

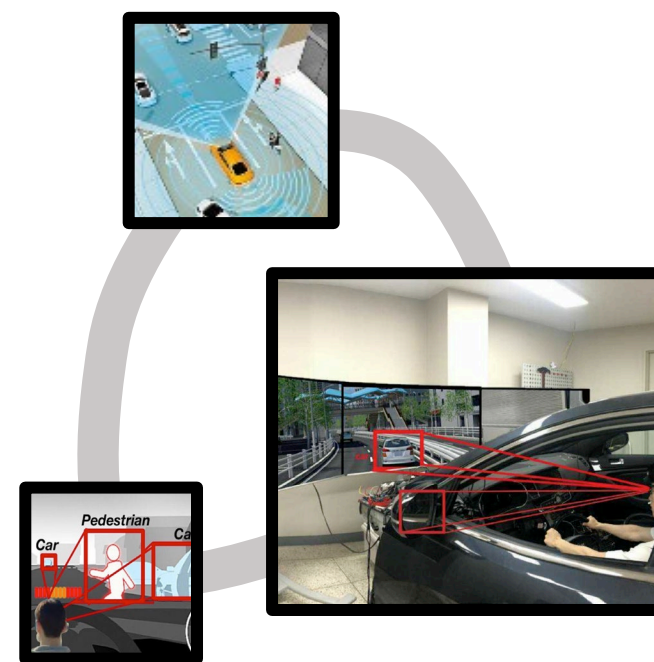
Background and Goal

ADAS does not know where the driver's attention is being focused.

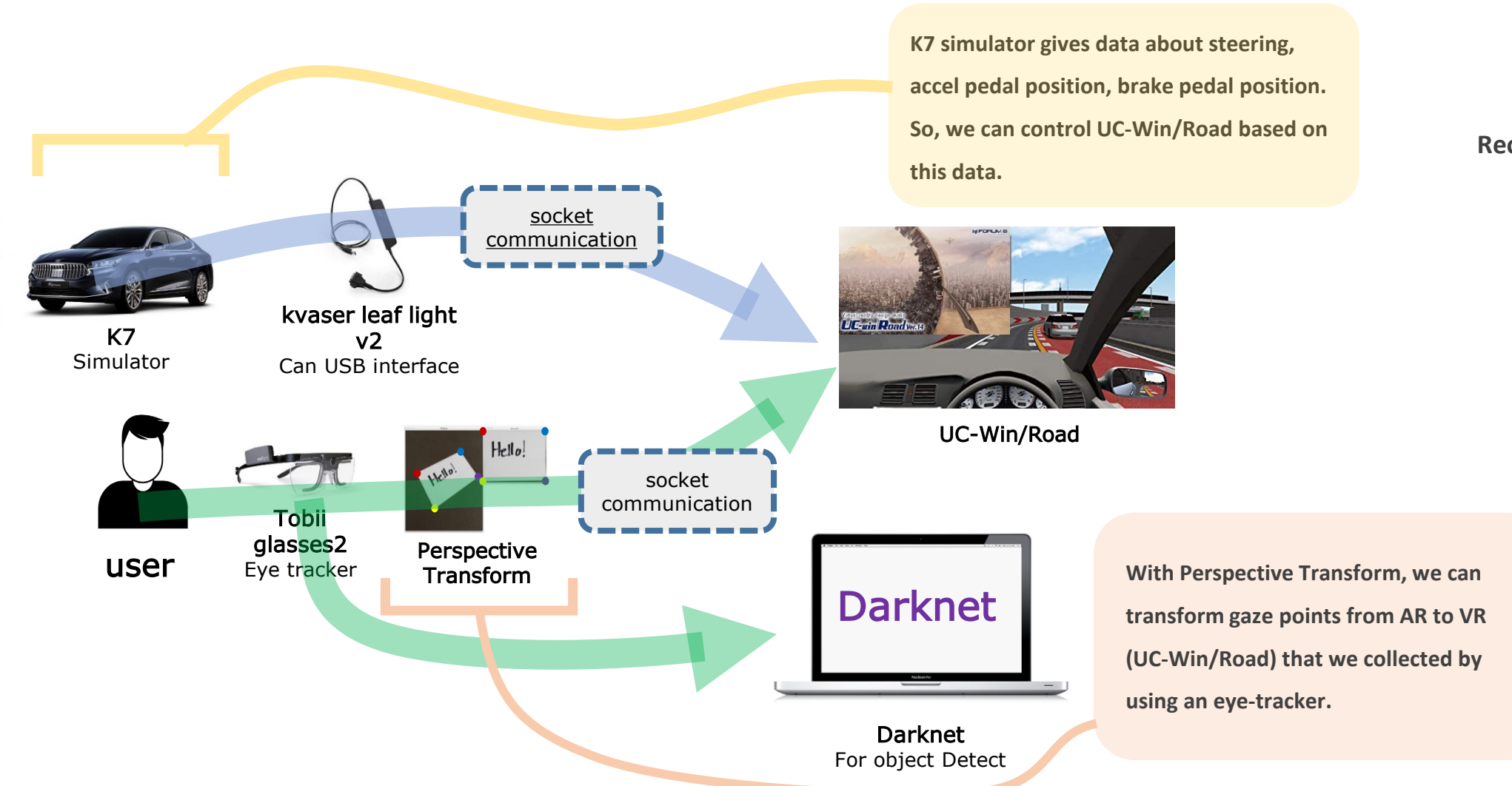
Not possible to determine if the driver is aware of abnormal vehicles or other road hazards.

Unnecessary warnings may sound even if the driver has already detected and prepared for the hazard.

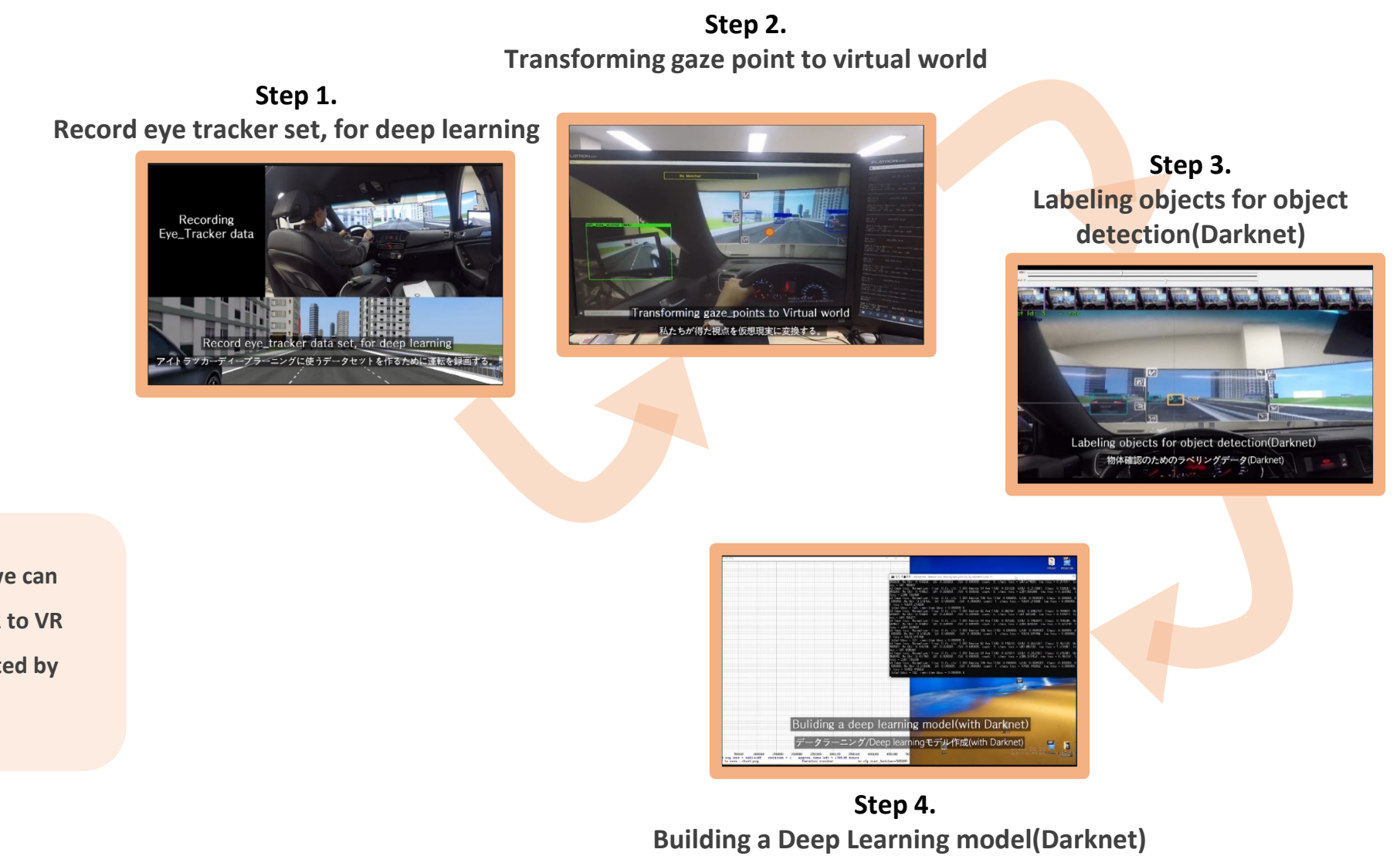
If the driver assistance system has information about the driver's focus of attention, it may suppress unnecessary warnings and can more easily detect the driver's intentions and respond to them.



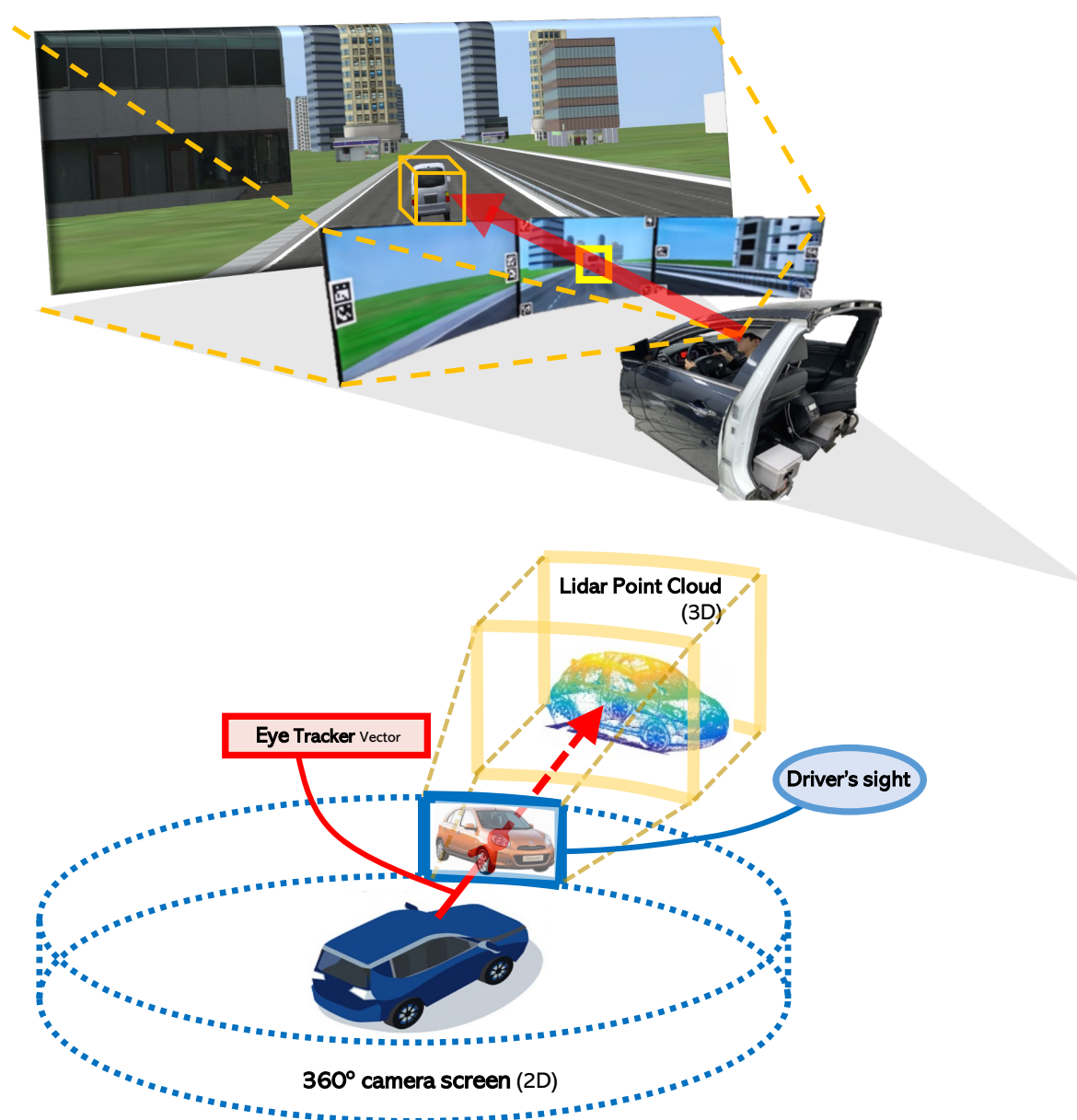
System configuration



Object detection



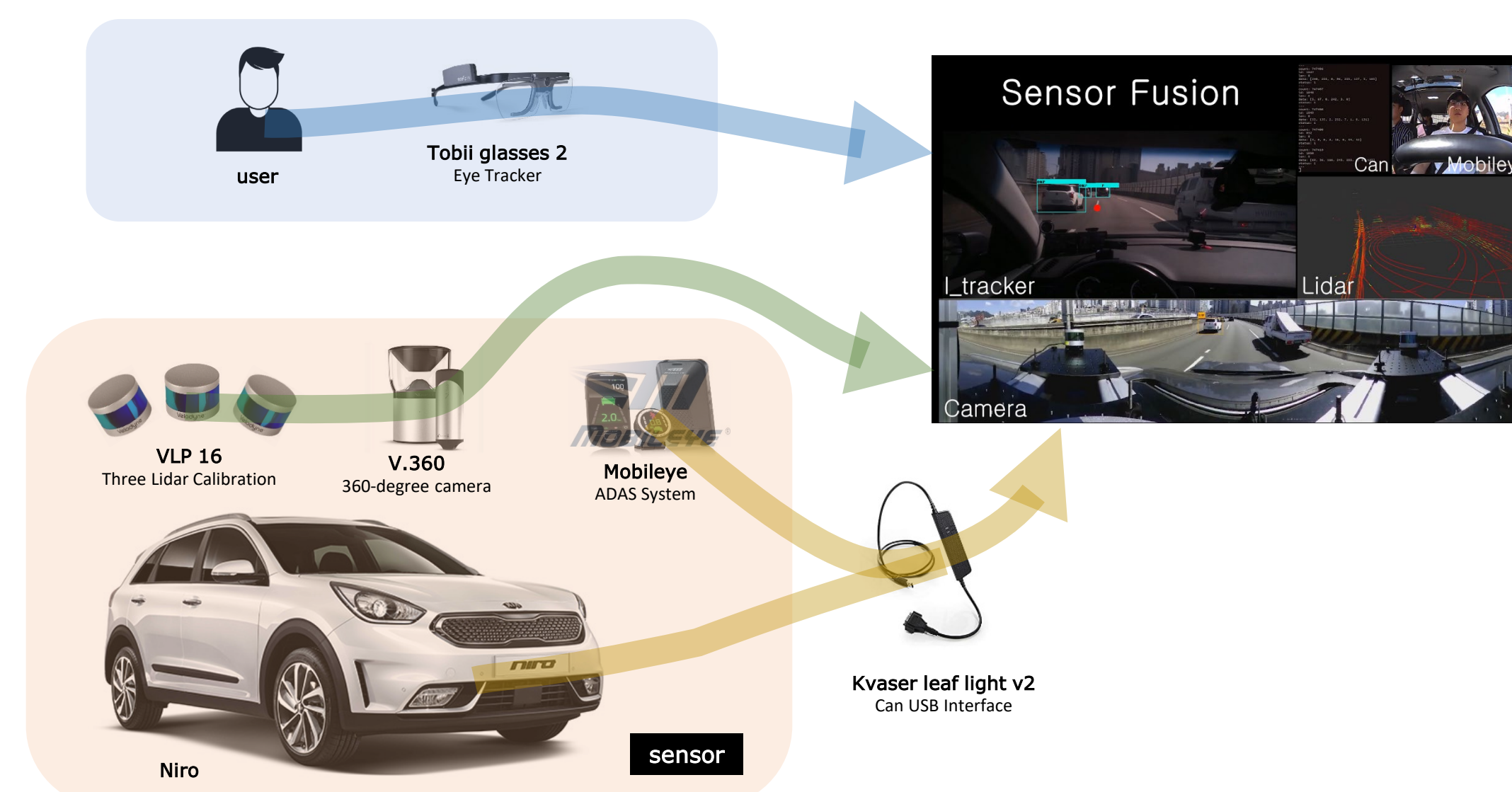
Simulator or Real World (Theory)



When the driver sees UC-win/Road image in the driving simulator, a Bounding Box is projected on the screen. The Bounding Box also has 3D information, therefore, we can implement the system as in the Real World.

