A Tactile Interaction Concept For In-Car Passenger Infotainment Systems

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Introduction:
• Most cars are not yet equipped with passenger infotainment systems
• The use of touchscreens inside a car can lead to ergonomic issues (e.g., fatigue from holding up arms, motion sickness when looking down)
• Restricted space inside a car limits opportunities for interfaces

What are the possibilities to improve passengers in-car experience by an easy screen navigation?

• Passenger activities: recommendations for points of interests, movie functions / entertainment, information
• Multi-user support: item sharing with other passengers in the car
• Interaction: absolute indirect touch, deployed on a remote control with tactile feedback

Feel & Click Navigation
Absolute indirect touch to improve UX

Method:
1. User study in nine pairs (N=18) inside a parked car, based on a mixed-subject design
2. Users performed entertainment and infotainment tasks
3. Measured perceived usability (satisfaction, effectiveness, efficiency) as well as UX (aesthetic, hedonic, pragmatic qualities) for entertainment and infotainment functions
4. Semi structured final interview

Results:
• High overall usability according to SUS score for infotainment functions (M = 76.4) and entertainment functions (M = 80.1)
• Overall excellent user experience (AttrakDiff)
• One third appreciated the interaction with the remote control a lot (easy and fast to use)