# Introduction

## The Test Plan Document

This test plan describes a non-comprehensive testing plan for the Seaga Infinity INF5S Snack Vending Machine (‘Machine’.) The machine is an all-in-one vending machine where all the units necessary for vending are integrated.

As the source is not available and the internal electromagnetic components difficult to access, this testing plan will validate the machine from a grey box perspective. Therefore, the test plan places emphasis on functional testing of the machine. Because normal operation of the machine entails continuous integration of new output products, regression testing is strongly recommended to ensure continuity of service. As this product is intended for public facing operation; security, accessibility and internationalization testing are all appropriate secondary concerns. Additional specific compliance testing may be required to comply with various health and safety or accessibility laws in any particular market.

Tests cases in this plan will be written in Gherkin, a declarative syntax for writing test cases in the Cucumber testing environment. In Gherkin, tests are written in a declarative fashion that omits the implementation of a unit in favor of describing the behavior of a system. Because the test analyst is assumed to understand the operation of the machine, omitting the implementation details allows test cases to be written with clarity. Further, test cases should describe the minimal viable situation such that cases are modular and useful for troubleshooting errors.

Test cases are written in declarative syntax are unambiguous and easy to execute in an objective fashion. Looking forward, this syntax allows us to bridge the gap between natural language based manual testing and automated testing paradigms.

Syntax for Gherkin can be found here:

<https://cucumber.io/docs/gherkin/reference/>

# Functional Testing

## 2.1 Test Equipment

* Currency and Near-Currency
  + USD Banknotes: comprising 1, 2, 5, 10, 20, 50, 100 values. (‘Bills’)
  + USD Coins: comprising .05, .10, .25, .50 and 1 values. (‘Coins’)
  + Defaced / Counterfeit USD Banknotes: comprising an array of defaced, counterfeit, or otherwise illegal tender. (‘Defaced Bills’)
  + Defaced / Counterfeit USD Coins: comprising an array of defaced, counterfeit, or otherwise illegal tender. (‘Defaced Coins’)
  + Foreign Banknotes: an array of foreign banknotes in various denominations. (‘Foreign Bills’)
  + Foreign Coins: an array of foreign coins in various denominations. (‘Foreign Coins)
  + Valid Cards: an array of legal magstripe style electronic payment cards that use debit and credit payment protocols. (‘Valid Cards’)
  + Invalid Cards: an array of invalid magstripe and “chip’n’pin” style electronic payment cards that use debit and credit payment protocols. (‘Invalid Cards’)
* Dispensable Items
  + Chip Package: N number of chip packages to equal the aisle depth plus one. (‘Chips’)
  + Candy Package: N number of canady packages to equal the aisle depth plus one. (‘Candy’)
  + Pastry Package: N number of pastry packages to equal the aisle depth plus one. (‘Pastry’)
* Hardware
  + DEX capable, MDB reader.
  + Keys: Necessary keys to access the lockbox, vend shelves, etc.

## 2.2 Module Test State

|  |  |  |
| --- | --- | --- |
| **Module to Test** | **Tested** | **Test Description** |
| Payment Module | Yes | Ensure the payment module handles transactions in a robust way. |
| Dispenser Module | Yes | Ensure that the dispensing system is robust in dispensing appropriately and handles common error fringe cases. |
| Admin Interface Panel | Partial | Ensures that the unit boots correctly, ensures that internal software can be accessed through the management port and ensures the software reports correctly. |
| Internal ElectroMechanical Equipment | Partial | Internal electromechanical equipment- motors, servos, power transformers, etc will not be tested. For the purpose of this test plan, assume all such components are in proper working order as designed. Internal components which are safe to operate and accessible to end users will be tested. |

## 2.3 Test Entry / Exit Criteria

|  |  |
| --- | --- |
| Entry Condition | Exit Condition |
| Any particular unit shall enter testing prior to service. Either after manufacturing, or after a resumption of service after a significant interruption in service. | The unit shall leave the testing phase when no critical defects have been found. Or when all critical defects have been resolved. |

## 2.4 Test Approach(s)

The overall approach of the test is the use of gray box testing. Tst analysts have some access to the internal state of the machine. However that access is neither complete nor entirely safe to testers. This is a constraint on the testing plan. If this testing paradigm is deemed insufficient to suit the quality needs of the product, new methodologies will be required.

## 2.5 Test Deliverables

The test plan subscribes to the document-in-place philosophy. Therefore, the test analyst will be able to return a marked version of the test cases spreadsheet documenting their tests and any defects found.

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