

# Attachment I

## Explore IRP Test and Acceptance Strategy

### 1 Introduction

#### 1.1 Purpose

This test plan defines the approach for testing the Michigan RP System. It is provided by Explore to document the scope, objectives and approach for sufficient testing of this product. By analyzing and defining key attributes, we can ensure that testing of business requirements throughout all phases will be completed in order to drive us toward a higher quality product.

#### 1.2 Approach

##### 1.2.1 Test Strategy

The Test Strategy defines the overall strategy, objectives, scope and the general direction for testing of the Michigan IRP application.

##### 1.2.1.1 Testing Objectives:

- The aim of a testing exercise is to ensure that the system delivered has the least number of errors and meets all the requirements specified in the RFP, BAFO, and other related project documents. It will identify any areas which have deviated from the expected results.
- Testing will consist of three phases, namely Integration testing, System testing (including the Stress and Performance testing) and User Acceptance testing. Integration testing will be conducted by the Explore development team. System, Stress and Performance testing will be performed by the Explore testers. User Acceptance testing will be led by the Michigan MDOS IRP team. In addition, an informal testing phase titled Release Verification Testing will be performed by the Michigan MDOS IRP team.
- All the exit criteria specified in the test plan will be met.

##### 1.2.1.2 Testing Scope (Features):

The scope of the testing is to validate the functionalities as required by Michigan.

The features that are in the scope of testing are as follows:

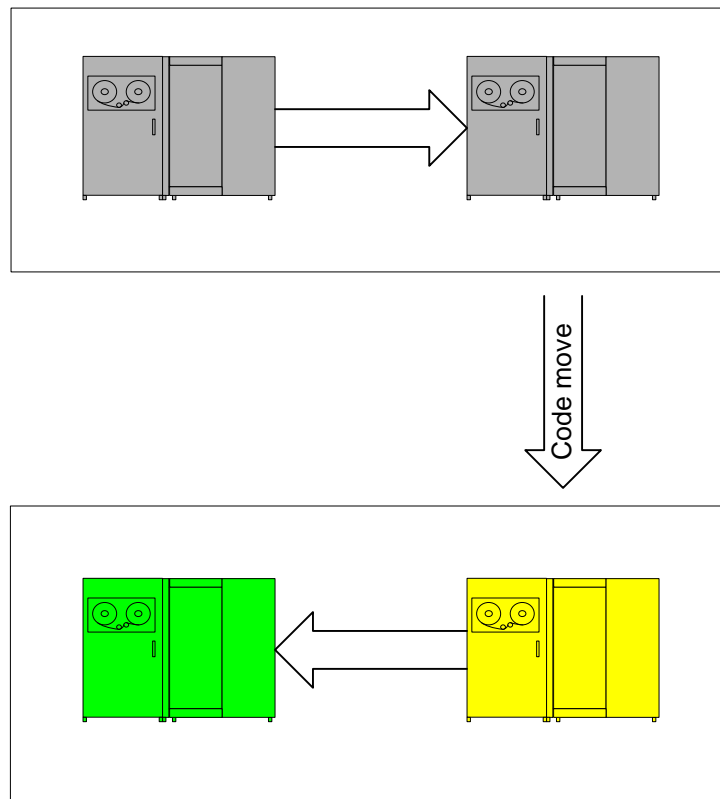
- IRP Registration for state users
- IRP Registration for carriers and licensing agents
- Financials
- Audits
- Inventory
- Role based security
- Interfaces
- PRISM/CVIEW/Validation

##### 1.2.2 Testing Logistics

### 1.2.2.1 Location of testing activities

System testing will primarily take place in Marshall, MN. Release Verification testing will be accessible to Michigan MDOS subject matter experts and technical experts after each milestone release. User acceptance testing will take place primarily in Lansing, MI with assistance provided by Explore staff from Marshall, MN.

