Contributing to Remote Control

～ Remote Control Unit, Camera, and Image Integration ECU ～

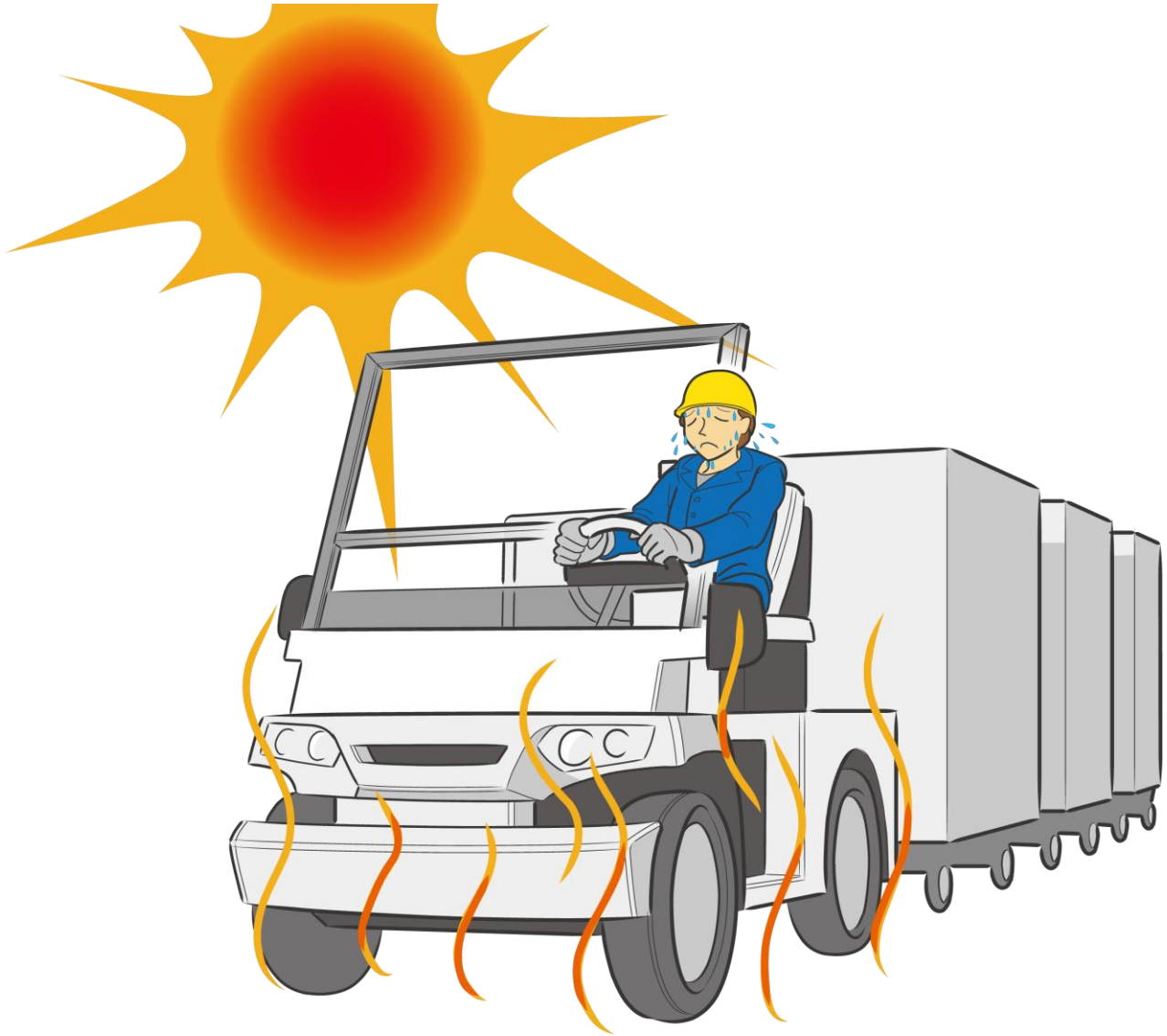
遠隔操作に貢献する

～ 遠隔操作コントロールユニットとカメラ及び映像統合ECU ～

TOKAI RIKA

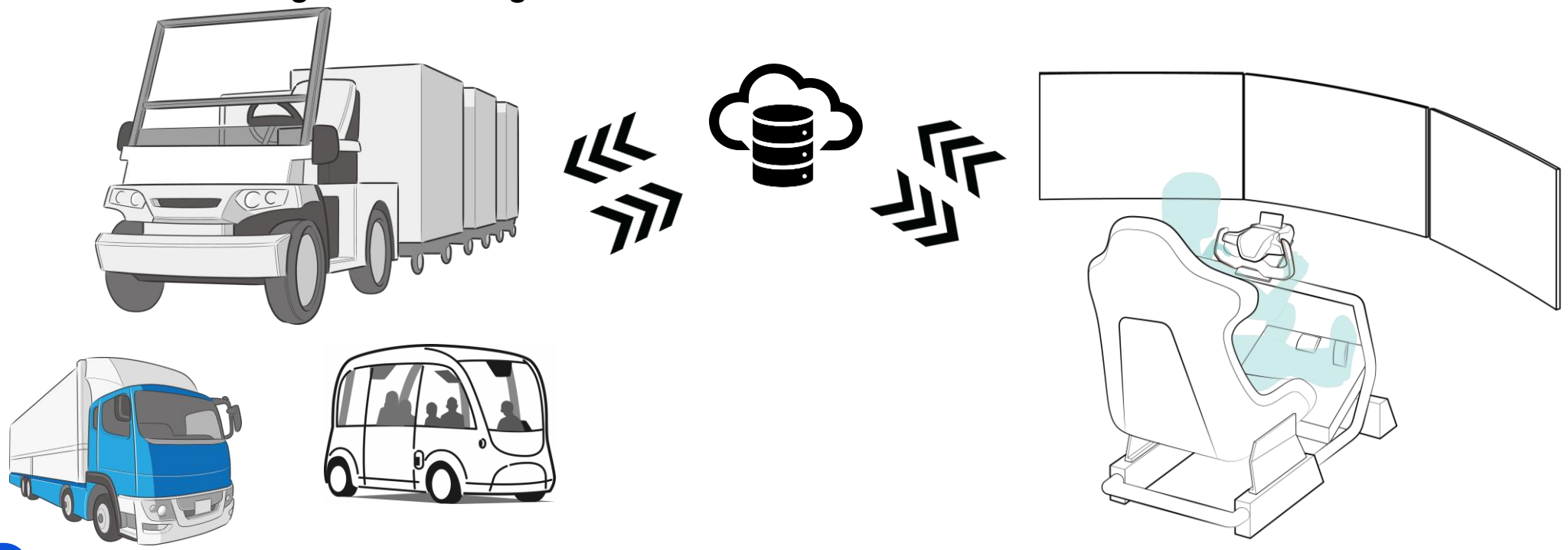
Background

Harsh work environments and resulting labor shortage in various fields have become social issues.



Summary

There is a need of remote control mobility systems as a solution to social problems such as harsh work environments and resulting labor shortage in various fields.



