

DA Kick-Off: Presentation Concepts for Conformal Navigation Systems

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Presentation Concepts for Conformal Navigation Systems

Overview

- **Conformal Navigation Aids**
- **Approach**
- **Limitations**
- **Scope of this thesis**

Conformal Navigation Aids

Idea & Motivation:

- Head-Up Display (HUD): Reduces glance times
- Augmented Reality (AR): Same frame of reference



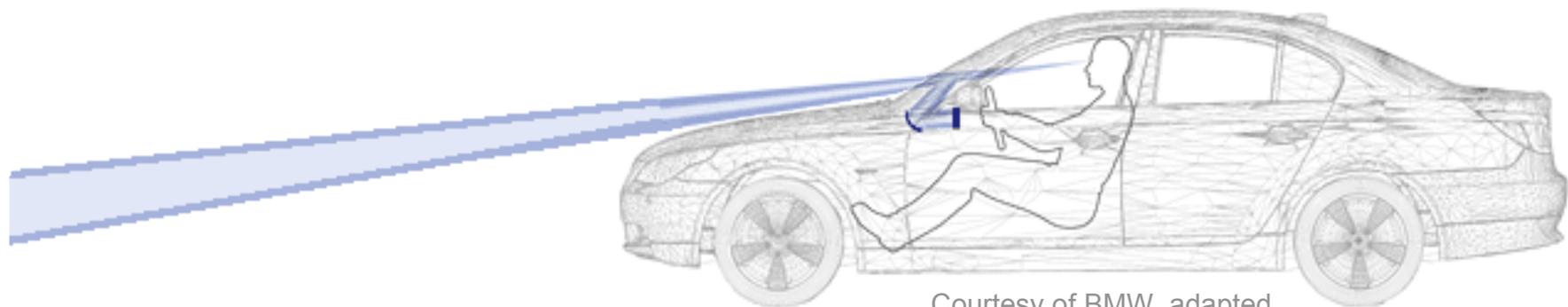
Approach for Conformal Indication

Display for Conformal Information Indication:

- Position of HUD is operative point
=> Focal depth in distance

Focal Plane in about 13 meters

- Accommodation time reduced
- Presentation of near information

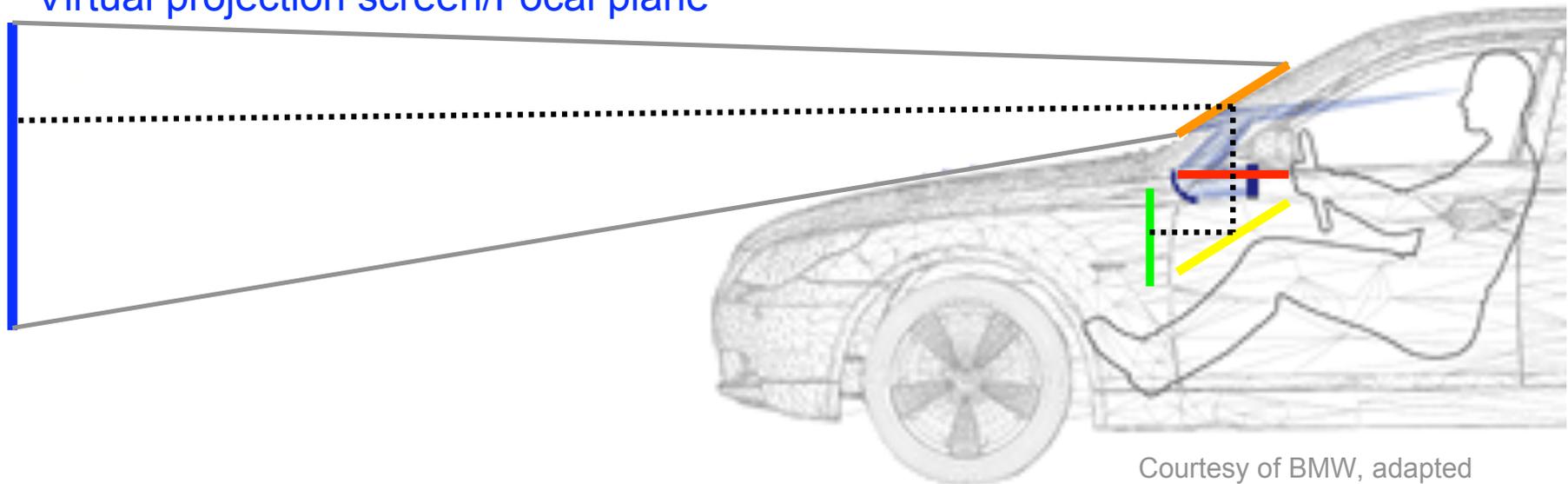


Courtesy of BMW, adapted

Approach for Conformal Displays

Optical Setup:

