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TechFlow, Inc. Response to  
Request for Quotation (RFQ)  
4QTFHS150004  
Agile Delivery Services (ADS I)

# Test Analysis Report (TAR)

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## 1.0 Purpose and Overview

The purpose of this document is to familiarize the reader with the test results executed by TechFlow for the Food and Drug Administration (FDA) in support of the Drug and Risk Information (DARI) public information website. It details the analysis of the testing performed and documents the results.

Testing commenced on June 23, 2015. The Test Phase conclusion coincides with the end of the second sprint iteration on June 30, 2015. Tests were composed and executed based on the acceptance criteria identified in the user stories for both product increments.

- Product Increment 1: Basic Search (MVP)
- Product Increment 2: Search Enhancements

The TechFlow Software Quality Assurance (SQA) team executed 8 scenario based tests comprised of functional and end-to-end testing. The purpose of this testing was to confirm that the product implementation satisfies the DARI product acceptance criteria for completion.

## 2.0 Scope

The following section presents the verification points that were tested utilizing the latest versions of Google Chrome (PC & Mobile), Microsoft Internet Explorer, Mozilla Firefox. Our testing approach is an iterative and incremental Agile approach. Because we use an iterative approach we are able to achieve test results more efficiently as the testers become familiar with the test cases. This was very effective for the development of the DARI application because of the quick delivery. Scrum focus is on a flexible, holistic product development strategy where a product development team works as a unit to reach a common goal as opposed to a traditional, sequential approach.

### 2.1 Search Returns Label Information

- Verified that the user is able to input a drug's generic name into a text box and initiate a search on that particular drug.
  - Verified that the text box is dependent upon an exact name match or partial match.
  - Verified that the text box is not case sensitive.
- Verified that the user is able to execute a new search with existing search results displayed.
- Verified that the system displays FDA provided drug label information for the drug queried.
- Verified that the system displays the drug label with the following information when available:
  - Generic Name
  - Brand Name
  - Manufacturer name
  - Purpose
  - Indications and Usage
  - Adverse Reactions
  - Active Ingredients
  - Inactive Ingredients
  - Warnings
  - Stop Use
  - Do Not Use
  - Ask Doctor
  - Ask Doctor or Pharmacist
  - Dosage

## 2.2 Disclaimer

- Verified that the disclaimer is displayed at the bottom of every page.
- Verified that the disclaimer text is indicative of sites with similar functionality.
  - The prescription drug related information on this website is meant for basic informational purposes only. It is not intended to serve as medical advice, substitute for a doctor's appointment or to be used for diagnosing or treating a medical condition. Users of this website are advised to consult with their physician before making any decisions concerning their health.

## 2.3 FDA API Error Handling

- Verified that the system provides an alert message on the interface that indicates a search failure has occurred.
- Verified that the system provides a means to initiate a new search from the same interface after the message is displayed.

## 2.4 Docker Container

- Verify application code is deployed to Docker container

## 2.5 Search Returns Adverse Events

- Verified that the system displays FDA provided adverse event information for the drug queried.
- Verified that the system displays search results aggregated by drug and event:
  - Adverse Event
  - Occurrences

## 2.6 Search Returns Graphical Representation

- Verified that the system displays a pie chart that demonstrates the FDA provided adverse event information for the drug queried.
  - Verified adverse events and aggregate the number of occurrences for each drug queried.

## 2.7 Add Links to Footer

- Verified that a link to the code repository is displayed in the footer and active
- Verified that a link to the TechFlow website homepage is displayed in the footer and active

## 2.8 Auto-Complete

- Verified that the system displays auto-complete suggestions for partial text strings typed into the search box
- Verified that searches can be conducted on auto-complete suggestions

## 2.9 Google Analytics

- Verified that the system displays traffic monitoring metrics

## 3.0 Test Analysis

Each manual test scenario is executed and evaluated on an individual basis. When the actual result does not meet the expected result, the actual result will be recorded. The results of iterations of the execution of test scenarios is recorded on the scrum board.

### 3.1 Development Phase Unit and Integrated Testing

The TechFlow development team is responsible for Unit Testing and Integration Testing to make sure the application developed is functioning according to the acceptance criteria and design specifications. The unit testing utilized JUnit tests and sonarqube (see UnitTestResults\_TechFlow\_ADS-I\_Final file), which are created for any new services and modified services when applicable. The JUnit tests are designed to test individual functional units of the software to make sure they work in isolation.

Additionally, the Integration testing utilized Java based Selenium tests, which were created to exercise the Graphical User Interface (GUI) to ensure that the normal workflow is functioning properly prior to handing off the testing activities to SQA.

### 3.2 System Testing

System Testing is the primary testing activity in the Test Phase and is comprised of multiple types of testing: functional, end-to-end, regression, usability, and 508(a) compliance (see 508ComplianceResults\_TechFlow\_ADS-I\_Final file), which were performed as part of the DARI product testing. The majority of the testing is performed manually in the application. The results of each test case run were recorded on the scrum board.

#### 3.2.1 Functional Testing

There are no outstanding system deficiencies to report for the DARI product deliverable.  
There are no outstanding suggested enhancements to report for the DARI product deliverable.

#### 3.2.2 Regression Testing

Regression testing was performed to confirm the any new DARI product code and configuration did not negatively impact the functionality that already passed testing. There are no outstanding items to report.

## 4.0 Conclusion

### 4.1 Demonstrated Capability

8 test scenarios were executed based on the acceptance criteria identified in the user stories for the DARI product.

- As of June 30, 2015, the test scenario progress is as follows:
  - 8 Passed
  - 0 Failed

### 4.2 System Deficiencies

There is one reported defect for the DARI product. The defect has been added to the product backlog.

### 4.2 Recommended Improvements

There are no outstanding recommended improvements to report for the DARI product.

### 4.3 System Readiness for Review

The TechFlow SQA team concludes that the testing performed provides evidence that the DARI product acceptance criteria has been successfully implemented, the product is stable, and ready for delivery based on the following:

- The test approach was fully executed and satisfied via system testing.
- The test scenarios were executed with one non-critical outstanding system deficiency.
- Regression testing that has been performed has not exposed any defects related to new code.