Benefits

Benefits of employers

- Recruitment appeal
- Less labor cost
- Fewer labor accidents

Benefits of workers

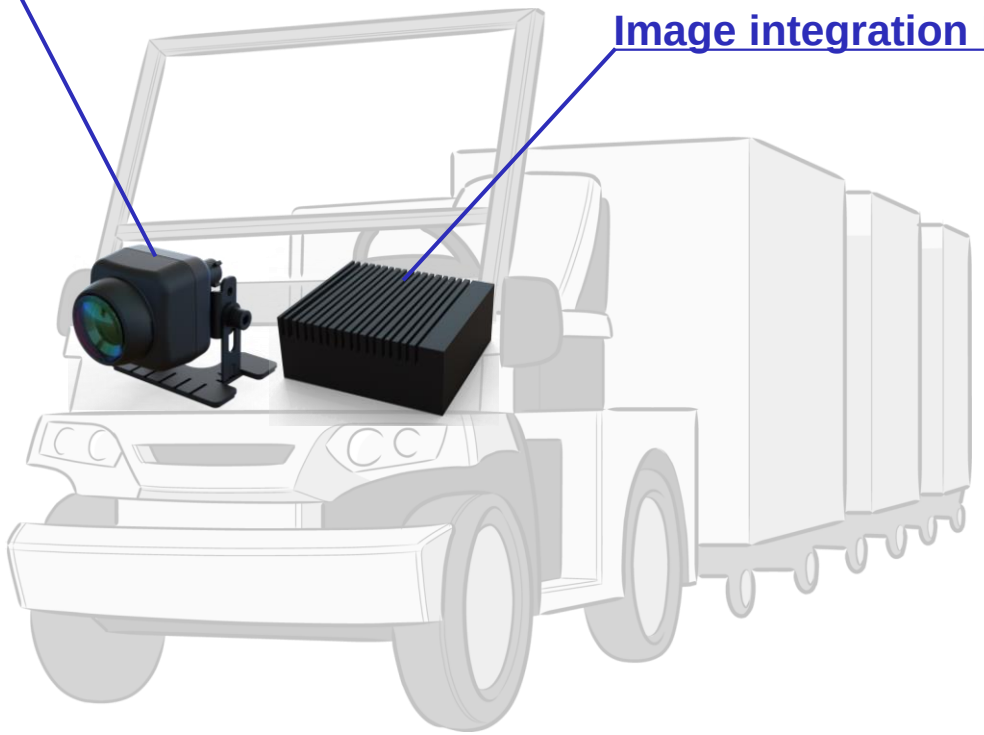
- Efficient use of in-between time
- More carrier choices
- Avoidance of harsh work environments

Content and Overview

The items are offered by Tokai Rika

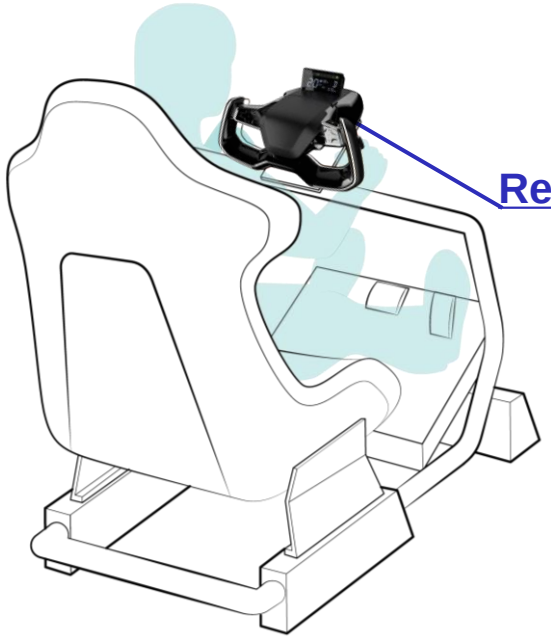
Cameras

Image integration ECU



External image

Remote control unit



Technology

Remote control unit

This all-in-one control unit incorporates switches, a display, and a sensor that have the same strengths as those installed in an actual car. The switches also have realistic operating feelings.

Horn switch

Car horn beeps.

Display *

shows the driving speed and warning indicators.

Lever switch

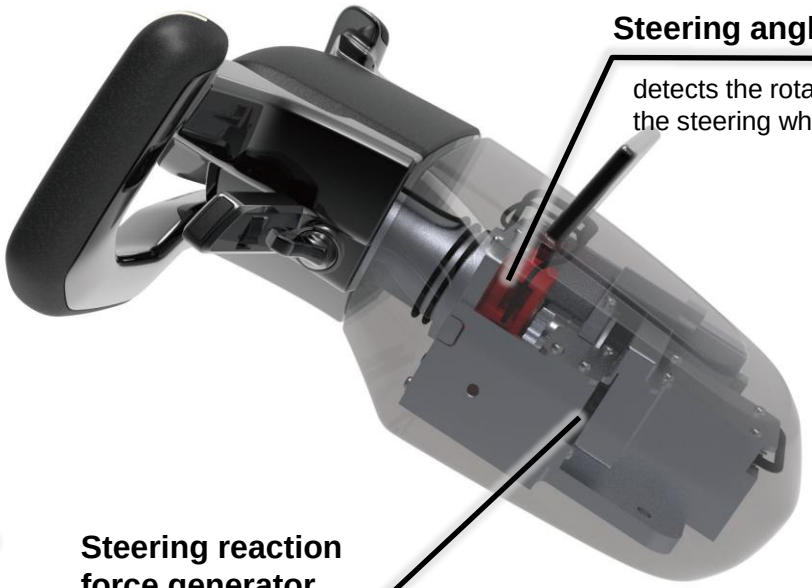
integrates a turn, light and wiper functions.