- Real projecting screen
- Mirror
- Lens
- Windshield HUD
- Virtual projection screen/Focal plane



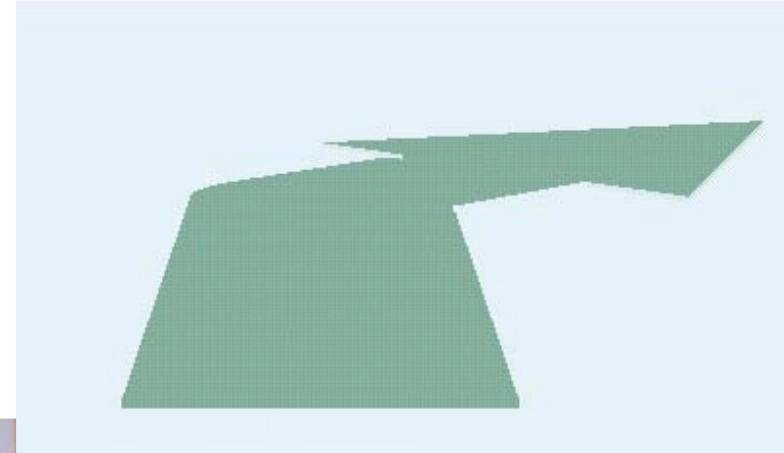
Courtesy of BMW, adapted

Problem: Virtual projection screen becomes blown up

Limitation of Conformal Displays

Problem: Screen

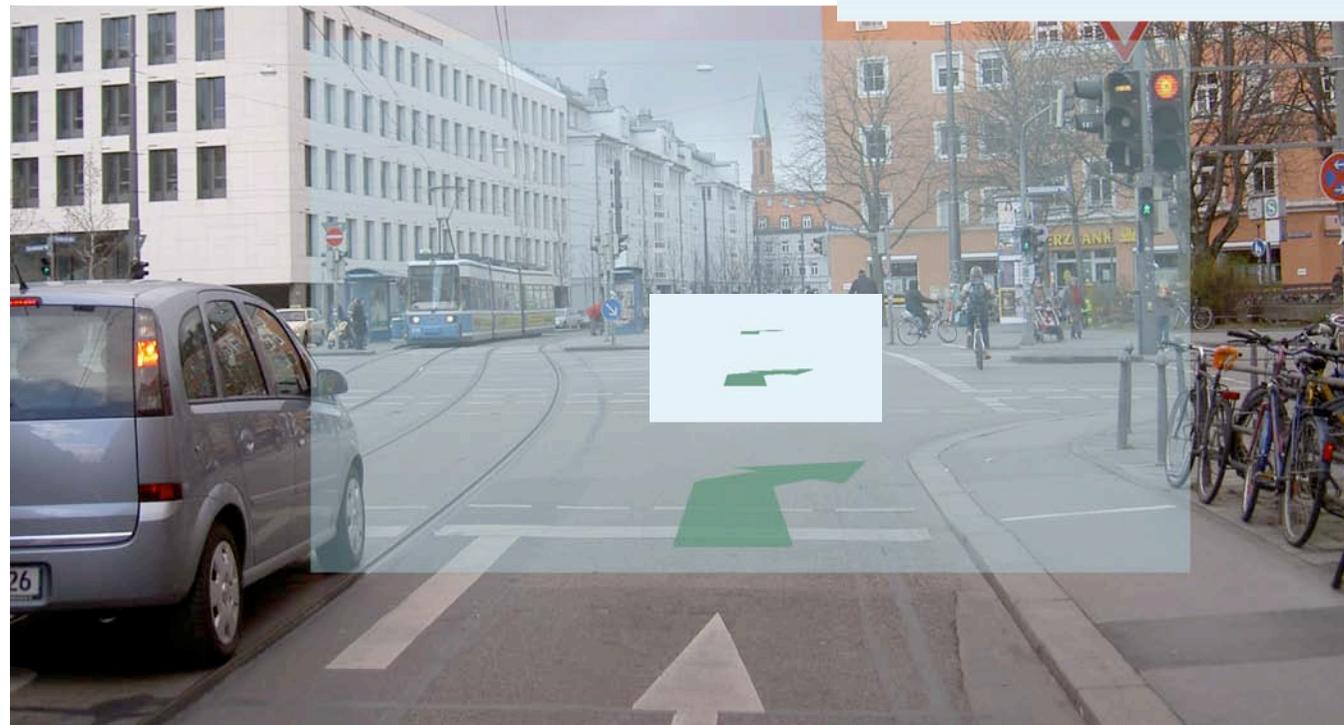
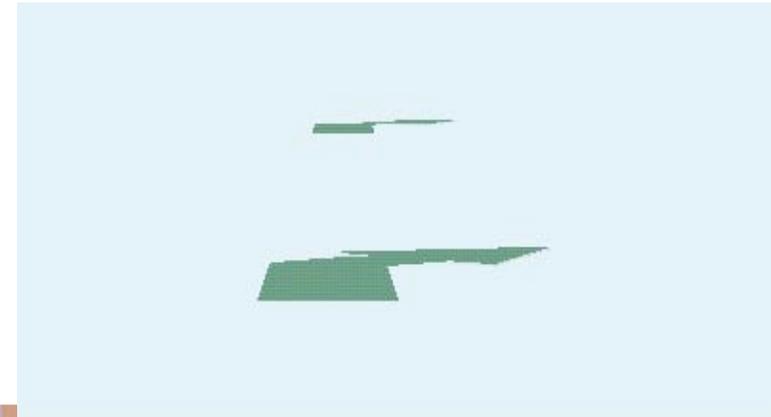
- Virtual projection screen becomes blown up
=> Large relative size of pixels