### 1.2.2.2 Overview of testing environments



## 2 Test Definition and Management Strategy

### 2.1 Test Phases

The following testing phases will be followed for the MI IRP project:

- **Release Verification** – The purpose of this testing is for Michigan to validate development progress, and to help Michigan prepare for UAT testing phase preparation. It also helps MDOS staff to become familiar with the system before formal UAT testing starts. See section 3.2.4 for more information

- **Integration testing** – The purpose of integration testing is to verify that components that make up a function work together to provide the function desired. This type of testing is conducted throughout the development process by developers and analysts from Explore.
- **System test** - The purpose of the System test is to verify that the Explore project has reached the quality level necessary for starting system validation. It has to ensure that all the functionality defined in the requirements document have been tested and executed successfully as indicated in the Entry and Exit Criteria section. Explore is responsible for the system testing. As part of system testing, Explore will perform stress/performance testing on any areas that may be a concern because significant changes were made or they were redesigned to fit Michigan's needs.
- **User Acceptance test** – The purpose of the Acceptance test is to verify that the system works as per the user requirement and all the requirements are covered. Michigan MDOS is responsible for the User acceptance testing. Explore will provide test cases to get the MDOS team started, however, it is the responsibility of the Michigan MDOS team to enhance the test cases to cover additional scenarios that may be business process related.

### 3 System Test Phase Details

#### 3.1 Design Approach

Test cases will be developed based on the following approach:

- Functional requirements developed by the Business Analyst.
- Requirement traceability matrix created and utilized by Explore.
- Use cases used by Explore.
- System level test cases will be based on the integrated module level functionality.

#### 3.2 Test Management and Execution

##### 3.2.1 Test Data

- All test data will be set up by Explore with the assistance of the Michigan MDOS IRP Team as to staging of such data (if needed.) While the data will be pulled from Michigan data, if possible, it may be necessary for Michigan MDOS to supply staged data requirements for testing purposes. Other data that is not currently in production will be produced through the front end and database transactions.
- Data set up will be done through:
  - Microsoft Visual Studio .Net 2003 - For converting data to ASCII values.
  - DTS Import/Export - For data transfer to SQL Server from text files.
  - Query Analyzer - Inserting data to Stage database.
- Data will be cleared/restored on an as needed basis

##### 3.2.2 Test Environment

Testing will be performed on the Explore Michigan test environment in Marshall, MN.

##### 3.2.3 Roles and Responsibilities:

Explore is responsible for all activities in the system test phase.

### **3.2.4 Testing Schedule**

During development of iterations during the development phase of the project, some system testing will occur during each iteration. However, formal system testing will be performed immediately following completion of the development phase.

Explore will be releasing new versions the Dover Stage system after each development milestone. While system testing will not have been completed for each iteration, the release is being provided to Michigan as a way to provide feedback to Explore during the development process, as a way for Michigan to validate progress, and to help Michigan prepare for UAT testing phase preparation. We consider the testing done by Michigan after each iteration to be Release Verification Testing.

### **3.2.5 Testing Progress**

System testing progress will be reported in the weekly project status update when that phase is in progress.

## **3.3 Testing Dependencies**

### **3.3.1 Entry and Exit Criteria**

The following are the entry criteria for this stage:

- Explore's project manager has verified that the required functionality for the release has been completed and integration tested.
- No severity one defects remain from the integration testing phase

The following are the exit criteria for this stage:

- The system has had the system test scripts run with expected results.
- The Explore project manager is comfortable with the results of the tests.
- Explore believes that the system has been created to meet the business needs to the best of their knowledge

## **4 UAT Phase Details**

### **4.1 Design Approach**

Test cases will be developed based on the following approach:

- High level test cases provided by Explore.
- Documented configuration changes created by Explore and any specific requirements documents created during the project.
- Legacy System (i.e. may be helpful in referencing fee calculations)
- Michigan MDOS business processes.

### **4.2 Test Management and Execution**

#### **4.2.1 Test Data**

All test data required for UAT will be identified by Michigan MDOS with the assistance of Explore as to staging of such data. While the data will be pulled from Michigan data whenever possible it may be necessary to create staged data requirements for testing purposes. Other data that is not currently in production will be produced through the front end and database transactions.

