HCIPlayer: Benchmark Tasks

ECSE424 Winter 2010, McGill University

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1 Introduction

This document outlines the tasks that we expect a user to be able to perform with the HCIPlayer device as well as defining useful metrics for the usability of the device based on the user's performance in these tasks. We also formulate reasonable performance expectations for these tasks.

2 Usability Goals

Our usability goals are as follows (more detail can be found in the project notebook):

Ease-of-Use (EU)
> The ease-of-use measure is based on how easily the user is able to perform commands to which he/she has been introduced. This usability goal is measured in the number of seconds it takes for the user to correctly complete a command.

Effectiveness of Gesture Recognition (GR)
> This goal attempts to quantify how well gestures are recognized, and is measured in the number of gestures a user makes before the command is successfully recognized.

Effectiveness of Voice Recognition (VR)
> This goal attempts to quantify how well voice commands are recognized, and is measured in the number of times the user says a command before it is successfully recognized.

3   Benchmark Tasks

These tasks are analog to those asked of the user in the evaluation manual. There is no benchmark for the tutorial as it is a simple excercise focused on ensuring that the user has successfully performed every type of command in the system. While it is imperitive that it be completed it is not necessary that any results be derived from it.

2. Play a song using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

3. Pause a song using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

4. Play next song using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

5. Play previous song using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

6. Reduce volume using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	7s
(GR)	Number of gestures attempted	1

7. Play all songs by an artist using a voice command.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	13s
(VR)	Number of voice commands attempted	1

8. Play specific song using a voice command.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	13s
(VR)	Number of voice commands attempted	1

9. Mute playback using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

10. Unmute playback using gestures.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1

11. Play all songs by a specific artist.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	8s
(VR)	Number of voice commands attempted	1

12. Play a specific song without mentioning an artist.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	8s
(VR)	Number of voice commands attempted	1

13. Skip to next song by either speech or gesture.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	5s
(GR)	Number of gestures attempted	1
(VR)	Number of voice commands attempted	1

14. Stop playback.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	8s
(GR)	Number of gestures attempted	1
(VR)	Number of voice commands attempted	0

15. Stop playback.

Goal	Measure	Expected
(EU)	Time taken to complete (in seconds)	8s
(GR)	Number of gestures attempted	1
(VR)	Number of voice commands attempted	0