Limitation of Conformal Displays

Problem: Pixels

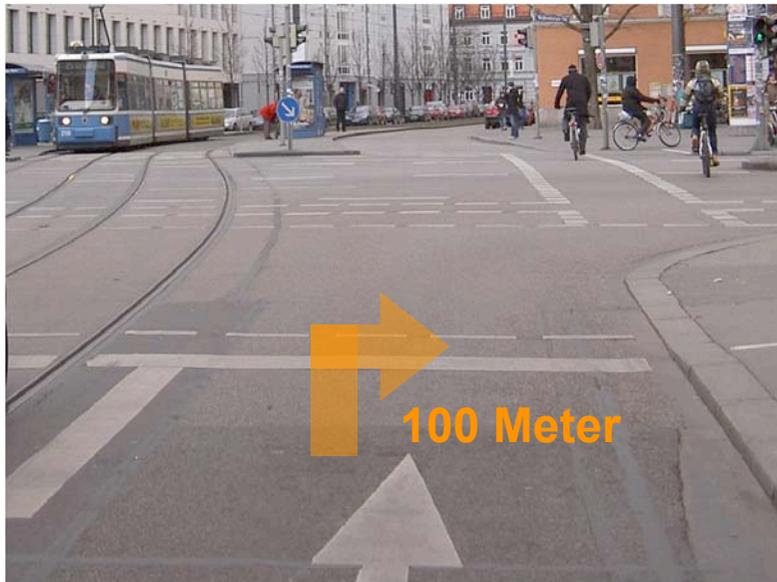
- Large size of pixels
=> Impairment to display AR information in distance



Hybrid Approach

Combination or Alternation:

- Symbolic and/or conformal navigation indication



Scope of the Thesis

Evaluation of conformal navigational aids:

- Contemplation of different visualization schemes
- Development of application for preliminary studies
- Identifying distance limitations
- Implementation of Usability study
- Evaluation of preselected AR navigation aids
- Do better projection devices improve conformal navigation facilities?

**Thank you for your attention!
Any Questions,
Suggestions
or
Feedback???**