

Exterior Monitoring System

Background

In accordance with the Public-private ITS Initiative / Roadmaps 2020 and 2021, driverless autonomous mobility service is in the phase of demonstration experiment and social implementation to put the service into practical use in 40 places in 2025 and nationwide around 2030.

A Level 4 remote autonomous driving service with a remote supervisor has been approved by the road traffic reform law and will be enforced by April 2023.

Social problems

Many images are confusing



Transmission delay of images.



A large amount of images increase communication cost.

Monitoring many mobilities at a time is hard.



Interaction with passengers is needed.



Images are not enough to understand situations.

Difficult to recognize passengers' motions.

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Overview

Remote autonomous driving systems, which can compensate for dwindling mobility services due to driver shortage, require supervisors in control rooms to monitor surroundings for safety without delay.

Our system's eye-friendly wide view can reduce their mental workloads.

An optimized amount of high-quality images are immediately sent to a control room from a mobility for safe and secure monitoring.

Overview

Brightness and color are adjusted between each camera.

Wide angle of views.

Optimized image quantity and quality.

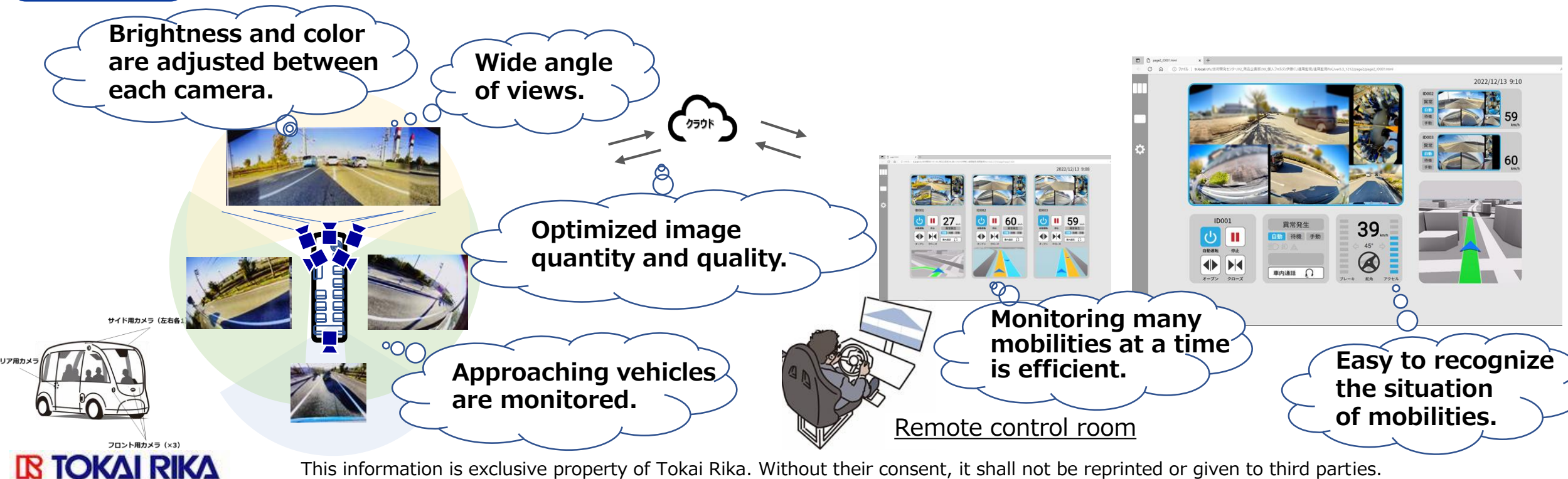
Approaching vehicles are monitored.

Monitoring many mobilities at a time is efficient.

Easy to recognize the situation of mobilities.

Remote control room

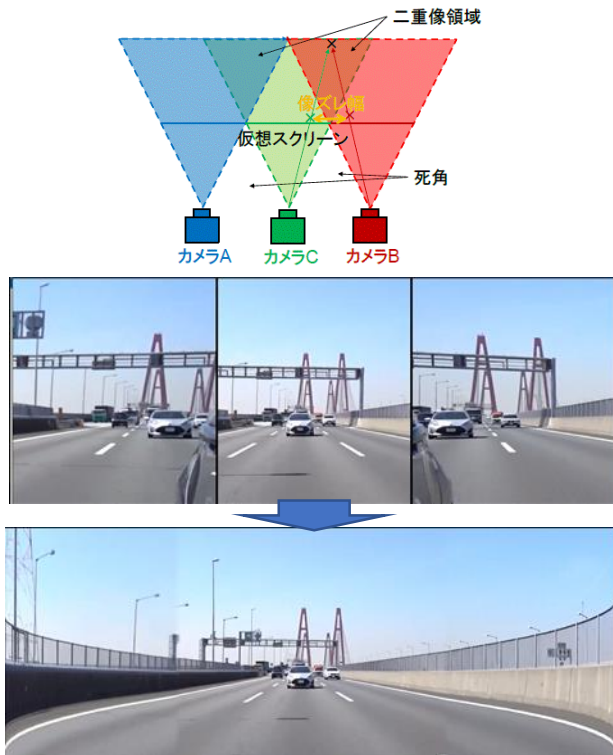
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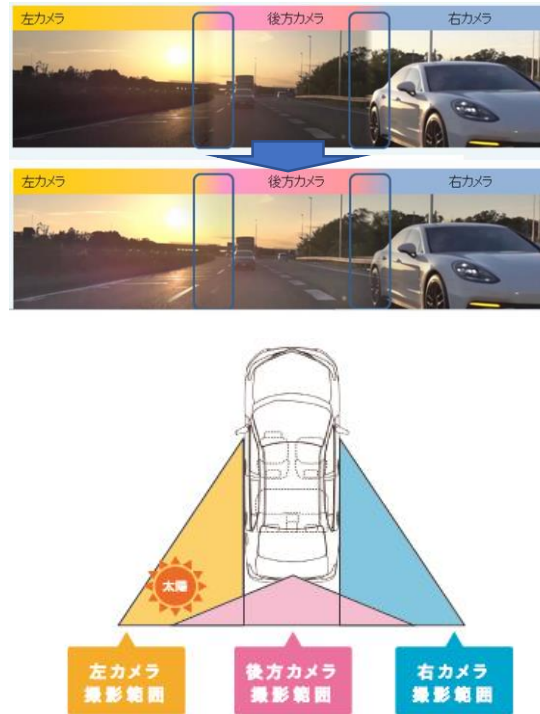
Technology introduction

【Image stitching】



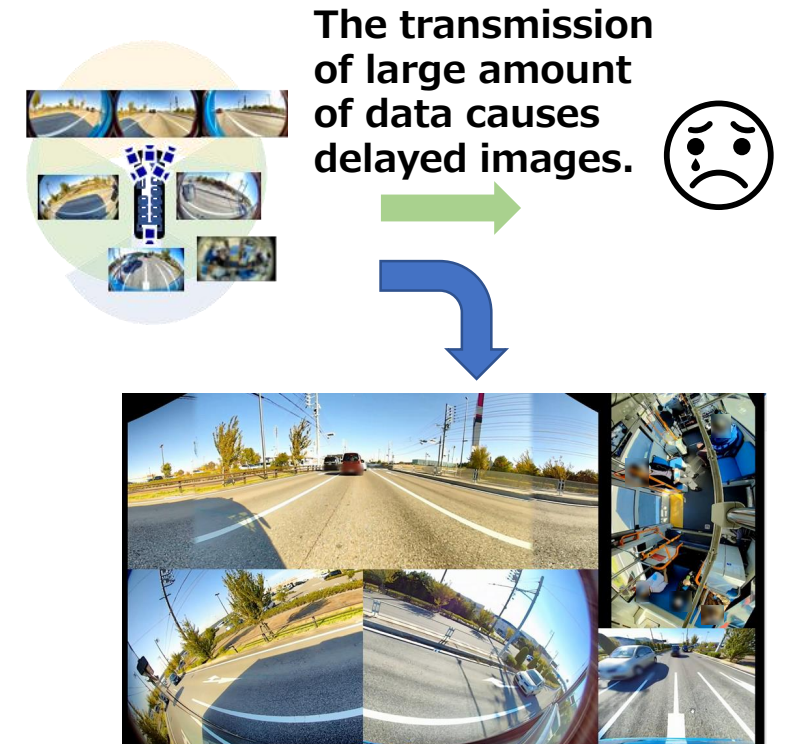
Overlapping fields of view are removed.

【Brightness control】



Difference in brightness of images between cameras are automatically adjusted to produce well-balanced images.

【Data traffic control】



Images are processed to minimize the quantity of images to be displayed.

