PSA\_MEDIA\_AAP\_CP

SYSTEM TEST PLAN

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### **DOCUMENT REVISION HISTORY**

Below table provides information on how the development of the system test plan for PSA\_MEDIA\_AAP\_CP project, up to the final point of approval was controlled and tracked.

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Change Description** |
| 0.1 | 29th March 2019 | Arpit Nigam | Initial draft |
| 1.0 | 01st April 2019 | Arpit Nigam | Baseline version |

# **INTRODUCTION**

Race implementation on PSA IMX8D based platform transport for iAP2 and USB devices connected for audio/video browsing & playback, USB Carplay and USB Android Auto Projection implementation.

# **SCOPE**

Scope of the PSA\_MEDIA\_AAP\_CP system test plan is to define the test plan, test strategy, type of tests, test schedule, test environment, test criteria and test deliverables for the project. It also includes the risks, assumptions and resources needed quality assurance testing of the project.

**ABBREVIATIONS**

|  |  |
| --- | --- |
| **ABBREVIATIONS** | **DEFINITIONS** |
| RACE | Robust Automotive Connectivity and Entertainment |
| USB | Universal Serial Bus |
| iAP | IPOD Accessory Protocol |
| BT | Bluetooth |
| API | Application Programming Interface |
| GUI | Graphical User Interface |
| AA / AAP | Android Auto / Android Auto Projection |
| DM | Device Manager |
| CP | Carplay |
| UMASS | USB Mass Storage Devices |

# **FEATURES TO BE TESTED**

Top-level project features

|  |
| --- |
| Module Name |
| Database |
| Browsing |
| Playback |
| USB Carplay |
| USB AAP |

# **TEST STRATEGY**

# **1.TEST OBJECTIVE :**

# **Production Project:** The test objective is to cover the project life cycle test and deliver the software without any CAT0/CAT1 bugs in the initial release and without any CAT0/CAT1/CAT2 bugs in the final release.

## **2. TEST EXECUTION STRATEGY :**

## Test execution strategy describes different types of tests that will be executed for PSA\_MEDIA\_AAP\_CP program. Basis for selection of different types of tests to be executed for given project could be dependent of types of projects as listed in section 6.

## **Production Project**: Sanity Test + Regression Test + Functional Test + Stress Test + Performance Test

# **TEST TYPES**

Applicable test types and related execution plan are listed in this section.

**1.SANITY TEST**

The sanity testing includes functional testing of subset of functionality. This subset could be of most frequently used functionality or could be sample representative of group of functionalities of project/product.

Sanity testing shall be performed in following scenarios:

### 1.1 WHAT TO TEST

* Connection/Disconnection of USB/IAP2, CP and AAP.
* Database syncing of IAP2 and USB devices.
* Browsing and Playback of audio & videos – Hierarchal,Metadata and Playlists of USB.
* Browsing and Playback of audio – Metadata, Playlists Podcast and Audiobook for iAP2.
* Shuffle/Repeat settings.
* Resume on connection.
* Carplay Application launching.
* Basic functionality of Telephony,Music,Siri,over USB Carplay.
* Android Auto application launching.
* Basic functionalities of AA projection like Media, Dialer, Voice Recognition and Navigation.

### 1.2 WHEN TO TEST

* Initial stages of project.
* Before every functional testing
* After bug verification and regression test

### 1.3 HOW TO TEST

* Intial two release with command line test app
* Aftet that GUI

### **2 FUNCTIONAL TEST**

The functional test includes testing for positive, negative and all possible corner cases for all the features of the project.

