Test Plan – Car Music System

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Document History

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| Version | Date | Author | Description of Change |
| 1.1 | 05/16/2024 | Vinith | Initial Draft: Introduction and project overview |
| 1.2 | 05/16/2024 | Shilpa | Revised Draft: Added Test Objectives and Test Assumptions |
| 1.3 | 05/16/2024 | Jayavardhini | Revised Draft: Added Test Principles and Data Approach |
| 1.4 | 05/16/2024 | Harshvardhan | Review Changes Added: Scope and Levels of Testing |
| 1.5 | 05/16/2024 | Hrushikesh | Review Changes Added: UAT |
| 1.6 | 05/16/2024 | Asha | Final Draft: Test Deliverable and Test Effort Estimate |

Approvers List

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| Name | Role | Approver/Reviewer | Approval/Review Date |
| Abhishek | QA Trainer | Approver | 05/16/2024 |

Reference Documents

|  |  |  |
| --- | --- | --- |
| Version | Date | Document Name |
| 2.0 | 03/15/2024 | Car Infotainment System Hardware Specification |
| 3.1 | 04/20/2024 | Car User Interface Design Guidelines |
| 1.5 | 05/05/2024 | Performance Testing Documentation |
| 1.7 | 05/12/2024 | User Experience Feedback Report |

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1. INTRODUCTION

1.1 Purpose

The purpose of this test plan is to describe the scope, approach, resources, and schedule for testing activities related to the car's music system software. The primary objective is to verify that the music system meets all specified requirements, adheres to industry standards, and delivers a high-quality user experience.

1.2. Project Overview

- The test plan document for the car music system provides a comprehensive and well-structured approach to testing the new software feature.

- The plan covers all essential aspects of testing, including the scope, approach, environment, schedule, and resource allocation.

- This test plan is designed to ensure the music system software functions correctly within the car's infotainment system.

1.3. Audience

This test plan is intended for a variety of audiences involved in the development and launch of the car's music system:

- Project Team Members: Testers, developers, quality assurance specialists, and anyone directly responsible for executing the testing activities outlined in this document. They will use this plan to guide their work and provide feedback for improvement.

- Project Manager: Responsible for overseeing the entire testing process. This plan helps the Project Manager schedule testing activities, track progress, assess performance, and ultimately approve the final document and take ownership of the testing results.

- Stakeholders: This may include representatives from marketing, sales, and product ownership. While they may not be directly conducting tests, they have a vested interest in the results. This plan provides them with an overview of the testing strategy and allows them to participate in User Acceptance Testing (UAT) to ensure the final product aligns with their expectations.

- Technical Team: This includes engineers, and IT specialists who provide the testing environment, configure devices, and implement bug fixes based on test results.

- Business Analysts: These individuals will use this plan to understand the scope of testing and ensure alignment with the functional requirements of the music system. They may also provide input on any necessary adjustments to the testing strategy based on evolving business needs.

2. TEST STRATEGY

2.1. Test Objectives

The objective of the test is to verify that the functionality of the car's music system software works according to the specifications. The test will execute and verify the test scripts, identify, fix, and retest all high and medium severity defects per the entrance criteria, and prioritize lower severity defects for future fixing via CR.

The final product of the test is twofold:

- A production-ready music system software;

- A set of stable test scripts that can be reused for Functional and UAT test execution.

2.2. Assumptions

Key Assumptions:

- Production-like data will be required and must be available on the music system prior to the start of Functional Testing.

General:

- During Functional Testing, the testing team will use preloaded data which is available on the music system at the time of execution.

- The Test Team will perform Functional Testing on all specified music system features and functionalities.

UAT:

- UAT test execution will be performed by end users (L1, L2, and L3), and the QA Group will provide their support in creating UAT scripts.

2.3 Test Principles

- Test the device with different versions of the operating system, including the latest version and older versions that the device is expected to support.

- Test core functionalities like music playback, playlist management, volume control, and equalizer settings.

- Test connectivity with various external devices such as smartphones and USB drives.

- Verify audio output quality through different audio systems (e.g., car speakers, Bluetooth devices).

- Test performance under different conditions such as simultaneous navigation usage and incoming calls.

- Test for consistency and responsiveness of the user interface.

- Verify security features such as data privacy and access controls.

2.4 Data Approach

For the data approach, we loaded a variety of media files including MP3, AAC, and FLAC formats to test the music system's compatibility and performance.

2.5 Scope and Levels of Testing

2.5.1 Exploratory:

Purpose: The purpose of exploratory testing for the car music system is to identify critical defects and usability issues early in the development process to ensure a smoother transition to subsequent levels of testing.

Scope: The scope of exploratory testing for the music system primarily covers core functionalities and user interactions. This includes basic navigation, music playback, playlist management, volume control, and equalizer settings.

Testers: The testing team, comprising quality assurance (QA) engineers and possibly usability experts, conduct exploratory testing for the music system.

Method: Exploratory testing in the music system is carried out without predefined test scripts or documentation. Testers interact with the music system as end-users would, exploring various features and functionalities intuitively. They may focus on common user scenarios, edge cases, and stress testing to uncover potential issues. Testers rely on their experience, intuition, and domain knowledge to identify defects and usability issues.

Timing: Exploratory testing for the music system is conducted at the beginning of each development cycle or sprint. It serves as an initial check to catch critical defects early on before proceeding to more structured testing phases.

2.5.2 Functional Test

Purpose: Functional testing will be performed to check the functions of the music system software. Specifically, to ensure seamless music playback, playlist management, volume control, and equalizer settings.

Scope: The scope of this testing is to validate the core functionalities of the music system, including multimedia playback and connectivity with external devices.

Testers: Testing Team.

Method: Execute test cases stored in the music system according to pre-defined scripts.

Timing: After Completion of Exploratory Test.

2.5.3 User Acceptance Test (UAT)

Purpose: The User Acceptance Test (UAT) for the music system focuses on validating the business logic and ensuring that the device meets the end-users' requirements and expectations before deployment. It provides an opportunity for end-users to conduct a final review of the music system's software and functionality.

Testers: The UAT is performed by end-users, including representatives from different user levels (L1, L2, and L3), who are most familiar with the business needs and how the music system's features should align with them.

Method: Since end-users are best positioned to provide input on business needs and how the music system's features accommodate them, the Test Team collaborates with end-users and Business Analysts to develop UAT test cases. These test cases are based on inputs from end-users and may include scenarios not covered in previous testing phases. Testers execute the UAT test cases on the music system, verifying that the system behaves as expected and meets business requirements.

Timing: The UAT is conducted after all other levels of testing, including Exploratory and Functional testing, are completed. Only after the

successful completion of these prior tests is the UAT executed, ensuring the system is ready for final end-user validation.

2.6 Test Effort Estimate

The effort estimate for the car music system testing is as follows:

* Exploratory Testing: 3 days
* Functional Testing: 10 days
* UAT: 7 days

3. TEST DELIVERABLES

The deliverables for the test are:

* Test Plan Document
* Test Cases
* Test Execution Reports
* UAT Feedback Reports

Thank You