### **Do cyclists need HMIs** in future automated traffic? An interview study



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### BACKGROUND

Cyclists are expected to interact with automated vehicles (AVs) in future traffic, yet we know little about the nature of this interaction and the safety implications of AVs on cyclists.

On-bike human-machine interfaces (HMIs) and connecting cyclists to AVs and the road infrastructure may have the potential to enhance the safety of cyclists.

#### **METHOD**

Semi-structured online interviews were conducted with 15 cyclists in Norway and 15 cyclists in the Netherlands.

Thematic analysis was used to identify and contextualise the factors of cyclist-AV interaction and on-bike HMIs.

automated vehicles.

vehicles.

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A preprint is available at <u>ResearchGate</u>



# Cyclists need confirmation of detection by

# Cyclists are *hesitant* about being *equipped* with devices to communicate with automated

# A device requirement might *deter people* from choosing cycling as a transport mode.



### RESULTS

The results indicated that:

Cyclists prefer segregated infrastructure in the future.

In mixed urban traffic, cyclists need confirmation of detection by AVs.

External on-vehicle or on-bike HMIs might be solutions to fulfil the cyclists' need for recognition.

Cyclists are hesitant about being equipped with devices to communicate with AVs.

Responsibility of safety should lie with AV technology rather than with cyclists.

A device requirement might become a barrier to cycling as bicycles are traditionally cheap and simple, and additional costs might deter people from choosing cycling as a transport mode.



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