### 2.1 WHAT TO TEST

* Connection/Disconnection of USB/IAP2, CP and AAP.
* Database,Browsing and Playback of audio & videos – Hierarchal,Metadata and Playlists of USB.
* Database,Browsing and Playback of audio – Metadata, Playlists Podcast and Audiobook for iAP2.
* Resume On Connection for USB/IAP2.
* Check Track Info like Metadata, playback status of USB/IAP2.
* Searching a track for USB/IAP2.
* Audio playback verification during overnight and check glitches during playback..
* Carplay application launching.
* Telephony for Carplay application.
* Siri command use cases for Carplay application.
* Combination of connection/disconnection of IAP2 with USB Carplay session.
* Browsing and Playback- Metadata,Playlist for Carplay application.
* Third party application projection while launching Carplay
* Android Auto application launching.
* Connection/Disconnection over USB AA projection.
* AA Dialer Facet- incoming and outgoing call features
* AA Media- Metadata, Playlist, Play, Pause, Next, Previous features.
* Navigation for AA application.
* VR command use cases for AA application.

### 2.2 WHEN TO TEST

* After implementation of a single feature or all features during the life cycle of project
* At least once for every formal release
* If major functionality change or more number of bug fixes for a single release
* Functionality test request for different set of devices

### 2.3 HOW TO TEST

* Intial two release with command line test app
* Aftet that GUI

## **3 STRESS TEST**

## The stress test ensures the stability of the system by applying multiple occurrence of scenarios at the same time with different load condition.

### 3.1 WHAT TO TEST

* Connection/Disconnection 100-500 times for USB/IAP2,CP and AAP
* 12/24 hours playback.
* Do Next/Previous track more than 100 times.
* Play control operation more than 50-100 times for iAP2
* Siri and Telephony operation more than 100 times
* Play, Pause, Next and Previous operations 10-100 times for AA Media.
* VR and Telephony operation more than 10-100 times for AA Dialer.
* AA Navigation operation for around 30 minutes.

### 3.2 HOW TO TEST

* Intial two release with command line test app
* Aftet that GUI

### 3.3 WHEN TO TEST

* After implementation of all the features or set of features
* Stress test request for different set of devices

## **4 REGRESSION TEST**

Regression test is nothing but full or partial selection of already executed test cases which are re-executed to ensure existing functionalities work fine after the bug fix.

### 4.1 WHAT TO TEST

* Sanity Test
* Bug Verification Test with impacted area's*.*

### 4.2 HOW TO TEST

* Intial two release with command line test app
* Aftet that GUI

### 4.3 WHEN TO TEST

* After bug verification if no functional testing is planned.

### **5 . PERFORMANCE TEST**

## The performance test is the process of determining the response time of every functionality a system. For example, how much time device detection took or how much time system took to sync data etc.

### 5.1 WHAT TO TEST

### Will be Tested in future.

* Time took to do Connection/Disconnection/Browsing/Playback of USB/IAP2
* Time took to do launching Carplay application.
* Time took to Siri command response.
* Time took to do launching Android Auto application.
* Time took to VR command response.
* Time took to launch AA Media, AA Dialer, AA VR and AA Maps Facet.
* Time took to exit from AA projection.
* Time took to response play control operation for iAP2, AAP and Carplay.

### 5.2 HOW TO TEST

* Intial two release with command line test app
* Aftet that GUI

### 5.3 WHEN TO TEST

* Once system is stable after implementation of partial or complete features list
* After doing the stress test

**TEST ENVIRONMENT**

Test environment will mainly include

**- Device under test**

Below is the list of the device/s on which testing needs to perform.

1. PSA IMX8D Board

**- External devices**

Below is the list of the devices which will be used for testing on device under test.

* + - 1. USB hub
      2. Power supply
      3. Head phones/Speakers
      4. Minicom cable

## **1. TEST DEVICES:**

## Below is the list of the devices which will be tested during the life cycle of the project based on the

testing type.

* Functional Test/Sanity Test:
* iAP2 device(Carplay and IAP2) : iPhone 5C/5S/6S/7/7+/8 with latest ios version
* MTP device(AAP) : Samsung,Google Pixel and Nexus 6P with latest android version
* USB : Sandisk,Kingston with different storage.

## **2. TEST DATA:**

Below is the required test data needed to test,

* dataset\_PSA (/smb://queen/testing\_data\_readonly/dataset\_PSA)

# 

# **TEST ENTRY, EXIT, SUSPENSION & RESUMPTION CRITERIA**

# **1. TEST ENTRY** :

# Following are the test entry criteria:

- Complete or partial test able code is available

- Availability of sufficient and desired test data

- Test cases are developed and base-lined

- Test environment has been set-up and all other necessary resources such as tools and devices

are available.

