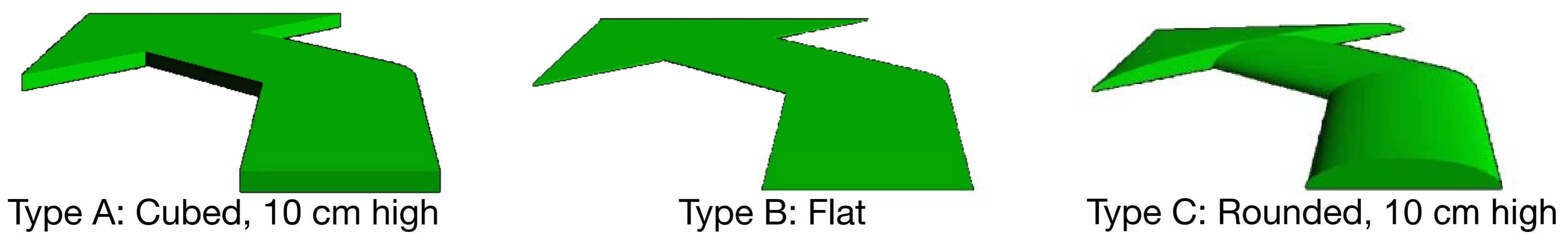


Perception Thresholds for Augmented Reality Navigation Schemes at Large Distances

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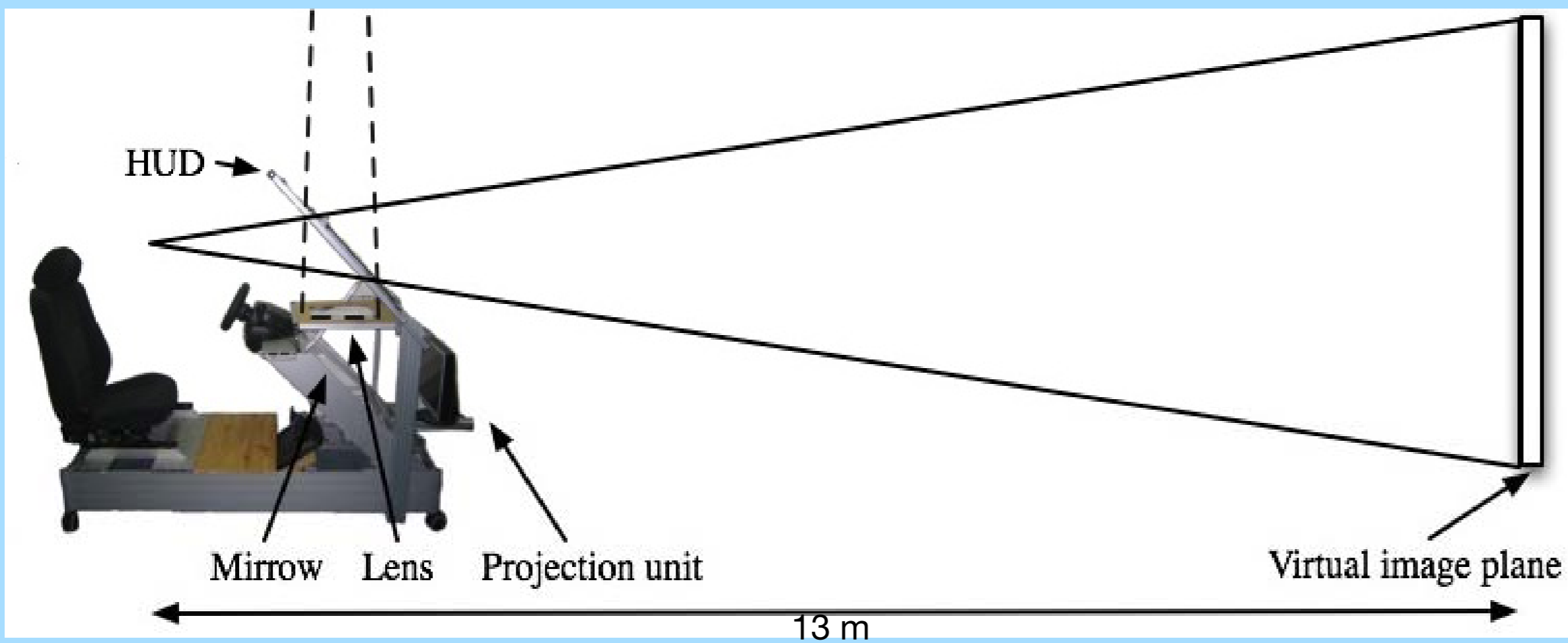
Issue: Resolution of AR displays is lower than the resolution of the human eye. AR Schemes get pixelized at large distances

Approach: Determine effects of presentation scheme design on their perceptibility in a Head-Up Display (HUD)



HUD:

- Display with resolution of 1680x1050 pixels
- Lens generating field of view of 34 degrees. Pixels have relative size of about 3.5 cm in 100m distance.
- Lens moves focal plane to distance of 13 m.



Generated superimposed AR image

Study & Results:

- 16 test subjects (mean age 25.5, standard deviation 2.94)
- Arrows appeared in long hallway at large distance and moved towards test subject
- As soon as the sign could be read, the test subject pressed button and indicated the perceived direction

