# Evaluation Plan for Hatsune Miku VR Concert

## 1. Introduction

This evaluation plan details how the VR concert experience will be tested. The goal is to assess whether the system meets the user’s expectations and performs reliably.

This includes checking for functionality, ease of use and user immersion.

### 1.1 Test Objectives

The objectives of this evaluation are to:

* Ensure that users can move between locations in the venue
* Verify that the music plays correctly
* Check that the system is intuitive and easy for users
* Identify any technical bugs or issues

### 1.2 System Overview

Our VR concert features:

* A virtual concert hall environment
* Hatsune Miku as the performer
* Multiple song performances
* Audience space where users can move around
* Basic interactions (clapping, cheering)

## 2. Approach

### 2.1 Assumptions

### 2.2 Constraints

## 3. Evaluation Criteria

These aspects of the application will be evaluated:

Collaborative – Ability to support interactions between multiple users.

Usefulness – Ability of the system to fulfil its intended purpose.

Usability – Level of ease of user navigation and interaction.

Efficiency – Evaluating system performance such as loading times and responsiveness.

Interactivity – Efficacy of user interaction with the virtual environment.

Reliability –

Accuracy –

Stability –

Robustness –

## 4. Test Plan

|  |  |  |
| --- | --- | --- |
| **Feature** | **Testing** | **Success Criteria** |
| Collaborative |  |  |
| Usefulness | Conduct user surveys | Most users agree the application is useful |
| Usability | Users complete specific tasks | Most users complete tasks successfully without help |
| Efficiency | Measure loading time and FPS |  |
| Reliability | Run the application multiple times | 9/10 successful runs without errors |
| Accuracy |  |  |
| Stability |  |  |
| Interactivity |  |  |
| Robustness |  |  |

### 4.1 Features to Test

1. **Music System**
   * Test Method: Play each song completely
   * Success: All songs play start to finish without issues
2. **User Movement**
   * Test Method: Have users try moving to different spots
   * Success: 90% can reach all areas without help
3. **Visual Performance**
   * Test Method: Observe animations during songs
   * Success: No visible glitches in 95% of performance
4. **First-Time Use**
   * Test Method: Give headset to new users with no instructions
   * Success: 80% can start enjoying within 2 minutes

## 5. Experimental Protocol

To ensure that all participants are exposed to the same core features and their feedback can be compared consistently, each test participant will follow a standardized testing protocol.

Participants will interact with the following elements:

* The ‘T’ key – to move around the virtual space
* The mouse – the control the camera view and explore the environment
* The play button – To begin the concert performance

Ater interacting with the virtual application, participants will be asked to complete a short survey about their experience to provide insightful information on the functionality of the application features.

Each participant will complete one or more of the test cases below, depending on which aspects are being evaluated

### Test 1: Collaborative test

* Number of Participants: 4
* Background: Average university students
* Experience Level: Beginner to intermediate
* Features Tested: The sense of social presence and special awareness
* Test Method:
  + The suers enter the virtual concert and are allowed to freely explore and experience the concert
  + They attend a performance and are told to imagine it as a public event
  + After the session, users are asked how alone or social the environment felt.
* Observations:
* Conclusion:

### Test 2: Usefulness Test

* Number of Participants: 4
* Background: University students who enjoy concerts
* Experience Level: Beginner to intermediate with VR
* Features Tested: The overall relevance of the application
* Test Method:
  + Users enter the VR concert and are allowed to explore freely and attend a performance
  + Users are then asked to ratee on a scale of 1-10 how well the application gave them a “real” concert experience
  + Users are then asked the following questions – ‘Would you use this if you could not go to the real life concert’, ‘ Would you…
* Observations:
* Conclusion:

### Test 3: Usability Test

* Number of Participants: 4
* Background: General university students
* Experience Level: Beginner with VR
* Features Tested: Navigation, User interface, Control system
* Test Method:
  + Users enter the virtual concert
  + Users are prompted to explore the space and begin the concert all on their own
  + Users are observed for the difficulty level in figuring out and interacting with the elements
* Observations:
* Conclusion:

### Test 4: Efficiency Test

* Number of Participants: 4
* Background: University STEM students
* Experience Level: mixed
* Features Tested: Performance
* Test Method:
  + Users are asked to start up the application and the time taken to load is recorded.
  + Users are then asked to move to different locations.
  + The framerate is recorded
* Observations:
* Conclusion:

### Test 5: Interactivity Test

* Number of Participants: 4
* Background: Students who have attend live events (in-person or online)
* Experience Level: mixed
* Features Tested:
* Test Method:
* Observations:
* Conclusion:

## 6. Data Analysis

We will:

* Count how many tests passed/failed
* List common problems users had
* Measure performance (like loading times)
* Compare results to our success criteria

## 7. Conclusion

Based on the tests, we will:

* State whether the VR concert met its goals
* List any problems found
* Suggest improvements for next version

## 8. Appendices

* Survey questions for users
* Screenshots of test setup
* Raw test data