A tactile interaction concept for in-car passenger infotainment systems

Citation for published version (APA):

DOI:
10.1145/3349263.3351914

Document status and date:
Published: 21/09/2019

Document Version:
Accepted manuscript including changes made at the peer-review stage

Please check the document version of this publication:

• A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher’s website.
• The final author version and the galley proof are versions of the publication after peer review.
• The final published version features the final layout of the paper including the volume, issue and page numbers.

Link to publication

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the “Taverne” license above, please follow below link for the End User Agreement:
www.tue.nl/taverne

Take down policy
If you believe that this document breaches copyright please contact us at:
openaccess@tue.nl
providing details and we will investigate your claim.
A Tactile Interaction Concept For In-Car Passenger Infotainment Systems

Melanie Berger¹, Regina Bernhaupt¹², Bastian Pfleging²
¹ ruvido austria gmbh, ² Eindhoven University of Technology

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)