#### **4.2.2 Test Environment**

Testing will be performed on the test environment located in Michigan's data center.

#### **4.2.3 Roles and Responsibilities:**

User acceptance preparation will be the joint responsibility of Explore and Michigan staff. Explore will provide a list of standard test cases. Michigan will add or enhance test cases to support Michigan specific processes.

Michigan MDOS staff will be responsible for conducting UAT testing and reporting defects that may be identified.

Explore will be responsible for correcting defects that are required to be fixed (see severity definitions) and for assisting Michigan.

#### **4.2.4 Testing Schedule**

The testing schedule will be defined in the project work plan.

#### **4.2.5 UAT Progress**

UAT testing progress will be reported in the weekly project status update while it is in progress.

### **4.3 Testing Dependencies**

#### **4.3.1 UAT Entry and Exit Criteria**

The following are the entry criteria for this stage:

- A complete and final build list is provided by Explore containing all defects included in the release.
- System test has verified all new requirements are implemented correctly.
- System testing has executed all of the shared regression test cases and defect test cases with at least 95% passing.
- No severity 1 or 2 defects remain from system test
- The UAT environment has been updated and the testing data refreshed.
- Verify the correct build release has been deployed to the UAT server.
- The UAT environment is stable and operational.
- Test plan and new test cases have been prepared and approved by the Michigan staff.

The following are the exit criteria for this stage:

- All defects included in the release have been reviewed and tested.
- All new requirements have been tested and considered for release notes.
- Test case coverage is at least 90%.
- All regression test cases have been executed since the last release update.
- No severity 1 or 2 defects remain from UAT unless approved by Michigan.

## **5 Non phased testing**

The following are the non-phased testing activities. The activities will be separately addressed in conjunction with other testing phases.

### 5.1 **Regression Testing**

Regression testing will consist of a core area of identified test scripts to reflect regression testing areas needed.

### 5.2 **Data validation of interface files**

Depending on the availability of live testing systems for each of the interfaces, testing of interfaces may need to be adjusted to fit the available capabilities.

## 6 **Assumptions**

The following are the assumptions:

- No additional change requests will be submitted.
- Scope of testing is defined and locked down.

## 7 **Testing Risks and Mitigation**

<b>Risk</b>	<b>Mitigation</b>
Delay in progress of key deliverables	Adjust the testing timeline or scope out the least priority test cases.
Change in scope	Adjust the testing timeline or scope out the least priority test cases.
Performance bottlenecks in the interface	Architecture/Design team to be available to resolve the issue.
Changes to functional design when the project is being tested will result in redesigning the test cases	Design review session conducted to facilitate the test team to redesign the test cases.
Unstable environment	Operations team to be available to resolve the issue with minimal impact to the schedule.
Non-availability of key resources for testing	Adjust the timeline or scope out the least priority test cases.

## 8 **Defect Reporting & Tracking**

Explore and Michigan MDOS teams will be using an Explore in-house defect tracking tool 'Tracker' to report and track the defects. The defects that have been identified will be reviewed daily by each respective team during their testing phases.

### 8.1 **Process**

- 1) The tester reports the defect as a Tracker log in Tracker (Status – Reported) and assigns the defect to an Explore Analyst (Current Owner – Explore Analyst).
- 2) Analyst assigns the defects to the developer for fixing (Status – Working on)
- 3) Developer fixes and sends back the defect to the person who reported the defect (Status – Retest)
- 4) The tester validates the fix and closes the defect if found fixed (Status – Fixed).
- 5) If the fix is not working, the tracker will be reassigned to the Analyst (Status – Reported but the description should include that the 'Retest failed').