- Official software release provided by development team to test team by raising system test

request in Redmine.

**2. TEST EXIT :**

Following are the test exit criteria:

* + Execution of all testcases
  + All the resolved bugs are verified and got closed or reopened.
  + If there is any change in scope of testing because of some other priority

## **1. TEST SUSPENSION & RESUMPTION CRITERIA**

### 1.1 SUSPENSION CRITERIA

* Hardware/software not available at the time indicated in the project schedule
* The release contains many serious defects which seriously prevent or limit testing progress i.e. CAT0 bug.
* Assigned test resources (Like beagle analyzer or any dependent hardware) are not available when needed by the test team.

### 1.2 RESUMPTION CRITERIA

* If testing is suspended, resumption will only occur when the problem(s) that caused the suspension to have been resolved. When a critical defect is the cause of the suspension, the “FIX” must be verified by the testing team before testing is resumed.

# 

# **TEST EXECUTION STATUS DENFINITION:**

Following table describes the status of the test case

|  |  |
| --- | --- |
| **STATUS** | **SUMMARY** |
| **PASS** | Test run-result matches the expected-result. |
| **FAIL** | Test run-result did not match expected-result. In some cases, test run-result did match expected-result but caused another problem. A defect must be logged and referenced for all failed test cases |
| **Not Tested(NT)** | Test has not yet been executed because of dependencies or bug, and can be tested further if dependencies are resolved |
| **Not Applicable(NA)** | Test feature not implemented or invalid test for the scope of application |

# **BUG TRACKING:**

All defects will be logged in Bugzilla and assigned to developer, when developer fixes, tester will verify and close or reopen the defect.

* Internal Bugzilla Path**:** <http://cobra.allgolocal.com/bugzilla/>

Bugzilla is used for internal bug tracking and it cannot be accessible outside Allgo.

If customer want to use the Bugzilla, then we need External Bugzilla setup.

## 1. **BUG SEVERITY AND PRIORITY**

Bug Severity and Priority fields are both very important for categorizing bugs and prioritizing when the bugs will be fixed. Test Engineer will assign a severity level to all bugs. For more details see the description in the link: [http://hobbes.allgolocal.com/uploads/Process/PR%20Management%20Bugzilla%20V1.0.pdf](http://hobbes.allgolocal.com/uploads/Process/PR Management Bugzilla V1.0.pdf)

# **TOOLS**

# **1. CONFIGURATION MANAGEMENT**

* GIT will be used to store test artifacts

## 2. **OTHER TOOLS**

* Redmine for STR
* Bug Reporting and tracking on Bugzilla

# **TEST DELIVERABLES**

# **Test team will provide following items as deliverables**

* System Test Plan
* System Test Cases
* System Test Report

# **RISKS AND ASSUMPTIONS**

## **1. RISKS**

Identify risk if any for this project.

<Risk-1>**:**  
<Brief description if risk 1>

### 1.1 RISK MIGRATION PLAN

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **DESCRIPTION** | **MONITORING PROCESS** | **MITIGATION PLAN** |
| 1. | <No Risk> | <No Risk> | <No Risk> |

## 2. **ASSUMPTIONS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# **RESOURCE AND RESPONSIBILITIES:**

|  |  |
| --- | --- |
| 1. **NAME** | 1. **ROLES AND RESPONSIBILITIES** |
| 1. Arpit/Sravani/Ashutosh/Vivek | 1. Test Plan,Test cases Preparation |
| 1. Giri/Rohit/Swati | 1. TestCase Execution,Bug Reporting and Bug Tracking |
| 1. Haseeb/Deepak/Sravani | 1. TestCase Review |

### **SCHEDULE :**

### 

### **REFERENCES :**

Following are the references for this document:

* PMP document
* Software testing website (http://softwaretestingfundamentals.com/test-plan/)