Locator Unit Test Plan

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# Introduction

This document describes the unit test plan for the locator application.

## Test Environment

The locator application works with a file base input. The input is formatted in a CSV format with each line containing up to 4 TOA

# Unit Tests

## TOA Input File Tests

This section describes the test for validating the input TOA file.

## Missing TOA Input File

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.1 | Application should handle the case when the specified input file is missing | * Execute Locator.exe with a non-existent csv file | * Application should exit with code (= -4) |

## No Input file specified

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.2 | Application should handle the case when no input file is specified | * Execute Locator.exe without any arguments | * Application should exit with a usage message |

## Empty Line in Input File

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.3 | Application should handle the case when there is an empty line in the input file | * Execute Locator.exe with a scenario file | * Application should exit with error code (-3) |

## Missing Station 1 TOA

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.4 | Application should handle the case when no TOA is specified for station 1 | * Execute Locator.exe with a scenario file which has a missing TOA for station 1 but valid values for remaining stations | * Check application log for WLS message * Number of stations used in position computation should be 3 |

## Missing Station 2 TOA

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.5 | Application should handle the case when no TOA is specified for station 2 | * Execute Locator.exe with a scenario file which has a missing TOA for station 2 but valid values for remaining stations | * Check application log for WLS message * Number of stations used in position computation should be 3 |

## Missing Station 3 TOA

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.6 | Application should handle the case when no TOA is specified for station 3 | * Execute Locator.exe with a scenario file which has a missing TOA for station 3 but valid values for remaining stations | * Check application log for WLS message * Number of stations used in position computation should be 3 |

## Missing Station 4 TOA

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.7 | Application should handle the case when no TOA is specified for station 4 | * Execute Locator.exe with a scenario file which has a missing TOA for station 4 but valid values for remaining stations | * Check application log for WLS message * Number of stations used in position computation should be 3 |

## Incorrect format for missing TOA

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.8 | Only the ‘-‘ should be allowed to indicate no TOA availability | * Execute Locator.exe with a scenario file which has a missing TOA for station 1 using a character ‘=’ | * Application should exit with error code (-3) |

## More than 4 TOA per line

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.1.9 | Check that only 4 TOA per line are specified | * Execute Locator.exe with a scenario file which has 5 TOA values for any line | * Application should exit with error code (-3) |

## Output File Tests

## Output File Name format

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.2.1 | The output file should be created with the same name as input scenario file and suffic “-proc” appended | * Execute Locator.exe with a scenario file CarA.csv | * Application should create the output file CarA\_proc.csv |

## Unable to create output file

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.2.1 | Handle the case when output file creation fails | * Execute Locator.exe with a scenario file CarA.csv * Open the CarA\_proc.csv in Microsoft Excel * Execute Locator.exe with a scenario file CarA.csv | * Application should exit with error code (-6) |

## Station Location Injection Tests

## Input greater than 4 station

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.3.1 | Application should reject inputting more than 4 station location info | * Modify application code to attempt injecting 5 location info * Execute Locator.exe with a scenario file CarA.csv | * Application should exit with error code -7 |

## PRNG Format Tests

## PRNG format

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.4.1 | Check PRNG status flag indicates correctly the status for all 4 stations | * Execute Locator.exe with a scenario file CarA.csv | * Check PRNG message for each field |

## WLS format tests

## 4 measurements

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.5.1 | Check WLS message indicates all 4 beacons used in fix | * Execute Locator.exe with a scenario file CarA.csv | * Confirm that WLS message indicates 4 beacons are used in fix |

## Less than 4 measurements

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.5.2 | Check WLS message indicates 3 beacons used in fix | * Execute Locator.exe with a scenario file CarB.csv | * Confirm that WLS message indicates 3 beacons are used in fix |

## FFIX format tests

## Check FFIX format

|  |  |  |  |
| --- | --- | --- | --- |
| TC ID | Purpose | Test Steps | Pass Criteria |
| 2.5.1 | Check FFIX message indicates 4 beacons used in fix | * Execute Locator.exe with a scenario file CarB.csv | * Confirm that FFIX message indicates 4 beacons are used in fix |