#### 8.1.1 **Severity Levels**

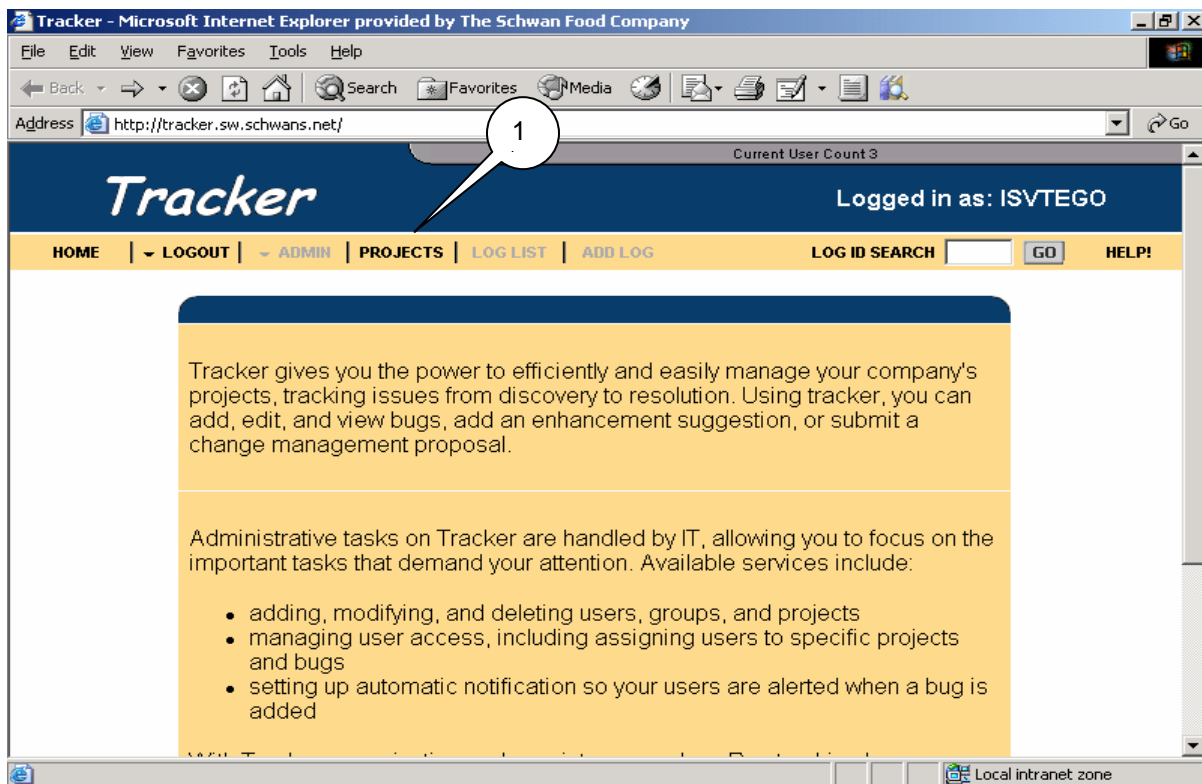
- **Severity 1 (High)**

- \* These are the show stoppers
  - 1) No work around exists
  - 2) Issue requires further investigation before an agreeable resolution is reached
  - 3) Testing of application ceases until resolved.
- **Severity 2 (Medium)**
  - 1) There is an acceptable work around that will not negatively impact this application or other groups/application so they can continue to test while the issue is resolved.
  - 2) Needs to be resolved before final round of testing for the current test phase.
    - Resolved does not necessarily mean fixed. It could be that this is agreed to become an ongoing issue or be addressed in the next test phase or code release period.
- **Severity 3 (Low)**
  - 1) These items are those that need to be evaluated by the Explore Product Manager in conjunction with MDOS to determine whether they are acceptable as is or if they need to be changed
  - 2) May require researching available options or providing time estimates before a decision can be reached
  - 3) These items do not hold up/impact current testing
  - 4) If a decision is reached to implement the changes, an agreement will need to be reached as to whether these changes would need to be completed and tested before the next phase of testing, before the final sign off and moving to production, or during the post implementation phase.
    - This will require additional UAT testing and sign off.
- **Severity 4**
  - 1) Will most likely not be fixed or retested as they have no real impact on the project overall – These items are considered ‘acceptable’ bugs and would move to production with known issue.
  - 2) These are really there for documentation purposes for use in future product enhancements.
  - 3) All questions should be logged to this severity

