Interface |
| AT | Automated Testing |
| MT | Manual Testing |

Annexes