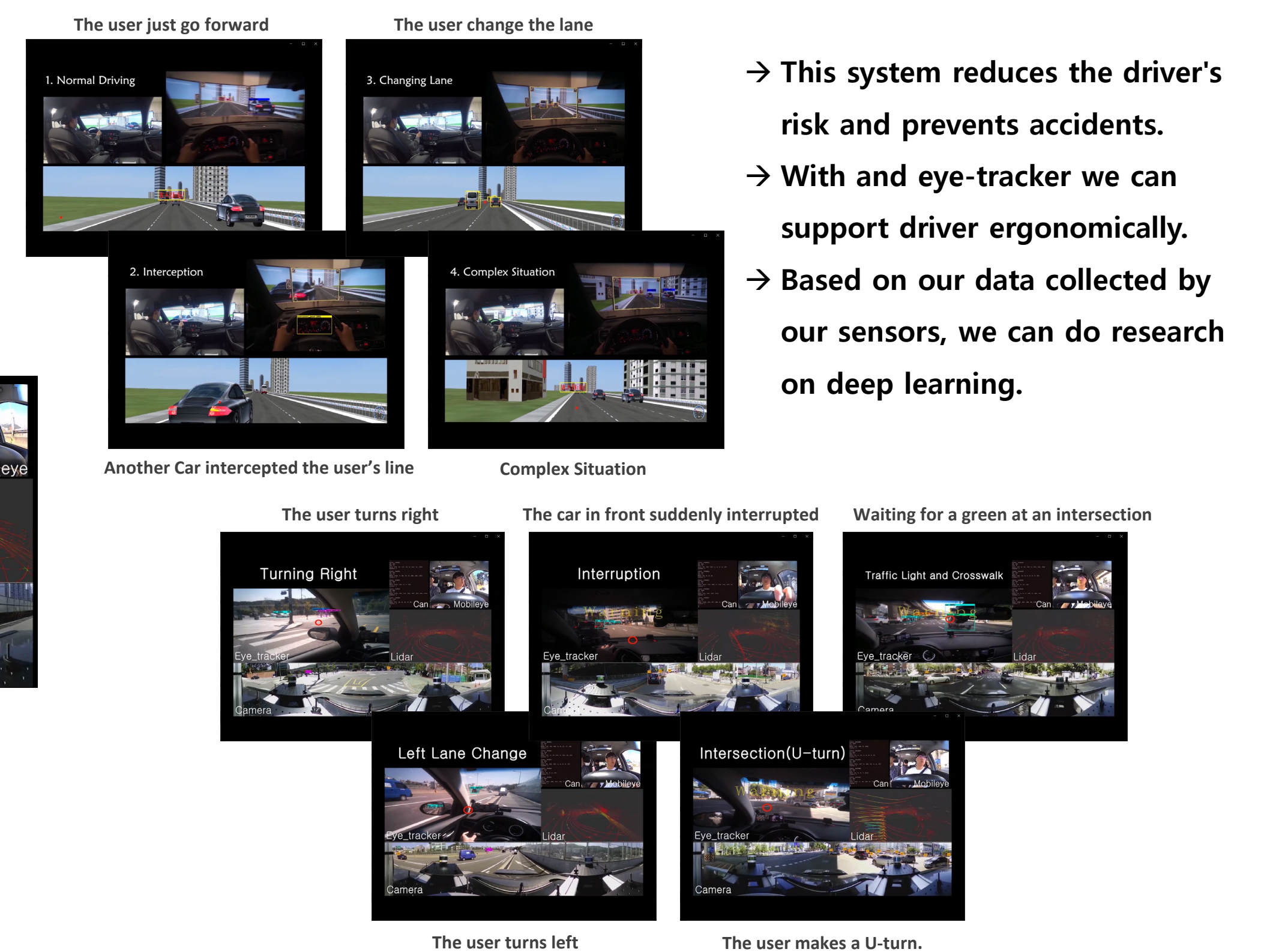
Application to Real World

1. Complement both camera and Lidar to effectively increase recognition accuracy.
2. Use of real-time coordinates from the eye-tracker to find the objects the driver is looking at, among those detected by the Lidar and the camera.
3. If the driver is not looking at an object related to a particular hazard situation, a warning is given by sound or visual alert system.



Simulate

Demo Scenario (UC-win/Road World)



→ This system reduces the driver's risk and prevents accidents.

→ With and eye-tracker we can support driver ergonomically.

→ Based on our data collected by our sensors, we can do research on deep learning.

Demo Scenario (Real World)

Application