### **Tracking Defects**

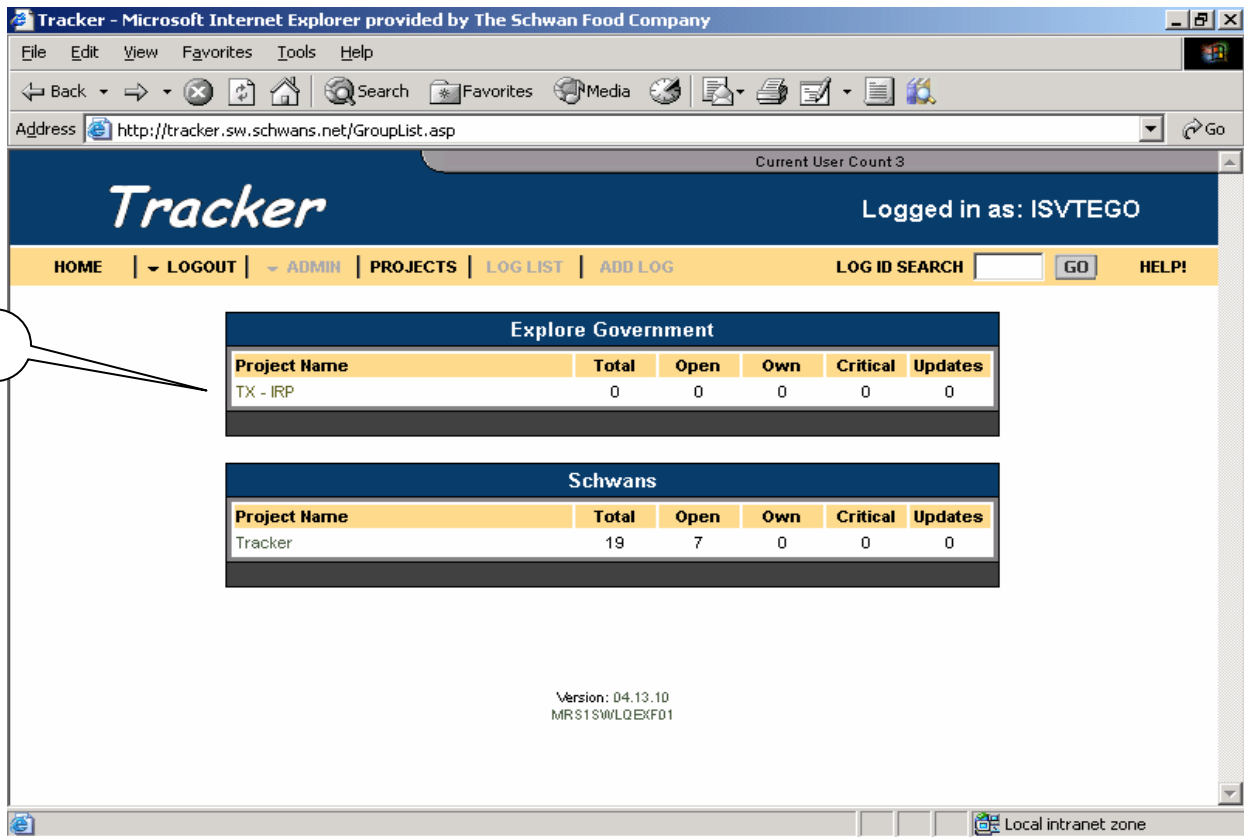
Explore and MDOS IRP team members will be using an Explore developed, web-based, Defect tracking tool ‘*Tracker*’ to report and track the defects. Defects reported and defect status will be reviewed with the Michigan IRP project team on a weekly basis.

All the users with access to the Explore *Tracker* Defect Reporting Tool are logged in automatically to the *Tracker* home page.



Upon selecting 'Projects' in the menu bar, the user is presented with their projects.





Click the project name to get into a specific project. The Log List page will be displayed with all the reported defects listed in a table.