Exterior Monitoring System

Specifications

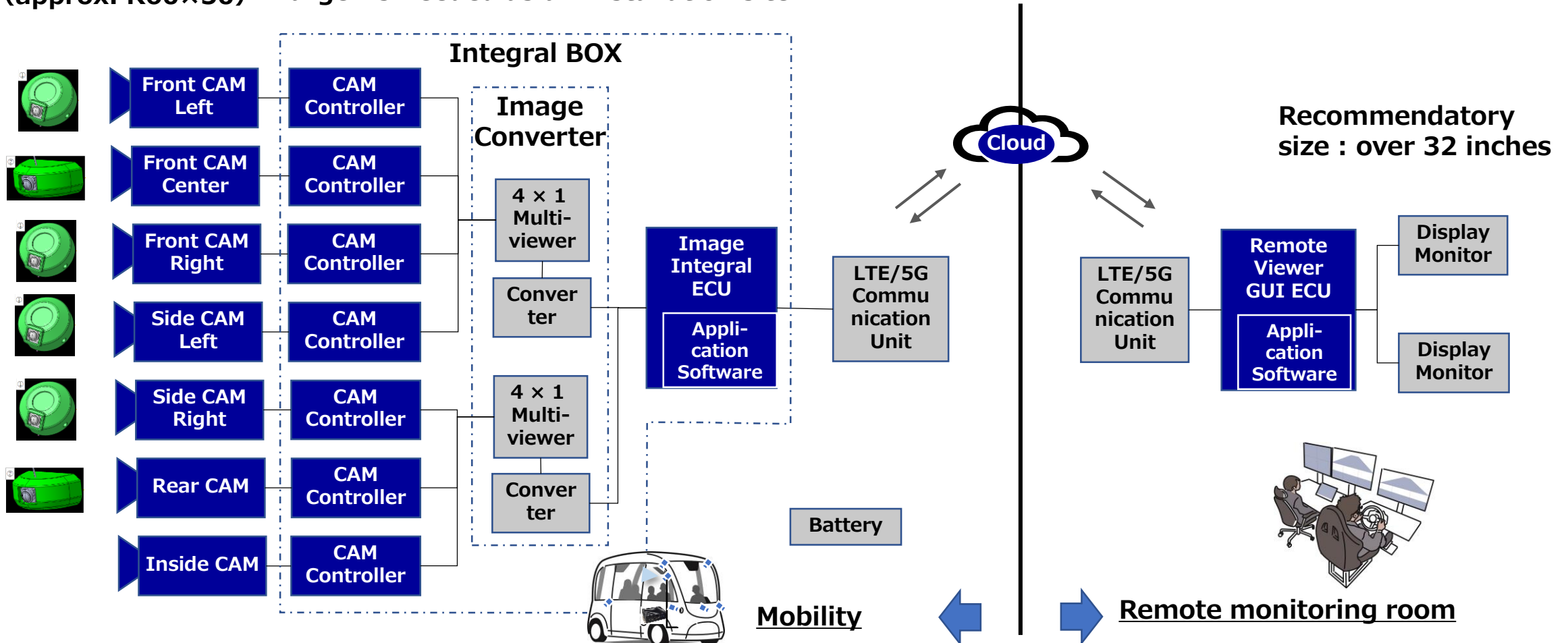
Offered by
Tokai Rika.

Custom-built by
Tokai Rika.

Please prepare, or
Offered by Tokai Rika.

Custom design
(approx. R60×50)

Space of 450 (w) x 410 (d) x 430 (h) or
larger is needed as an installation site.



Exterior Monitoring System

Use cases

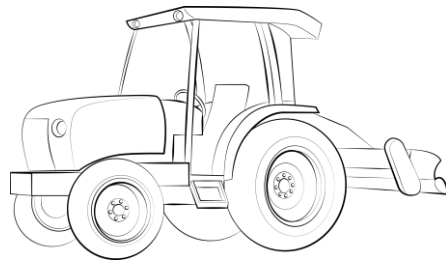
Tokai Rika joined the Aichi prefectural autonomous driving project and offered images around and inside vehicles to be displayed in a remote control room



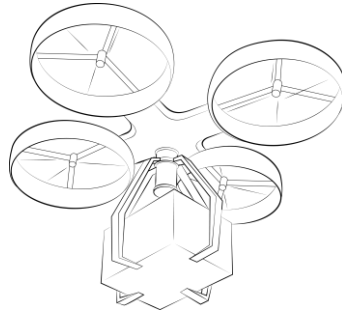
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Proposal for usage

Our system can be applied to various remote monitoring.



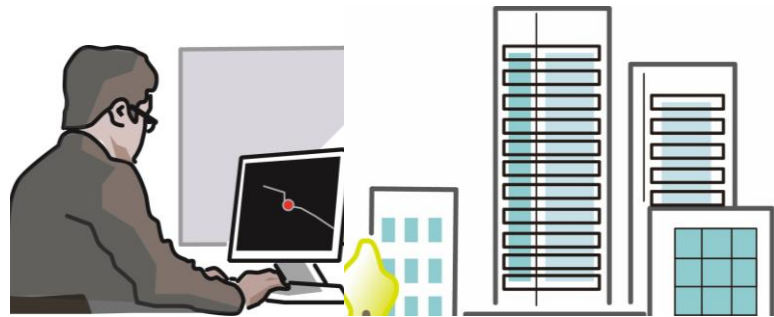
Smart agriculture



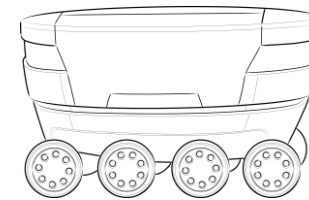
Drone business



Marine business



Smart building



Advanced Robot