Exercise 2 – Mensch-Maschine-Interaktion 1

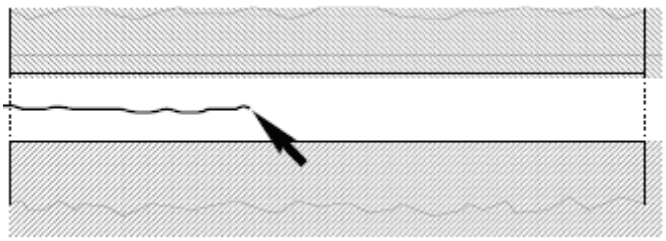
Law of Steering

Topic: In this exercise you will learn how to design a user study. The matter of investigation is the Law of Steering (Accot and Zhai, 1997), which predicts how long it takes a user to navigate a pointer through a tunnel.

1. User Study Design

(Per-group homework, 1 week)

In the following lecture you will get to know Fitts' Law (which predicts the time it takes to complete a pointing task) and the Law of Steering (which predicts the time it takes to navigate a pointer through a tunnel).



Self-paced movement through a tunnel (Accot and Zhai, 1997)

Without going into details about those laws, yet, imagine you want to do a user study to compare the difficulty of navigating a pointer through a tunnel under two different conditions. You are free to choose the conditions you want to compare. For example, you could compare

- the difficulty between different devices (joystick, mouse, tabletPC, …) or
- between different mouse settings (e.g. the mouse speed, which you can change in the mouse properties) or
- between using the mouse with hand (on a table) vs. foot (on a floor) or
- moving the cursor from the left to the right and vice versa

Design a user study (without running it, yet) and hand in a detailed description of the setup, including:

- type of the study
- the conditions you chose
- independent and dependent variables
- hypotheses

Explain why you chose the user study design and why other designs do not fit.

(turn page)

Submission:

- Send your solution to your tutor by email. Use an attachment named exercise2-groupN.pdf (N is the number of your group). Use the email subject "mmi1 exercise 2 group N".
- The attachment must contain:
  1. A detailed description of your design proposal ("proposal.pdf")
  2. A brief summary of your own understanding of Fitts' Law and the Law of Steering (approx. 100 words each) (fitts-law.pdf)
  3. A document that specifies how the work was split between the team members ("task-sharing.pdf").
- **Deadline:** 13.05.2009, 12:00 noon
- Present your conditions and the design proposal in the next tutorial (~ 5 minutes)