GUI Admission for VIPs: A Sound Initiative

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1 Introduction

Until now, mostly character-based applications were used on office computers. These applications could be accessed by visually impaired persons(VIPs) using Braille or synthetic speech. Recently, there has been a shift towards applications which require the presence of a graphical user interface (GUI). These GUIs should be adapted to facilitate collaboration between VIPs and sighted colleagues.

In a different project a hardware bridge was developed to link a VIP-specific I/O device to a computer which runs the GUI-based application software [1]. Here, we focus on the SoundTablet, an I/O device which not only provides VIPs with an alternative presentation of GUI elements, but which also facilitates direct manipulation of GUI elements.

2 SoundTablet

The SoundTablet consists of a rectangle on which GUI elements are presented as auditory objects. By moving a mouse-like device within the rectangle, GUI elements are made audible whenever the absolute position of the cordless mouse corresponds to the location of the auditory object on the tablet. Feedback on user actions like, for instance, selecting, activating, or dragging of auditory objects is also provided by means of sound.

3 Experiment

The aim was to investigate how well VIPs can locate and manipulate auditory objects on the SoundTablet. In a simple card-playing game VIPs had to locate auditory cards and drag them to an auditory trash can.

3.1 Setup

Sounds were presented through headphones. Hand movements of the subjects were video taped and user events were logged.

3.2 Sounds

The following sounds were used: