



Vehicle Data Recording and Transmission for Automated and Connected Vehicles



+ Feature

This technology provides data recording and transmission for automated and connected vehicles. It integrates the information of ADAS/ADS vehicles and the remote control center. Data at the vehicle are collected and transmitted to the remote center for monitoring. When any abnormal event occurs, the remote center can take over the control of the vehicle. The data recorder equipped at the vehicle collects data through controller area network, Ethernet and 4G cellular network. The vehicle data include perception, decision and control information. The data are compressed before being sent to the remote center through 4G cellular network. Some real-time vehicle parameters, including vehicle position, velocity, heading and video stream, are displayed at the remote center. Besides, the historical data can be downloaded at the remote center for further analysis. When any abnormal event occurs, the operator at the remote center can monitor the vehicle through video streaming and then send control commands.

+ Technique

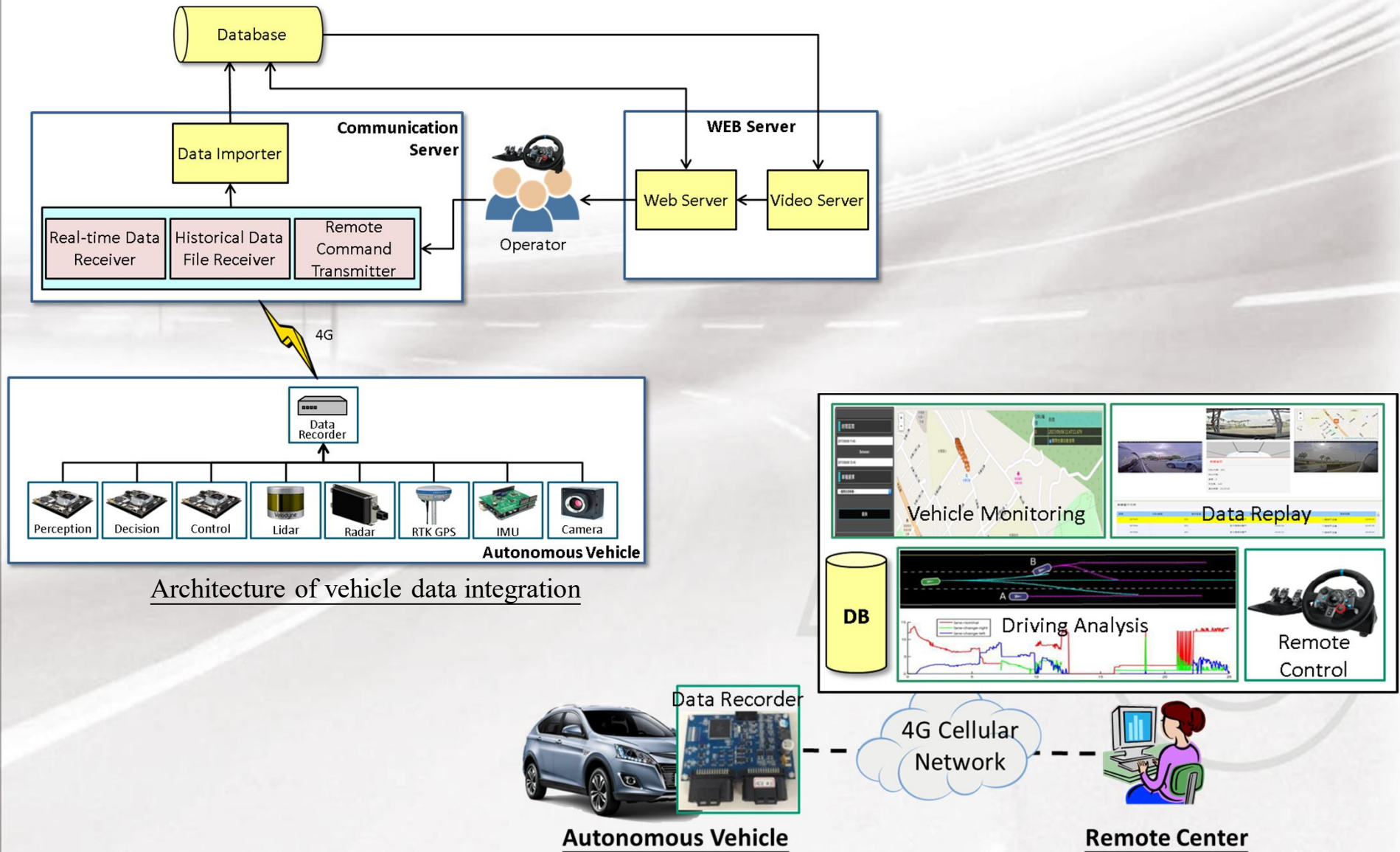
1. Data compression technology for in-vehicle network
2. Data transmission technology for in-vehicle network
3. Video streaming technology for in-vehicle network

+ Specification

1. Interface: CAN 2.0 A, IEEE 802.3 100Mbps Ethernet, 4G cellular network
2. Ethernet: data compression rate ≥ 5
3. Video Stream: 720x480 resolution, H264 compression standard, streaming latency $\leq 100\text{ms}$
4. CAN Bus: data compression rate ≥ 5



Demonstration



Architecture of vehicle data integration

Autonomous Vehicle

Remote Center