**TESTING**

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or Weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

**6.1 Testing Levels**

All major activities of various testing level are described below:

**6.1.1 Unit Testing**

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system +configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

**6.1.2 Integration Testing**

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

**6.1.3 Functional Testing**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

**6.1.4 System Testing**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

**6.1.5 White Box Testing**White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

**6.1.6 Black Box Testing**

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

Outlined below are the main aspects that are tested in the Project.

* Application Characteristics – Information about the application is provided to help the testing team in the testing work.
* Stability – Focusing on the application being stable on the device.
* Application Launch – Once an application is loaded it must start (launch) and stop correctly in relation to the device and other applications on the device.
* User Interface
* Functionality – Documented features are implemented in the application and work as expected.
* Connectivity – the application must demonstrate its ability to communicate over a network correctly. It must be capable of dealing with both network problems and server-side problems.
* Personal Information Management (PI) - The application accessing user information needs to be able to do it in an appropriate manner and not to destroy the information.
* Security.

**6.1.7 Acceptance Testing**

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

**6.1.8 ValidationTesting**

At the end of integration testing, software is completely assembled as a package, interfacing errors have been uncovered and corrected, and a final series of test –validation testing may begin. Validation testing succeeds by the customer. A test plan outline the classes of test to be conducted and a test produce defines specific test cases that use to be demonstrating conformity with requirements as mentioned in the software requirement specification.

**Test strategy and approach**

Field testing will be performed manually and functional tests will be written in detail.

**Test objectives:**

* All field entries must work properly.
* Pages must be activated from the identified link.
* The entry screen, messages and responses must not be delayed.

**Features to be tested**

* Verify that the entries are of the correct format
* No duplicate entries should be allowedAll links should take the user to the correct

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.