Custom switches *

Functions can be assigned upon request.

Shift switch

selects forward or backward travel.



Steering angle sensor

detects the rotation angle of the steering wheel.

Steering reaction force generator

transfers steering wheel operating load to a driver.

* Optional.

The photos show exhibition mockups.

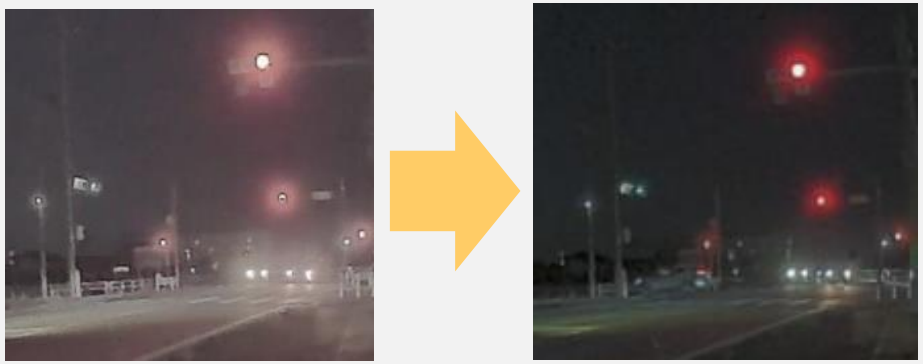
Technology

Image processing

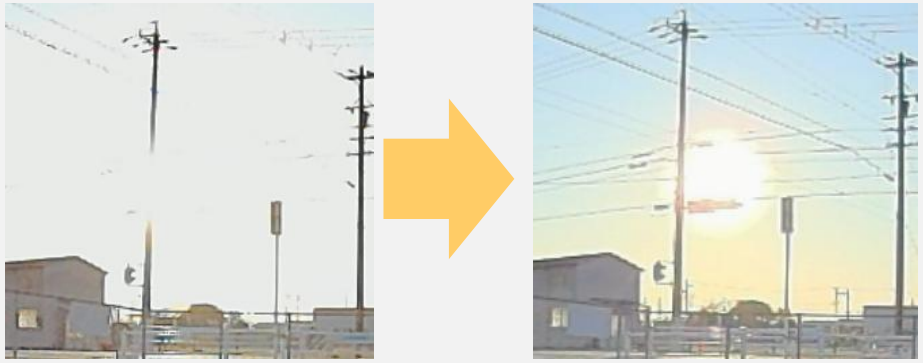
High visibility for safe operation

Clear visible images are created according to brightness.

Night

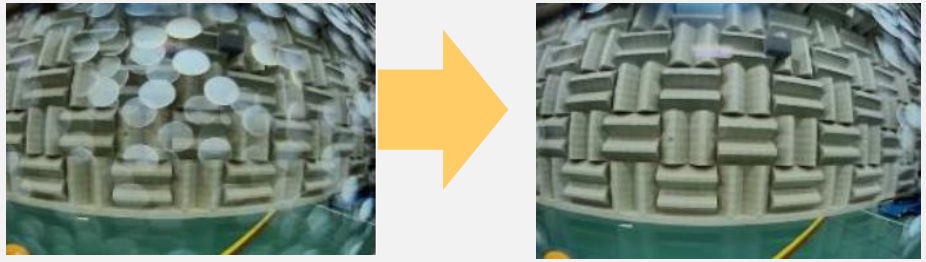


Evening



Waterdrops are quickly removed on a rainy day

Rain



Optimal data quantity for less time lag

Required images are stitched to reduce transmission quantity

Data quantity is controlled according to the state of communications

Example of application of technology

The image processing technology is used for the remote monitoring system of a self-driving bus.

(Tokai Rika offered the system in some demonstration experiments.)

Self-driving bus

Remote control room

Safe postures
Passengers are sitting in a seat or holding a strap

Unsafe posture
A standing passenger is not holding a handrail or strap

In-cabin monitoring system

- When detecting any passenger' unsafe behavior, the monitoring system informs the supervisor to prevent the passenger from falling.
- The system is also available for existing regular bus services.